APPENDIX 2

Curriculum Vitae of Fifty Eight Faculty

Dr. Chris Baylis
Dr. Matt Boegehold
Dr. Elizabeth Bowdridge
Dr. Rob Brock
Dr. Paul Brown
Dr. Vince Castranova
Dr. John Connors
Dr. Mary Davis
Dr. Judy Delp
Dr. Aaron Erdely
Dr. Patti Erdely
Dr. Jeff Fedan
Dr. Gunter Franz
Dr. Dave Frazer
Dr. Jeff Frisbee
Dr. Bob Goodman
Dr. Leah Hammer
Dr. John Hankinson
Dr. Steve Hardy
Dr. Ping He
Dr. Tom Heming
Dr. Stan Hileman
Dr. Linda Huffman
Dr. Mike Johnson
Dr. Rich Johnston
Dr. Eric Kelley
Dr. Rick Klabunde
Dr. Vasmi Kodali
Dr. Ping Lee
Dr. Scott Levick
Dr. Jim Lewis
Dr. Julie Lockman
Dr. Bob Mercer
Dr. Mike Michalkiewicz
Dr. Ron Millecchia
Dr. Lance Molnar
Dr. Eiskue Murono
Dr. Jamal Mustafa
Dr. Mohammed Nayeem
Dr. Tim Nurkiewicz
Dr. Barbara Karmes Packard
Dr. Mark Paternostro
Dr. Dale Porter
Dr. Mark Reasor
Dr. Jenny Roberts
Dr. Salik Hussain
Dr. Roseane Santos
Dr. Berny Schreurs
Dr. Vince Setola
Dr. Laurie Sherwood
Dr. Anna Shvedova
Dr. Jim Simpkins
Dr. Dave Smith
Dr. Bill Stauber
Dr. Venkatesh Sundararajan
Dr. Karen Woodfork
Dr. Stan Yokota
Dr. Hangang Yu

8/26/2004

08/26/04

CURRICULUM VITAE

NAME: Christine Baylis
BIRTHPLACE: London, England
CITIZENSHIP: US (Naturalized 12/15/92)
EDUCATION:
University: Undergraduate and Graduate: Leeds University Department of Physiology, Leeds, Yorkshire, England BSc Hons. 1st Class 1971. Ph.D. 1974.

FELLOWSHIPS:

Science Research Council of Great Britain NATO fellowship	1974-1976
National Kidney Foundation Fellowship (US)	1976-1977
Wellcome Trust Senior Biomedical Research Fellowship (UK)	1977-1981

POSTDOCTORAL EXPERIENCE:

Postdoctoral fellow in Nephrology, UCSF, San Francisco, CA(Laboratory of Dr. Brenner, VA Hospital)	1974-1976
Postdoctoral fellow in Nephrology, Department of Medicine, Brigham and Womens Hospital/Harvard Medical School, Boston, MA	1976-1977

UNIVERSITY APPOINTMENTS:

Assistant Professor, Department of Physiology, Manchester University, Manchester, England	1977-1981
Assistant Professor, Department of Medicine, Division of Nephrology, Brigham and Womens Hospital/Harvard Medical School, Boston, MA	1982-1983
Assistant Professor, Department of Medicine,Division of Nephrology, University of California, San Diego, CA	1983-1987
Associate Professor, Department of Physiology, West Virginia University, Morgantown, WV	1987-1990
Professor, Department of Physiology,West Virginia University, Morgantown, WV	1990-2004
Professor of Physiology and Functional Genomics, Professor of Medicine University of Florida.	2004

HONORS AND AWARDS:

Hungarian Society of Nephrology, Koranyi Sandor award for contributions to Nephrology	1996
Benedum award for Biomedical Research at WVU	1997
Elected Fellow of the Council for High Blood Pressure Research	2002
Invited Lecturer for “Michael A Kirschenbaum” Lecture series.	2003
Barry M. Brenner endowed lecture, ASN 2004	2004

SOCIETIES AND ORGANIZATIONS:

Physiological Society of Great Britain	1978-86
International Society of Nephrology	1979
American Federation of Clinical Research	1985
International Society for the study of Hypertension in Pregnancy	1985
American Society of Nephrology	1986
Women in Nephrology	1990
American Physiological Society	1992
American Heart Association, Kidney Council	1992

RESEARCH SUPERVISION OF STUDENTS AND FELLOWS:

UNDERGRADUATE STUDENTS:

1. Sam Shube. UCSD.	1984
2. Sam Girardi. UCSD.	1984
3. Tammy McAllister. UCSD.	1985
4. Kevin Reese. UCSD.	1986
5. Christine Zimmerman. UCSD.	1986
6. Derryl Depriest. UCSD.	1986,1987
7. Kevin Engels. WVU.	1989
8. Paul Harton. WVU.	1990

GRADUATE STUDENTS:

1. Daisy K. Shum. University of Manchester. 1 yr research rotation.	1980-81
2. Joyce Takeyasu. USCD. 2 quarters research rotations.	1983
3. Karen Munger. UCSD. Ph.D.	1984-87
4. Emma David. WVU. 2 semester rotations.	1989
5. Shyama Masilamani. WVU. Ph.D.	1990-93
6. Aihua Deng. WVU. Ph.D.	1990-93
7. Maria Gutierrez. WVU. 2 semester rotation.	1990-91
8. Changbin Qiu. WVU. Ph.D.	1991-94
9. Joan Bloch. West Virginia University. MS.	1994-96
10. Shen Xiao. WVU. Ph.D.	1995-99
11. Beth Santymire. WVU MD, PhD	1996-99
12. Aaron Erdely. WVU. PhD.	1999-2002
13. You-Lin Tain	2003-present

POSTDOCTORAL FELLOWS:

1. Kamal F. Badr, M.D. Boston. (Co-Supervisor with B.M. Brenner)	1982-83
2. Stephen Nadler, M.D. Boston. (Co-Supervisor with B.M. Brenner)	1982-83
3. Michael Fredericks, M.D. UCSD.	1985-86
4. Jane Reckelhoff, Ph.D. WVU.	1987-90
5. Cheryl Hill, Ph.D. WVU	1992-94
6. Zhang Xin-Zhou MD	1996
7. Atiya Malik Lateef MD (Nephrology fellow)	1995-1996
8. Ziv Greenfeld PhD	1996-1999
9. Laszlo Wagner MD	1998-01
10. Aaron Erdely, PhD	2003
11. Cheryl Smith	2003 -present
12. Sarah Knight	2004

VISITING SCIENTISTS:

1. Bridget Slangen, M.D. (Maastricht, Netherlands) 2 months	1993/1995

2. George Losoncy, M.D. (Budapest, Hungary) 2 months 1993
2 months 1995
8 months 1996
3. Tamas Suto, M.D. (Budapest, Hungary) 6 months 1994
4. Ernst Beinder, M.D. Erlangen/Nurenberg, Germany) 3 months 1997
5. Eileen Gallery, M.D. (Sydney, Australia) 5 months 1999
6. Lushen Sun PhD. (PRC) 3 months 2000
7. Veronika Muller, M.D. (Budapest, Hungary) 18 months 2000-2002
8. Attilla Szabo, M.D. (Budapest, Hungary) 18 months 2000-2002
9. Weimin Peng, M.S. (PRC) 1 month 2003

JOURNAL REVIEWER FOR:

American Journal of Medical Sciences
American Journal of Obstetrics and Gynecology
American Journal of Physiology F, H, E and R series
Circulation Research
Clin. Exp. Hypertension, Part B. Hypertension in Pregnancy
Diabetes
Hypertension
Journal of American Society of Nephrology (JASN)
Journal of Cardiovascular Pharmacology
Journal of Clinical Investigation
Kidney International
Nephron
Pharmacological Reviews
Renal Physiology

JOURNAL EDITORIAL BOARD:

Guest Co-Editor with Marshall Lindheimer of April 1987 edition of Am. J. Kidney Diseases. Proc. of Symposium on the Kidney and Pregnancy. Held in Chicago, 1986.
Editorial Board:
American Journal of Physiology, Regulatory, Integrative and Comparative Physiology, 7/93-present
American Journal of Physiology, Renal, Fluid and Electrolyte Physiology, 7/93-6/95
Hypertension, 1997-present
Journal of American Society of Nephrology (JASN), 7/94-2001

JOURNAL EDITOR

Section Editor, Current Opinion in Nephrology and Hypertension, Circulation and Hemodynamics Section, 3/96-3/99.
Associate Editor of American Journal of Physiology; Renal 11/96-2001

GRANT REVIEWER FOR:

Member Cardiovascular & Renal NIH study section 1990-1994
Member, VA Merit Review Board, Nephrology 2000-2002
Chair 2003
Member, PBKD NIH study section 2003-2007

OTHER:

NIH special study section on "Dietary factors in Hypertension" 1986
National Kidney Foundation for Young Investigator awards 1986,87
Reviewer for NIH Nephrology Training Program (T32) 1988
Ad-hoc reviewer for Cardiovascular and Renal NIH study section 1988,89
Cardiovascular & Renal NIH study section Reviewers Reserve 1990-96

Reviewer for March of Dimes, Birth Defects Foundation	1990
Reviewer for Kidney Foundation of Canada	1990
Grant agency of the Czech Republic	1993,2002
VA Merit Review, external reviewer	1992,94,95,99
AHA WV-Ohio Affiliates Grant reviewer	1996
Ad-hoc reviewer for General Medicine B NIH study section	1997
Reviewer for Israel Science Foundation.	1996, 97, 2003
NIH K08 awards	2000
NHMRC (Australia)	2002
Wellcome Trust of Great Britain	2003

GRANTS AWARDED:

CURRENT	NIH RO1 DK 45517: PI. $154,000/yr (direct)	1992-2004
	NIH R01 DK 56843: PI. $154,000/yr (direct)	2001-2005
	Biopure Corp. Contract. PI. Total $36,379 (direct)	2002-2004
	NIH R01 NIDDK/NICHD. $225,000/yr direct "IMCD phosphodiesterase in pregnancy; role in ECFVE " PI:	2004 - 2009

EXPIRED

Wellcome Trust Senior Fellowship in Basic Biomedical Sciences Full salary, technician salary, equipment, travel and supplies in sterling. Equivalent to $40,000-50,000/yr (PI)	1977-1981
North West Kidney Foundation of Great Britain. $10,000 (in sterling) for equipment (PI)	1980
American Heart Association Grant-in Aid. $95,040 Declined in favor of overlapping NIH grant (PI)	1982-1985
NIH R01 HL29478: $63,875 (direct) (PI)	1982-1983
NIH R01 HL31933: ~$**120,000/yr direct)** (PI)	1983-1999
American Heart Association Grant-in Aid (local S. CA). $23,792 (PI)	1984-1986
UCSD Academic Senate: $6,507 (PI)	1983-1985
NIH R01 DK39963: $240,000 (direct) (PI)	1987-1990
WVU BRSG: $4,950 (PI)	1988-1989
American Heart Association Grant-in Aid: $14,634 (Co-Investigator)	1988-1989
WVU BRSG: $7,870 (PI)	1990-1991
Baxter Healthcare Corp.: $40,000/year (PI)	1991-1998
American Heart Association local WV Chapter Postdoctoral Fellowship: $50,000. Sponsor for Dr. C. Hill	1992-1994
SmithKline Beecham (Contract): $21,000 (PI)	1991-1993
National Research Council: $10,300 fellowship to host Visiting Scientist, Dr. T. Suto (PI)	1994
March of Dimes, Basic Research Grant: ~$90,000 direct (PI)	1995-1997
West Virginia University Health Sciences Centre Team Development Grant: ~$63,000 direct (PI)	1995-1997
Hoffman La Roche Contract 4/1/98-4/1/99. $70,330/yr direct. PI C Baylis.	1998-99

LECTURES, PRESENTATIONS AND INVITED SEMINARS AT NATIONAL/INTERNATIONAL MEETINGS:

1. Co-organizer and speaker at the symposium on the glomerulus, a satellite symposium of the 1984 Int. Congr. of Nephrology, held in San Diego.
2. Co-organizer and speaker at an International Symposium on "Renal Function and Hypertension in Pregnancy", Chicago, 1986
3. Invited speaker at Int. Soc. Nephrol., Montreal, 1978. "Acute Renal Failure" symposium.
4. Invited speaker Int. Soc. Biochem., Oxford, 1979. "Biochemical Aspects of Renal Function".

5. Invited Chairperson at Int. Union. Physiol. Sci., Budapest, 1980. "Renal Hemodynamic Session"
6. Invited speaker at Int. Soc. Nephrol., Athens, 1981. Symposium on "Control of Glomerular Filtration"
7. Invited speaker at Ann. meeting of Am. Soc. of Nephrol. Washington, 1981. Symposium on "The Kidney in Pregnancy"
8. Invited speaker at Int. Union. Physiol. Sci. Sydney, 1983. Symposium on "Renal Hemodynamics and proximal Tubular Reabsorption".
9. Invited Chairperson at Ann. meeting of Am. Soc. Nephrol., Washington, 1984. "Renal Hemodynamics Session"
10. Invited speaker to Ann. meeting of Mexican Soc. Nephrol., Acapulco, 1985. Guest lectures on; "The Kidney in Pregnancy" "Control of Glomerular Hemodynamics"
11. Invited Chairperson at Ann. meeting of Am. Soc. Nephrol. Washington, 1986. "Renal Hemodynamics Session".
12. Invited speaker at the Annual meeting of the International Society for the study of hypertension in pregnancy held in Montreal, May 1988. State of the art lecture on "Glomerular hemodynamics in normotensive and hypertensive pregnancy".
13. Invited participant in FASEB symposium (New Orleans). "Sexual dimorphism in regulation of blood pressure and water and electrolyte homeostasis" March 1989
14. Invited speaker to New York Society of Nephrology on "Glomerular dysfunction in the ageing kidney" April 1990
15. Invited speaker in Satellite Symposium to 11th Int. Congress Nephrol. (Tokyo, July, 1990) on "The Kidney and Hypertension in Pregnancy"
16. Invited workshop speaker and session chairman at "International Society of Study of Hypertension in Pregnancy", Perugia, Italy, October, 1990
17. Invited abstract reviewer and session chairman at Annual Meeting of the American Society of Nephrology Washington, DC, December, 1990.
18. Invited speaker at Society for Perinatal Obstetricians, San Francisco, January, 1991 in symposium on "Hypertension in Pregnancy"
19. Chairman, Abstract Review Committee on Hypertension/Renal Hemodynamics and Session Chairman at Annual Meeting of the American Society of Nephrology, Baltimore, November 1991
20. Invited speaker at Hypertension Investigators Meeting, Amelia Island, Florida, March 1992 "Renal effects of acute and chronic EDRF blockade"
21. Invited speaker at Symposium on Kidney and Hypertension in Pregnancy, University of Chicago, May 1992 "Glomerular hemodynamics in normotensive and hypertensive pregnancy"
22. Invited speaker at FASEB Summer Conference, VT, June/July 1992, "Endothelial factors in control of renal hemodynamics"
23. Co-organizer of Symposium on "Volume regulation in pregnancy" at International Society for the Study of Hypertension in Pregnancy, Buenos Aires, November 1992
24. Invited speaker to the Australian Society for Study of Hypertension in Pregnancy and Australian and New Zealand Nephrology Society, Tasmania, March 1993
25. Invited speaker in FASEB Symposium on EDRF and the Kidney, New Orleans, March 1993
26. Invited speaker on blood pressure control in pregnancy, Plenary Session, West Virginia University Research Day, April 1993
27. Invited speaker in Symposium on EDRF and the Kidney, IUPS, Glasgow UK, August 1993
28. Invited workshop Chair/Speaker “Vascular reactivity in animal pregnancy” at 9th meeting of the International Society for Study of Hypertension in Pregnancy, Sydney Australia, March 1994
29. Invited speaker at Symposium on “Hypertension in Pregnancy” at International Society of Hypertension, Melbourne Australia, March 1994
30. Invited speaker at “Hypertension Investigators Meeting” at Amelia Island, Florida, May 1994
31. Invited speaker at National Kidney Foundation Meeting, “Womens Health Issues”, Orlando FLA, October 1994
32. Invited speaker at the Japanese Nephrology Forum, Tokyo March 1995.
33. Invited speaker, keynote address, at the Japanese Hypertension in pregancy meeting, Tokyo March 1995.

34. Invited speaker, symposium on Clinical and Basic Research, Research day, West Virginia University, April 1995.
35. Invited speaker, FASEB symposium on “Cardiovascular and Renal Ageing”, April 1995.
36. Invited speaker, ASH meeting symposium, “Endothelial and physical factors in hypertension”, May 1995.
37. Member of organizing committee, and symposium chair, FASEB summer conference on renal hemodynamics, June 1995.
38. Invited speaker, ISN (Madrid) symposium on “Nitric oxide in acute renal failure”, July 1995.
39. Invited speaker, Homer Smith 100 year anniversary celebration, August 1995.
40. Invited speaker, Consortium of Southeastern Hypertension Centers (COSEHC) annual meeting symposium, “ Nitric oxide: an evolving role in hypertension”, August 1995.
41. Presentation to Cardiovascular Aging Advisory Group Panel, National Institute of Aging/NIH, September 1995.
42. Invited speaker at North American Society for Study of Hypertension in Pregnancy; Pre-eclampsia Research. “Role of NO in normal and pre-eclamptic pregnancy.”
Workshop organizer on “Getting started in an independent research career”. December 1995
43. Invited speaker at 33rd Congress of the European Renal Association (ERA/EDTA), symposium on “Pregnancy-induced hypertension”, Amsterdam, Netherlands, June 1996.
44. State of Art speaker on “Nitric oxide; physiologic and pathgophysiologic effects on kidney and blood pressure” at Hungarian Society of Nephrology, Miskolc, Oct 1996.
45. Invited speaker at XIIth meeting of Inter-American Society of Hypertension, symposium on Pregnancy and Hypertension “ Nitric oxide in normal and hypertensive pregnancy". Mexico City March 1997.
46. Invited speaker on "Nitric oxide in pregnancy; possible role of nitric oxide deficiency in preeclampsia" in symposium on Ob/Gyn and "Physiologic roles of nitric oxide in control of BP and kidney function; impact of NO deficiency states" in symposium on Molecular Medicine at 32nd Middle Eastern Medical Assembly, Beirut Lebanon, May 1997.
47. Invited speaker on "Nitric oxide metabolism in normal and hypertensive pregnancy" in symposium on Pregnancy, Hypertension and the kidney, XIVth meeting of the International Congress of Nephrology, Sydney Australia, May 1997.
48. Invited speaker at one day symposium on "Renal disease and Hypertension in Pregnancy" Univ Erlangen-Nurenberg, Germany, June 1997
49. Invited speaker at XXXIIIth Int Congr Physiol Sciences, symposium on "Nitric oxide in regulation of vascular and tubular function" St Petersburg, Russia. June/July 1997
50. Invited speaker to FESBE (Brazilian equivalent of FASEB), symposium on Nitric oxide and the cardiovascular system" at Caxambu Brazil, August 1997
51. Invited speaker, at International Symposium "New frontiers in Hypertension" Sao Paulo, Brazil, Sept 1997.
52. Symposium on “Control of GFR in normal and abnormal pregnancy”, Geneva, Switzerland Sept 1997.
53. Invited speaker in Plenary Session on Team Development Grants, West Virginia University Research Day,March 1998.
54. Invited speaker in Clifford A. Barger Symposium "Acute studies on the interaction between NO and endothelin on renal function. FASEB April 1998, San Francisco.
55. Invited speaker to give Review lecture on "Cardiovascular and renal adaptations to pregnancy; role for NO", 17th meeting of the Int Soc Hypertension, Amsterdam, June 1998
56. Invited speaker on “Renal hemodynamics in aging” in symposium on the Aging kidney, Int. Soc Nephrol. Buenos Aires, Argentina, May 1999
57. Invited speaker on “NO deficiency in chronic renal disease” at Acta Physiologica Scaninavica symposium, Uppsala, Sweden, June 1999.
58. Invited speaker on “The impact of pregnancy on the progression of renal disease” at NIH meeting on Women and renal disease, Bethesda, Sept 1999.
59. Invited speaker on “Animal models of chronic renal disease”, panel on CRI, Hoffman La Roche, Basel Switzerland, Oct 1999.

60. Invited speaker, “NO deficiency in chronic renal disease” at the Hypertension Investigators meeting, Amelia Island, Florida, Jan 2000.
61. Speaker on”Renal hemodynamics in normal and compromized pregnancy: Role of NO”in Symposium on “Pre-eclampsia 2000”, Stanford University School of Medicine. Feb 2000.
62. Organizer and speaker for Experimental Biology (EB) featured topic “ Impact of Gender and pregnancy on renal function”. San Diego April 2000.
63. Invited speaker on “NO deficiency and CRD” in NIH workshop on NO as a therapeutic agent for sickle cell and other vascular diseases, Bethesda, Sept 2000.
64. Invited symposium speaker at Am Soc Nephrol, Symposium on pregnancy and the kidney, Toronto, Oct 2000.
65. Invited keynote speaker “Role of nitric oxide in renal physiology and the pathogenesis of disease” Meeting of the MARS Nutrition Research Council, Werribee, Australia, Jan 2001.
66. 3 Lectures in the VIIIth Nephrology Summer School, Budapest on “ GFR in normal and compromized pregnancy”, “The aging kidney”, “NO deficiency as cause and consequence of renal disease”, September 2001.
67. Invited Symposium speaker on “Nitric oxide deficiency and chronic renal disease” at Am Soc Nephrol, San Francisco, Oct 2001.
68. Invited Symposium speaker on “Nitric oxide deficiency and chronic renal disease” at Am Heart Assoc, Los Angeles, Nov 2001.
69. Invited speaker at NIA workshop on the “Biology of Aging”; “Sexual dimorphism in the aging kidney; structure/function relationships. Changes in the NO system with age that may contribute”. VA, Jan 2003
70. Keynote speaker at MacDonald club/ British Society of Maternal-fetal Medicine meeting “GFR in normal and compromized pregnancy” York UK, March 2003.
71. Invited lecturer: “Michael A Kirschenbaum” Lecture series. 5 seminars at UC Irvine, Long Beach VAMC, UCLA/Sepulveda VAMC, USC. Los Angeles CA, May/June 2003.
72. Invited speaker at German National meeting “Nitric oxide as a cause and a consequence of ESRD” Berlin Dialyseseminar. Berlin Germany, Dec 2003.
73. Invited speaker at International Symposium”Vascular NO: From bench to bedside” “Nitric oxide as a cause and a consequence of ESRD”. Hannover Germany, March 2004.
74. Barry M. Brenner endowed lecture “NO deficiency in CRD and ESRD”, ASN 2004, St Louis, October 2004.

INVITED SEMINARS:

Renal Group, London. UK. Glomerular permselectivity. 1978.
University of Sheffield, UK, Department of Zoology. 1978. "Renal Hemodynamics in Pregnancy"
University of Manchester. UK. Department of Physiology. 1979. "Renal Hemodynamics in Pregnancy"
University of Sheffield. UK. Department of Medicine. 1979. "Renal Hemodynamics in Pregnancy"
University College, Dublin. Eire. Department of Pharmacology. 1979. "Renal Hemodynamics in Pregnancy"
University of Birmingham. UK. Department of Physiology. 1979. "Renal Hemodynamics in Pregnancy"
Stanford University. Department of Medicine, Renal Section. Sept. 1980. "Renal Hemodynamics in Pregnancy"
University of Southern California. Department of Physiology and Biophysics. Sept. 1980. "Thromboxanes and the Kidney"
University of California, San Francisco. Department of Medicine, Renal Division. Sept. 1980. "Renal Hemodynamics in Pregnancy"
University of Texas, San Antonio. Department of Medicine, Renal Division. Sept. 1980. "Thromboxanes and the Kidney"
Harvard Medical School/Peter Bent Brigham Hospital Department of Medicine, Renal Division. Oct. 1980. "Renal Hemodynamics in Pregnancy"
Glaxo Pharmaceuticals Ltd. UK. Research Ltd. October 1980. "Thromboxanes and the Kidney"
Harvard Medical School/Brigham and Womens Hospital Department of Medicine. Renal Grand Rounds. 1981. "Renal Hemodynamics in Pregnancy"

University of Texas, Galveston. Division of Nephrology. May 1982. "Renal Hemodynamics during Pregnancy"
Boston University Medical Center Division of Medicine, Renal Section. November 1982. "Control of GFR in Pregnant Rats"
Dartmouth Medical School, Department of Physiology. January 1983. "Renal Hemodynamics during Pregnancy"
Department of Pathology John Hopkins University. January 1983. "Mechanisms of Gentamicin Nephrotoxicity"
Renal Division, Department of Medicine UCSD. 1984. "Renal Hemodynamics in Pregnancy"
Loma Linda University Department of Physiology. February 1985. "Renal Hemodynamics during Pregnancy"
Department of Medicine Stanford University. April 1985. "Renal Hemodynamics during Pregnancy"
WVU, Department of Physiology. Feb. 1987. "Renal Hemodynamics in Pregnancy in Health and Disease"
University of Illinois. Department of Physiology. March 1987. "Renal Hemodynamics during Pregnancy in Health and Disease"
University of California, San Diego. Department of Medicine, Renal Division. May 1987. "Renal Hemodynamics During Pregnancy in Health and Disease"
WVU, Department of Biochemistry. 1987. "Renal Hemodynamics in Pregnancy in Health and Disease"
WVU, Department of Physiology. Jan. 1988. "Renal Hemodynamics in Pregnancy in Health and Disease"
WVU, Department of Physiology. Sept. 1988. "Multiple Defects in the Aging Kidney"
WVU, Department of Pharmacology & Toxicology. Jan. 1989. "Renal Hemodynamics in Pregnancy in Normotensive and Hypertensive States"
WVU, Endocrine Research Forum. April 1989. "Factors which Initiate the Gestational Renal Vasodilation"
Bowman Gray Medical School, NC. April 1989. Department of Medicine. "Multiple Defects in the Aging Kidney"
Bowman Gray Medical School, NC. April 1989. Department of Physiology. "Glomerular Hemodynamics in Pregnancy in Health and Disease"
University of Louisville. Department of Physiology and Biophysics. May 1989. "The Kidney in Pregnancy in Health and Disease"
WVU, Urology Department seminar. March 1990. "Multiple defects in the aging kidney"
Renal Division, North Shore Hospital/Cornell Medical School. April 1990. "Renal responses in normotensive and hypertensive pregnancies"
Renal Division, NYU (Bellevue). April 1990. "Renal physiologic responses to normal pregnancy"
Dept. of Obstetrics Grand Rounds. University of Vermont, Burlington. May, 1990. "Renal responses in normal and hypertensive pregnancies"
Vermont Vascular Club. University of Vermont. May 1990. "Multiple defects in the aging kidney"
Renal Division, Dept. of Medicine. University of Calgary, Alberta, Canada. September, 1990 Seminar: "Renal hemodynamics in normotensive and hypertensive pregnancy"
WVU, Physiology Dept. December 1990. "The Kidney in Pregnancy."
WVU, Department of Pediatrics Research Conference. March 1991. "Endothelial derived relaxing factor in control of BP and renal function"
Brigham & Womens Hospital/Harvard Medical School, Boston, Renal Division Grand Rounds. March 1991. "The mechanisms of evolution of age-dependent glomerular injury" and Research Seminar to Endothelial Biology Group, "Endothelial derived relaxing factor in control of BP and renal function"
WVU, Department of Medicine, Research Seminar. April 1991. "The mechanisms of evolution of age-dependent glomerular injury"
SUNY at Buffalo, Graduate Group in Experimental Nephrology. June 1991. "Effect of EDRF on the Kidney"
SmithKline Beecham Renal Division, King of Prussia, PA. May 1992. Research Seminars: 1) "Renal effects of acute and chronic EDRF blockade", 2) "Sex differences in progression of age-dependent glomerular damage"
Visiting Professor to Depts. Ob/Gyn and Medicine, University of Washington, Seattle, July 1992. Research Seminars: 1) "Control of GFR and mechanisms of progression of glomerular disease", 2) "Kidney function in Pregnancy", 3) "Renal effects of acute and chronic EDRF blockade"
WVU, Department of Physiology, August 1992. "The Ageing Kidney"

Visiting Professor to Semmelweis University, Medical School, Pathophysiology Institute, Budapest, Hungary. September 1992. Research Seminars: 1) "The kidney in normal and hypertensive pregnancy", 2) "EDRF and the Kidney"
WVU, Department of Pharmacology, September 1992. "Effects of Acute and Chronic EDRF Inhibition on the Kidney"
Department of Physiology and Biophysics, University of Mississippi at Jackson. December 1992. "EDRF and the Kidney"
Department of Physiology, University of Ohio, Columbus, December 1992. "EDRF and the Kidney"
WVU, Department of Obstetrics/Gynecology, Grand Rounds, December 1992. "The Kidney in Normotensive and Hypertensive Pregnancy; possible role for nitric oxide"
WVU, Department of Pathology, Research Seminar, January 1993. "Effects of Acute and Chronic Nitric Oxide Inhibition on Kidney Function", "Overview of Research Interests"
WVU, Endocrine Research Forum, January 1993. "The Kidney and Blood Pressure in Normal and Hypertensive Pregnancy: Possible Role for Nitric Oxide"
Renal Research Conference, March 1993. Department of Medicine, Royal North Shore Hospital, University of Sydney, Sydney, Australia. "Mechanisms of Age Dependent Damage to the Glomerulus"
General Grand Rounds, March 1993. Monash University Medical School, Melbourne, Australia. "Nitric Oxide in Normal and Preeclamptic Pregnancy"
Renal Conference, March 1993. Department of Medicine, St. Georges Hospital, Kagorah, Australia "Multiple Defects in the Ageing Kidney"
WVU Research Day, April 1993. "Nitric Oxide in Normal and Preeclamptic Pregnancy"
WVU Medicine Grand Rounds, June 1993 (given together with H. Overbeck, M.D.). "Essential Hypertension"
The University of Leeds, UK, Department of Physiology Seminar, July 1993. "Nitric Oxide in Control of Kidney Function and Blood Pressure. Importance in Pregnancy"
Tulane University, New Orleans, Department of Physiology Seminar, September 1993. "Effects of Acute and Chronic Nitric Oxide Blockade on BP and the Kidney"
Tulane University, New Orleans, Department of Medicine, Renal Rounds, September 1993. "Possible Role of Nitric Oxide Deficiency in Preeclampsia"
University of Louisville, Department of Physiology. Departmental Seminar. January 1994. “Nitric Oxide and the Kidney”
University of Pittsburgh, Department of Medicine, Division of Nephrology. May 1994.
Magee Womens Hospital and Department of Ob/Gyn, University of Pittsburgh. June 1994. Obstetrics Grand Rounds. “Nitric Oxide in Pregnancy”.
West Virginia University, Department of Physiology seminar “Renin/AII system and salt sensitivity in ageing”. Sept 1994.
West Virginia University, Department of Pediatrics research Seminar on” NO; Physiology and Pathophysiology”, Feb 1995.
Kobe University Medical School, Japan. Ob/Gyn Grand Rounds, “Nitric Oxide in Pregnancy”. March 1995.
West Virginia University Research Day: Talk in the plenary session on “Basic and clinical research on NO”, April 1995.
University of Cincinnati Medical School:
Nephrology Seminar “Renin/AII and sodium sensitivity in ageing kidney”
Medicine Grand Rounds “Physiologic roles of NO in control of BP and kidney function; possible consequences of NO deficiency in hypertension and progressive renal disease”
Joint Physiology/Ob-GYN seminar “Nitric Oxide in Pregnancy”. September, 1995.
Department of Physiological Sciences, University of Cork, Eire:
“Physiologic roles of NO in control of BP and kidney function”. July 1995
Invited Seminar on “Age-dependent injury to the glomerulus” to aging research group, Picower Inst. NY., Oct 1995.
Medicine Grands Rounds, “Physiologic roles of NO in control of BP and kidney function; possible consequences of NO deficiency in hypertension and progressive renal disease”. University South Carolina, Charleston, December 1995.
West Virginia University Department of Medicine, Morning Report on ‘The aging Kidney”, Dec 1995

Obstetrics Grand Rounds “Nitric Oxide in Pregnancy”; Perinatal research Conference “Physiologic roles of NO in control of BP and kidney function”; Residents noon conference “Volume regulation in pregnancy”. Cedars Sinai Medical School/UCLA, Department of Ob/Gyn, March 1996.
Research conference, San Francisco General / UCSF “Physiologic roles of NO in control of BP and kidney function”. March 1996.
Seminar to Hypertension Research Group, Georgetown Univ Medical School “Physiologic roles of NO in control of BP and kidney function; possible consequences of NO deficiency”. May 1996
Physiology Seminar, Georgetown Univ Medical School “The aging kidney”. May 1996
Research Conference, Renal Division, George Washington University Medical School “Sexual dimorphism in kidney physiology and pathophysiology” May 1996.
Seminar on “Nitric Oxide in Pregnancy; possible role of NO deficiency in pre-eclampsia” to Neprology/Obstetrics, University of Nuremberg, Germany, June 1996.
Seminar on “Physiologic roles of NO in control of BP and kidney function; role of the various NOS isoforms” to Nephrology, University of Erlangen, Germany, June 1996.
Seminar on “Physiologic roles of NO in control of BP and kidney function; role of the various NOS isoforms” Nephrology Division, University Medical School of Pecs, Hungary. Oct 1996.
Seminar on “Physiologic roles of NO in control of BP and kidney function; role of the various NOS isoforms” Department of Pathophysiology, Semmelweis Medical School, Budapest, Hungary. Oct 1996.
Seminar to WVU Endocrine Research Forum "Renal tubular adaptations to normal pregnancy". April 1997.
Benedum lecture on “Physiologic roles of NO in control of BP and kidney function;clinical situations of NO deficiency", WVU, April 1997.
Renal Grand Rounds on "The aging kidney" Dept Medicine, WVU.April 1997.
Pediatrics Grand Rounds on “Physiologic roles of NO in control of BP and kidney function;clinical situations of NO deficiency", University of Virginia, Charlottesville. Sept 1997.
Surgery Grand Rounds, WVU on "Clinical significance of the nitric oxide system" Nov 1997.
Renal Grand Rounds on "Nitric oxide deficiency in chronic renal disease" Dept Medicine, WVU.April 1998.
BAXTER Grantholders Meeting " Renin/angiotensin and sodium sensitivity in aging. Regulation of the nitric oxide (NO) system by dietary salt and age". May 1998
Physiology Department seminar, WVU. "Nitric oxide deficiency and renal disease" Sept 1998
Cardiology Grand Rounds, WVU “ Endogenous NOS inhibitors in atherosclerosis” March 1999.
Nephrology Grand Rounds, WVU “ The aging kidney” April 1999.
Joint seminar to Nephrology Division, Dept Medicine and Dept Integrative Biology, UT Houston "Nitric oxide deficiency and renal disease" September 1999.
Seminar to Physiology Department, University of North Carolina, Chapel Hill "Nitric oxide deficiency and renal disease" November 1999.
Seminar to Department of Physiology, Virginia Commonwealth University, Richmond, Va.”Renal hemodynamics in normal and compromized pregnancy: Role of NO”. April 2000.
Nephrology Grand Rounds, WVU ”Renal hemodynamics in normal and compromized pregnancy: Role of NO” May 2000.
Seminar to Vascular Biology Group, Medical College of Georgia “Nitric oxide deficiency and renal disease" October 2000.
Nephrology Grand Rounds, WVU ” Nitric oxide deficiency and renal disease” April 2001.
Seminar to Department of Physiology, WVU “Mechanisms of age-dependent kidney disease; role for progressive NO deficiency” August 2001.
Seminar to Division of Nephrology, University of Pecs Medical school, Hungary “Mechanisms of age-dependent kidney disease; role for progressive NO deficiency” August 2001.
Renal Grand Rounds “The kidney in normal and compromized pregnancy” May 2002.
Physiology seminar, WVU “Role of the IMCD in the normal plasma volume expansion of pregnancy”. Sept 2002
Renal Grand Rounds, Dept Medicine, Univ. Pittsburgh “Role of the IMCD in the normal plasma volume expansion of pregnancy”. Sept 2002.
Renal Grand Rounds, UC Irvine “NO deficiency as a cause and a consequence of ESRD I. Clinical and cell culture studies; II Studies in animal models. April 2003.
Medicine Noon conference, Long Beach VA “The aging kidney” April 2003.

Renal Grand Rounds, UCLA/ Sepulveda "The aging kidney" May 2003.
Renal Grand Rounds, USC "NO deficiency in CRD; cause and consequence" May 2003.
Physiology Seminar, Eastern Virginia Medical School "NO deficiency in CRD; cause and consequence" June 2003.
Renal Grand Rounds, UPMC, Department of Medicine, Division of Nephrology "NO deficiency in CRD; cause and consequence" September 2003.
Physiology seminar, WVU "NO deficiency in CRD; cause and consequence" September 2003.
Renal Grand Rounds, Univ Florida, Gainsville "NO deficiency in CRD; cause and consequence" September 2003.
Physiology seminar, Univ Florida, Gainsville "Pregnancy and the kidney" September 2003.
Renal Grand Rounds, Georgetown Univ, Washington DC "NO deficiency in CRD; cause and consequence" October 2003.
Seminar to Cardiology Division, Emory University, Atlanta "NO deficiency in CRD; cause and consequence" January 2004.
Seminar to Nephrology Division, Univ. of Tel Aviv, Israel "NO deficiency in CRD; cause and consequence" March 2004
Seminar to Nephrology Division, Univ. Haifa, Israel "NO deficiency in CRD; cause and consequence" March 2004
Renal Grand Rounds, WVU "ADMA and cardiovascular risk; possible role in progression of CRD" May 2004.
Renal Grand Rounds, Univ Florida, Gainsville "ADMA and cardiovascular risk; possible role in progression of CRD" July 2004.

Other.
Med school 101. The kidney. WVU. Nov 1999.
Faculty development session on WVU Internal grants, with A Martin, CB Wilson, M Stamatakis. Sept 2000.

TEACHING:

At Manchester University, UK:
Tutor to a group of 10 first year Medical students. To meet once a week and discuss various areas of Physiology. 1980-81.
Lectures to Pharmacy students on 1) Gastrointestinal Physiology. 2) Renal Physiology. 1980.

At University of California, San Diego:

For the Department of Medicine

1) Part of the Renal Section to Medical students with D. Fanestil and S. Mendoza. 1984-87.
2) Part of the Renal/GI Advanced (Graduate/MD) studies section. 1986-87.

For the Department of Biology

1) Mammalian Physiology Laboratory Course #154 with A. Selveston. 22h contact time/week for 50% of one quarter. 1984-87.
2) Mammalian Physiology lecture Course #153. Renal Section. 1986.
3) Mammalian Physiology Laboratory Course #152 with G. Wienhausen. 1986. 22h/week contact time for 50% of one quarter.

At WVU, Department of Physiology/School of Medicine:

1) Renal Section of Physiology #343 for Dental students. 1987-1995.
2) Part of Cardiovascular section for Graduate students, #491 Advanced Physiology.1988-89.
3) Part of Renal Section for advanced Graduate students, #491 Advanced Physiology. 1989-present. Course-Coordinator for Fall Adv. Physiol. 1990-2003.
4). Part of Renal Section for 1st year graduate physiology course, #350 section co-ordinator. 1995; 2002-2004.

5). Renal section for Human Physiology, 1995-2004t.
4) Faculty on Endocrine Postdoctoral Training Program, and Pharmacology Ph.D. training program, 1987-1994.
5) Member, Nephrology Fellowship Program, Department of Medicine, West Virginia University, 1990-2004.
6) Member, Pediatrics Fellowship Program, Department of Pediatrics, West Virginia University, 1992-1996.
7) Member, M.D., Ph.D. student committee, 1997-2002.

At UFL, Department of Physiology/School of Medicine:

1) Renal Section lectures and co-ordinator, Medical Physiology. 2004
2) Advanced Renal Physiology, lectures and co-ordinator. 2004

Thesis Committees:

Advisor
Karen Munger. Doctoral
Shyama Masilamani. Doctoral
Aihua Deng. Doctoral
Changbin Qiu. Doctoral
Joan Bloch. Masters
Xiao Shen. Doctoral
Beth Santymire. Doctoral
Aaron Erdely. Doctoral.
You-Lin Tain. Doctoral.

Committee Member
Daisy Shum. Masters
Malay Dey. Doctoral
John Rafi. Masters
Geoff Nase. Doctoral
Russ Linderman. Doctoral
Lara Fizzell. Doctoral
J.J. Ramirez. Doctoral
Scott Caveney. Doctoral
Jim Culhane. Doctoral
Tim Nurcewitz. Doctoral.
Bryan Sauls. Doctoral.
Debra Lenda. Doctoral.
Koby Mok. Doctoral at Georgetown Univ, Dept Physiol.
Y Zhou, External Examiner for Doctoral thesis, University of New South Wales, Australia.
Emily Spangler. Doctoral.

SERVICE COMMITMENTS

At UCSD: Member of Physiology/Pharmacology Graduate Faculty for School of Medicine

At WVU:

Departmental: Graduate studies committee from July 1988-Sept 1996. Chair, July 1, 1990 - June 30, 1992.
Organizer of Spring Semester Physiology Seminar Series, 1993-2000
Course Coordinator Advanced Physiology, Fall Semester, 1992-present
Member, Departmental Budget Committee, 2002-present
Promotion and Tenure Committee, July 1997-present.

School of Medicine:

Judge for Van Liere Research Convocation, 1988, 1997.
Member of the Search Committee for a new Dean for the Medical School, May 1988 - Nov. 1988
Graduate Student Recruiting Committee, Dec. 1988 - Dec. 1990
Basic Science Geriatric Research Committee, April 1989 - 1994
Advisory Committee for Minority High School Student Apprentice Program. April 1989 - 1998, Chair, 1993 - 1997.
Clinical Research Center Development Committee, February 1989 - 1990
Subcommittee on Tenure Track Guidelines, August 1989
Member of Search Committee for Cancer Center faculty appointments. Sept. 1990 - March 1991
Member of Search Committee for Physiology Chair. June 1992 - March 1993
Member, Research Advisory Committee for Mary Babb Randolph Cancer Center, April 1994- 1997.
Chair, cardiovascular/renal research planning group, August 1994-present
Member, Search Committe Cardiology, Dept Medicine, 1995.
Member of Search Committee for Cardiology Faculty, Dept Medicine. July-Sept 1995
Member of Search Committee for Vascular Surgery Faculty. Sept 1996 - 1997.
Member of the WVU HSC Research Renaissance Task Force, 1997-1998
Chair, Research design Team for the MBM process at WVU SOM, 1999.
Member, Women in Academic Medicine, 2000-2001.
Member, RDG Committee 2002-2004, WVU.

<u>At UFL</u>

Director, UF Hypertension Center. 2004.

WVU

Member of the University Faculty Senate, 1999 -2002
Member of the Senate research grants committee, 1999 -2002 .
Chair 2000-2001.
Member of the Benedum awards committee, 1997. Chair of Biosciences subcommittee, 1999/2000.
Member, Review Committee for Masters Program in Animal Science, Division of Animal and Veterinary Sciences. School of Agriculture. 1999/2000
Member, Radiation safety, Non human use committee. 2003-

State:

Member, Research Policy and Allocation Committee, AHA-WV Affiliate. Vice Chair, July 1995-June 1996.
Member, Research Peer Review Committee for Ohio-WV affiliate of AHA, 1996-1997.

National:

Reviewer for ASN Annual meeting, 1984, 1986, 1990, 1991,1994,1996 and 1997,2000. Section chair, 1991,1996,1997,2000, 2002.
Councillor, Women in Nephrology, 1991 -1994
Member, NIH Study Section, CVB, 1990-1994
Member VA merit review study section 2000-2002
Chair, VA merit review study section 2002-2003
Member NIH Study Section, GMB, 2003 – 2007
Ad hoc reviewer for other NIH study sections, PPGs, K08s etc 1988 – present.
Member, ASN State network public policy group, representative for WV, 1990-2000

Member, APS Renal Section Awards Committee for the 1993 Experimental Biology meeting (New Orleans)
Member, ASN Young Investigator Award Committee for 1993. AHA Kidney Council Representative.
Member, Organizing Committee, FASEB Summer Conference on Renal Hemodynamics for 1995.
Member, ASN Nominations Committee for 1995.
Member, Advisory Panel on Cardiovascular Aging, NIA/NIH 1995
Member, ASN Career Enhancement Grant Review Committee for 1996,1997.
Member, ASN Awards Committee, 1998 - 2001
Member of the APS Renal Section program committee, 1999 – 2000
Chair, APS Renal Section program committee, 2001.
Member of the APS Renal Section Young Invest award committee, 2000.
Member, American Society of Nephrology, Board of Advisors, 2003-5
Member, US Scientific Program Committee for IUPS 2005., 2003-5

International:

Chairman, Internal Audit Committee, International Society for Study of Hypertension in Pregnancy, ISSHP, 1990
Member of the Nominations Committee, International Society for the Study of Hypertension in Pregnancy (ISSHP), 1991-92
Member of the International Scientific Committee for 1994 ISSHP (Sydney, Australia).
Member of the International Scientific Committee for 1994 International Society of Hypertension (Melbourne, Australia)
Member of the International Scientific Committee for 1996 ISSHP (Seattle, USA).
Member of Advisory Board on “Chronic renal injury”, Hoffman La Roche, Basel, Switzerland. 1999

Institutional Grant Applications:

Established Investigator, Department of Pediatrics “Pediatrician Scientist Training Award” application to NIH, 1990
Co-Investigator on Department of Anatomy/School of Medicine, Shared Image Analysis Facility Application to NIH, 1991.
Co-Investigator on School of Medicine, NIH Construction Grant application, 1992
Co-Investigator on School of Medicine, IDeA application to NIH, 1993
Co-Investigator on Department of Medicine, CRC application to NIH, 1993, 1994,1995.
Co-Investigator on Department of Ob/Gyn, PERC application to NIH, 1994,1995.
Co-Director on School of Medicine “High School Apprentice Program” application to NIH, 1994 and 1997.

BIBLIOGRAPHY

I. Original Articles

1. Baylis C. The urinary excretion of potassium by the conscious dog. Ph.D. thesis. University of Leeds, 1974.
2. Baylis C, O'Connor, WJ. The effect of plasma potassium in determining normal rates of excretion of potassium in the dog. Quart J Exp Physiol. 61:145-157, 1976.
3. Baylis C, O'Connor WJ. The effect of the anions, phospate and sulphate on normal rates of excretion of potassium in dogs. Quart J Exp Physiol. 1:341-350, 1976.
4. Baylis C, Deen WM, Myers BD, Brenner BM. Effects of some vasodilator drugs on transcapillary fluid exchange in renal cortex. Am J Physiol. 230:1148-1158, 1976.
5. Baylis C, Ichikawa I, Willis WT, Wilson CB, Brenner BM. Dynamics of glomerular ultrafiltration. IX. Effects of plasma protein concentration. Am J Physiol. 232:F58-F71, 1977.
6. Bohrer MP, Baylis C, Robertson CR, Brenner BM. Mechanisms of the puromycin induced defects in the transglomerular passage of water and macromolecules. J Clin Invest. 60:152-160, 1977.
7. Baylis C, Rennke HG, Brenner BM. Mechanisms of the gentamicin induced defect in glomerular filtration in the Munich-Wistar rat. Kidney Int. 12:344-353, 1977.
8. Bohrer MP, Baylis C, Humes HD, Glassock RJ, Robertson CR, Brenner BM. Permselectivity of the glomerular capillary wall. Facilitated filtration of circulating polycations. J Clin Invest. 61:72-78, 1978.
9. Baylis C, Brenner BM. Modulation by prostaglandin synthesis inhibitors of the action of exogenous angiotensin II on glomerular ultrafiltration in the rat. Circ Res. 43:889-898, 1978.
10. Baylis C, Brenner BM. Mechanism of the glucocorticoid-induced increase in glomerular filtration rate. Am J Physiol. 234:F166-F170, 1978.
11. Baylis C. The mechanism of the decline in glomerular filtration rate in gentamicin-induced acute renal failure in the rat. J Antimicrob Chemother. 6:381-388, 1980.
12. Baylis C. The mechanism of the increase in glomerular filtration rate in the 12-day pregnant rat. J Physiol. 305:404-414, 1980.
13. Baylis C. Effect of imadizole on the dynamics of glomerular ultrafiltration in the rat. Renal Physiol. 2:278-288, 1979-80.
14. Baylis C. Effect of early pregnancy on glomerular filtration rate and plasma volume in the rat. Renal Physiol. 2:333-339, 1979-80.
15. Baylis C. Glomerular ultrafiltration in the pseudopregnant rat. Am J Physiol. 243:F300-F305, 1982.
16. Shum DKY, Baylis C, Scott JE. Glomerular and tubular handling of acidic glycosaminoglycans (AGAGS) by the rat kidney. Clinical Science, 64:205-212, 1984.
17. Badr KF, Baylis C, Pfeffer JM, Pfeffer MA, Soberman RJ, Lewis AR, Austen KF, Corey EJ, Brenner BM. Renal and systemic hemodynamic responses to intravenous infusion of leukotriene C_4 in the rat. Circ Res. 54:492-499, 1984.
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19. Baylis C, Badr KF, Collins RC. Effect of chronic prolactin administration on renal hemodynamics in the rat. Endocrinology. 117:722-729, 1985.
20. Baylis C, Blantz RC. Tubuloglomerular feedback activity in virgin and 12 day pregnant rats. Am J Physiol. 249:F169-F173, 1985.
21. Baylis C and Collins RC. Angiotensin II inhibition on blood pressure and renal hemodynamics in pregnant rats. Am J Physiol. 250:F308-F314, 1986.
22. Gehrig JJ, Jamison RL, Baylis C, Troy JL, Brenner BM, Jamison RL. Effect of intermittent feeding on renal hemodynamics in conscious rats. Am J Physiol 250:F566-F572, 1986.
23. Garland HO, Atherton JC, Baylis C, Morgan MRA, Milne CM. Hormone profiles for progesterone, ostradiol, prolactin, plasma renin activity, aldosterone and corticosterone during pregnancy and pseudopregnancy in two strains of rats: Correlation with renal studies. J Endocrinology. 113:435-444, 1987.
24. Baylis C. Renal effects of cyclooxygenase inhibition in the pregnant rat. Am J Physiol. 253:F158-F163, 1987.

25. Baylis C. Effects of administered thromboxanes on the intact, normal rat kidney. Renal Physiol. 10:110-121, 1987.
26. Tucker BJ, Mundy CA, Ziegler MG, Baylis C, Blantz RC. Effect of prolonged head down tilt on renal function and glomerular dynamics in the rat. J Appl Physiol. 63:505-513, 1987.
27. Munger KA, Baylis C. Sex differences in renal hemodynamic in rats. Am J Physiol. 254:F223-F231, 1988.
28. Baylis C, Falconer-Smith J, Ross BD. Glomerular and tubular handling of differently charged human light-chain proteins by the rat kidney. Clin Sci. 74:639-644, 1988.
29. Baylis C. Effect of amino acid infusion as an index of renal vasodilatory capacity in pregnant rats. Am J Physiol. 254:F650-F656, 1988.
30. Baylis C, Fredericks M, Leypoldt K, Frigon R, Wilson C, Henderson L. Mechanisms of proteinuria in aging rats. Mech Age and Dev. 45:111-126, 1988.
31. Baylis C, Reese K, Wilson CB. Glomerular effects of pregnancy in a model of glomerulonephritis (GN) in the rat. Am J Kidney Dis. 14:452-460, 1989.
32. Baylis C. Gentamicin-induced glomerulotoxicity in the pregnant rat. Am J Kidney Dis. 13:108-113, 1989.
33. Munger K, Mitchell M, Baylis C. Differences between the sexes and the effects of surgery and anesthesia on the urinary excretion rate of eicosinoids in the rat. Prostaglandins. 37:379-388, 1989.
34. Baylis C, Wilson CB. Sex and the single kidney. Am J Kidney Dis. 13:290-298, 1989.
35. Baylis C. Immediate and long term renal effects of pregnancy in the spontaneously hypertensive rat (SHR). (F Series). Am J Physiol. 257:F1140-F1145, 1989.
36. Reckelhoff JR, Samsell L, Baylis C. Failure to duplicate the glomerular hemodynamic changes of pregnancy by an acute, moderate plasma volume expansion. Clinical and Experimental Hypertension-Part B. Hypertension in Pregnancy. B8:533-549, 1989.
37. DePriest D, Zimmerman C, Baylis C. Renal actions of administered atrial natriuretic peptide (ANP) in the conscious, aging rat. Life Sciences. 46:785-792, 1990.
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39. Baylis C, Brango C, Engels K. Renal effects of moderate hemorrhage in the pregnant rat. Am J Physiol. 259:F945-F949, 1990.
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41. Baylis C, Harton P, Engels K. Endothelial derived relaxing factor (EDRF) controls renal hemodynamics in the normal rat kidney. JASN. 1:875-881, 1990
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86. Baylis, C, Harvey J, Santmyire BR, Engels K. Pressor and renal vasoconstrictor responses to acute systemic NO synthesis inhibition are independent of the sympathetic nervous system and angiotensin II. JPET 288:693-698, 1999.
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50. Smith CA, Waters C, Tain Y-L, Baylis C, Alway SE, Stauber WT. Nitric oxide synthase in skeletal muscle repair following strain injury. J Am Coll Sports Med, in press.
51. J.V.Boykin, C. Baylis, D.Yager, I.K.Cohen, V.Sommer, L.Shawler, M.Watkins, J. Young, M. Crossland. VENOUS ULCER HEALING PREDICTED BY URINE NITRATE ASSAY: A RETROSPECTIVE STUDY. Wound Repair and Regen 12: A32, 2004
52. J.V. Boykin, C.Baylis, V. Sommer, L.Shawler, M. Watkins, J. Young, S. Louissaint, M. Crossland. HBO MEDIATES INCREASED NITRIC OXIDE PRODUCTION ASSOCIATED WITH WOUND HEALING. Wound Repair and Regen 12: A15, 2004.
53.

CURRENT FUNDING AND RESEARCH PROJECTS

NIH RO1 DK 45517: PI. $154,000/yr (direct) 1992-2004
"Endothelial Derived Relaxing Factor, EDRF and the Kidney" Agency: National Institute of Diabetes and Digestive and kidney Diseases.
Major goals; to investigate the physiologic control of glomerular hemodynamics by endogenous nitric oxide and interactions between NO and other vasoactive control systems. Also, to investigate various aspects of the systemic and renal responses to chronic NO synthesis inhibition.

NIH R01 DK 56843: PI. $154,000/yr (direct) 2001-2005
"Nitric oxide in chronic renal disease" Agency: National Institute of Diabetes and Digestive and kidney Diseases.
Major goal; to use a number of animal models of chronic progressive renal disease and detemine the contribution to progression played by NO deficiency that occurs secondary to loss of renal function.

Biopure Corp. Contract. PI. Total $36,379 (direct) 2002-2004
"To investigate effects of HBOC-201 blood substitute on renal function in a rat model of chronic renal disease". Agency: Biopure Corp. Studies requested by the FDA to assess the safety of repeated infusions of blood substitute, on renal function in rats with 5/6 reduction of renal mass.

NIH R01 NIDDK/NICHD. $250,000/yr direct 2004 - 2009
"IMCD phosphodiesterase in pregnancy; role in ECFVE " Agency: NICHD.
Major Goal: to investigate the role of increased PDE5 activity in the inner medulla in the plasma volume expansion of normal rat pregnancy.

Updated 7/25/2022

CURRICULUM VITAE

Matthew Alan Boegehold

Contact Information: Augusta University/University of Georgia Medical Partnership
1425 Prince Avenue
Athens, GA 30602
Phone: 706-713-2679 email: mboegehold@uga.edu

Present Positions: Basic Sciences Chair
Augusta University/University of Georgia Medical Partnership

Professor, Department of Physiology & Pharmacology
University of Georgia College of Veterinary Medicine

Professor (Adjunct), Department of Physiology
Medical College of Georgia at Augusta University

Education

University of Arizona, Tucson, AZ	Ph.D. (Physiology)	1986
University of Michigan, Ann Arbor, MI	B.S. (Biology)	1980

Career History

AU/UGA Medical Partnership	Basic Sciences Chair	2014-Present
	Campus Assoc. Dean for Curriculum (Interim)	2016- 2017
University of Georgia College of Veterinary Medicine		
	Professor of Physiology & Pharmacology	2014-Present
Medical College of Georgia at Augusta University		
	Professor of Physiology (adjunct)	2014-Present
West Virginia University Health Sciences Office of Research and Graduate Education		
Director of Graduate Recruiting and Program Development		2012-2013
West Virginia University Center for Cardiovascular and Respiratory Sciences		
Founding Director		2003-2012
West Virginia University School of Medicine		
Dept. of Physiology	Professor	2000-2013
	Vice Chair for Research	2001-2012
	Associate Professor	1994-2000
	Assistant Professor	1990-1994
Dept. of Medicine	Assistant Professor	1990-1992
Depts. of Medicine, Physiology	Research Assistant Professor	1988-1990

Career History (cont.)

Indiana University School of Medicine		
Dept. of Physiology & Biophysics	Postdoctoral Fellow	1986-1988
University of Arizona College of Medicine		
Dept. of Physiology	Graduate Associate in Teaching	1985-1986
	NIH Predoctoral Trainee	1980-1985

Research Interests

Endothelium-dependent regulation of vascular tone
Microvascular alterations and local blood flow control in hypertension
Reactive oxygen species and microvascular dysfunction
Growth-dependent changes in microvascular control

Honors and Awards

Medical College of Georgia Exemplary Teaching Award, 2020

Medical College of Georgia Exemplary Teaching Award, 2019

Medical College of Georgia Exemplary Teaching Award, 2018

Medical College of Georgia Exemplary Teaching Award, 2017

Elected Councilor, Cardiovascular Toxicology Specialty Section, Society of Toxicology, 2012

Elected President, Microcirculatory Society, 2011

Elected Councilor, Microcirculatory Society, 2001

Elected Fellow, Cardiovascular Section, American Physiological Society, 2001

Dean's Award for Excellence in Research, West Virginia University School of Medicine, 2000

International Union for Physiological Sciences Travel Award, XXXIII IUPS Congress, St. Petersburg, Russia, 1997

Outstanding Young Investigator Travel Award, Microcirculatory Society, 1994
(To visit and develop scientific collaborations with various European laboratories)

International Union for Physiological Sciences Travel Award, XXXII IUPS Congress, Glasgow, Scotland, 1993

Young Investigator Award, Second International Symposium on Endothelium-Derived Vasoactive Factors. Basel, Switz., 1992

Elected Fellow, American Heart Association Council for High Blood Pressure Research, 1991

NIH postdoctoral fellowship, Vascular Biology Training Grant, Indiana Univ. School of Medicine, 1986

First place in Health Sciences, University of Arizona Graduate Student Research Symposium, 1984

NIH predoctoral traineeship, Dept. of Physiology, University of Arizona College of Medicine, 1980-1985

Past Research Support

As Principal Investigator:

"Effect of Nanoparticle Exposure on Cardiovascular Adaptations in Pregnancy" 2012-2013
West Virginia University Research Fund Development Grant
Direct costs: $25,000

"Microvascular Health and Nanoparticle Exposure" 2009–2013
1RC1ES018274 (Challenge Grant)
National Institutes of Health/NIEHS (Co-P.I. with Timothy Nurkiewicz)
Direct Costs: $714,334

"Effect of Juvenile Growth on Endothelium-Dependent Control 2009 –2011
of Microvascular Tone", #09GRNT2250298,
American Heart Association, Great Rivers Affiliate
Direct costs: $120,000

"Dietary Salt and Microvascular Superoxide Production" 2007-2010
0755264B, American Heart Association, Great Rivers Affiliate
Direct costs: $110,000

"Dietary Salt and the Microvascular Endothelium" 2006-2008
Bridge Grant, West Virginia University Health Sciences Center
Direct costs: $63,600

"Dietary Salt and the Microvascular Endothelium" 1990-2006
#R01 HL44012, National Institutes of Health/NHLBI
1990-1995 direct costs: $342,429
1996-2000 direct costs: $377,093.
2000-2006 direct costs: $875,000.

"Functional Changes in the Microvascular Endothelium during Juvenile Growth" 2001-2004
#0150199N, American Heart Assn., National Center
Direct costs: $195,000.

"Endothelium-Dependent Modulation of Microvascular Adrenergic Tone: 1998-2001
Signals and Mechanisms", #9750514N, American Heart Assn., National Center
Direct costs: $138,961.

"Hemodynamic Shear and the Microvascular Endothelium" 1995-1999
#R01-HL52019, National Institutes of Health/NHLBI
Direct costs: $291,118.

"Endothelium-Dependent Control of the Resistance Vasculature: 1995-1997
Changes during Juvenile Maturation", #9507701S,
American Heart Assn., West Virginia Affiliate

"Influence of Endothelial Factors on Microvascular Tone 1992-1995
and Blood Flow in Salt-Induced Hypertension"
#9207877S, American Heart Assn., West Virginia Affiliate

Past Research Support (cont.)

As Principal Investigator, cont.:

"Endothelium-Dependent Responses of Microvessels in Rats with Salt-Induced Hypertension", #90068550, American Heart Assn., West Virginia Affiliate — 1990-1991

"Microvascular Alterations in Dahl-S Rats with NaCl-Induced Hypertension", #89049860, American Heart Assn., West Virginia Affiliate — 1989-1990

"Angiotensin and Cerebral Vascular Adaptation to Hypertension", Postdoctoral Fellowship, #87091510, American Heart Assn., Indiana Affiliate. — 1987-1988

"Exercise Hyperemia Control in Hypertension", Postdoctoral Fellowship #86087320, American Heart Assn., Indiana Affiliate. — 1986-1987

As Co-Investigator:

"Smad2 in Vascular Smooth Muscle Homeostasis" — 2016-2020
R01, National Institutes of Health/NHLBI
(P.I.: Shiyou Chen)
Direct Costs: $1,303,992

"Nitric Oxide and Chronic Renal Disease" — 2001-2005
R01 DK/HL 56843, National Institutes of Health
(P.I.: Christine Baylis)
Direct costs: $630,000

"Endothelial Transduction of Shear Stress" — 2001-2004
F-32 HL67562, National Institutes of Health/NHLBI
(P.I.: Timothy Nurkiewicz)
Direct costs: $117,024

"Cellular Control of Vascular Tone/Growth/Renal Function" — 1996-1999
Beatrice P. Madera Medical Research Grant
West Virginia University School of Medicine. (P.I.: Christine Baylis)
Direct costs: $94,557.

As Mentor/Advisor:

"Research Training in Cardiovascular and Pulmonary Diseases" — 2008-2013
T32 HL90610, National Institutes of Health/NHLBI
(P.I.: S. Jamal Mustafa)

Teaching Activities

AU/UGA Medical Partnership
High fidelity simulation sessions
First- and second-year medical students 2020-

Module Co-lead, First Year Renal-Cardiopulmonary Module 2020-

MEDI5156, 5161, 5168, 5179 and 5252-ATH (Small Group, Large Group Sessions)
First- and second-year medical students 2014-

University of Georgia
VPHY 8010 (Mammalian Cellular Physiology)
UGA graduate students. Lecture and discussion 2017-

VPHY 8000 (Cardiovascular Physiology)
UGA graduate students. Lecture and discussion 2016-

Member, University of Georgia Graduate Faculty 2014-

Service on Dissertation/Thesis Advisory Committees, University of Georgia
Chenxiao Li, Integrative Physiology and Pharmacology, PhD awarded 2021

West Virginia University
PCOL 743 (Pharmacology 1)
Pharm. D. students, biomedical doctoral students
Topic: Renin-angiotensin system, hypertension 2013

Problem-Based Learning. Facilitator
First-year medical students 2013

BMS 706 (Cellular Methods)
20-25 first year biomedical doctoral students. Facilitator. 2013

BIOL 327 (Professional Development)
80 undergraduate Biology majors. Lecture 2013

CCMD 793W (Health Disparities Journal Club)
Masters and doctoral students
Topic: Epidemiology of cardiovascular disease. Facilitator 2012

PSIO 793B (Summer Medical Physiology, On-line)
Peripheral circulation, local blood flow control 2011-2013

Teaching Activities, West Virginia University (cont.)

CCMD 793A (Cardiovascular and Respiratory Biology) (Course Coordinator)
5-7 first year biomedical doctoral students
Cardiovascular Biology, Respiratory Control. Lectures, Small group discussions. 2004-2013

CCMD 789 (Discussions in Scientific Integrity)
20-25 first year biomedical doctoral students
Topic: Conflict of Interest. Small group discussion. 2004-2013

Physiol. 793 (Experimental Basis of Physiology and Pharmacology)
Physiology and Pharmacology graduate students
Cardiovascular Physiology. Small group discussions. 2003

Physiol. 751 (Graduate Physiology and Pharmacology)
Basic sciences graduate students
Cardiovascular Physiology. Lectures. 2003

Ex. Physiol. 791 (Advanced Study in Exercise Physiology)
Exercise Physiology graduate students
Microvascular Regulation. Tutorial. 2002-2004

CCMD 730 (Human Function) 1998-2001,
140 medical and biomedical doctoral students 2004-2006,
Peripheral circulation, local blood flow control. Lectures, small group conferences. 2008-2013

Physiol. 350 (Graduate Physiology)
Physiology and other basic science graduate students
Cardiovascular Physiology. Tutorials, small group conferences. 1996, 1997

Physiol. 342 (Physiological Methods)
Physiology graduate students
Course Coordinator 1992-1997

Physiol. 344 (Medical Physiology)
100 medical students
Autonomic Nervous System, Hypertension. Lectures. 1992-1996

Physiol. 491 (Advanced Physiology)
(Course Coordinator)
Physiology graduate students
Microcirculation, Endothelial cell biology. Lectures, tutorials. 1990-2006

Physiol. 343 (Fundamentals of Physiology)
30-40 dental students
Cardiovascular Physiology. Lectures. 1989-2000

Physiol. 141 (Human Physiology)
150 undergraduate nursing and allied health students
Cardiovascular System. Lectures. 1989

Teaching Activities, West Virginia University (cont.)

Core faculty member, Ph.D. training program in Exercise Physiology	1999-2008
Member, School of Medicine Graduate Faculty	1991-2013

Service on Dissertation/Thesis Advisory Committees

Doctoral

	Year of Degree
Valerie Minarchick, Cellular & Integrative Physiology (Chair)	2015
Sulei Xu, Cellular & Integrative Physiology	2014
Swati Kunduri, Basic Pharmaceutical Sciences	2012
Himani Vejandla, Cellular & Integrative Physiology	2012
Xueping Zhou, Cellular & Integrative Physiology	2012
Maryam Sharifi, Pharmaceutical and Pharmacological Sciences	2011
Amy Sindler, Cellular & Integrative Physiology	2009
Lori Kang, Cellular & Integrative Physiology	2009
Dovenia Ponnoth, Pharmaceutical and Pharmacological Sciences	2008
Mei Xu, Cellular & Integrative Physiology	2008
Julie Balch Somora, Cellular & Integrative Physiology (Chair)	2007
Andrew Beardsley, Cellular & Integrative Physiology	2006
Wentao Zhang, Cellular & Integrative Physiology	2006
Paul Marvar, Cellular & Integrative Physiology (Chair)	2006
Parco Siu, Exercise Physiology	2005
Aaron Erdely, Physiology	2002
Francis A. Sylvester, Physiology (Medical College of Wisconsin)	2001
Bryan Sauls, Physiology (Chair)	2001
Deborah Lenda, Physiology (Chair)	2001
Timothy Nurkiewicz, Physiology (Chair)	1999
Shen Xiao, Physiology	1999
Beth Santmyire, Physiology	1999
Peter Wearden, Pharmacology and Toxicology	1999
Zhongling Zheng, Physiology	1998
J. Russell Linderman, Physiology (Chair)	1997
Rolando Ramirez, Physiology	1997
Geoffrey Nase, Physiology (Chair)	1997
Scott Caveney, Pharmacology and Toxicology	1996
Daniel Borsch, Anatomy	1995
Changbin Qiu, Physiology	1995
Shyama Masilamani, Physiology	1994
Aihua Deng, Physiology	1993

Masters

Megan James, Cellular & Integrative Physiology	2012
Joan Bloch, Physiology	1996
Zhongling Zheng, Physiology	1995
John Rafi, Physiology (Chair)	1992

Teaching Activities, West Virginia University (cont.)

Graduate Students Trained:

1. Julie Balch Samora (PhD, Cellular & Integrative Physiology, 2007; MD, West Virginia University)
   Dissertation: "Factors Regulating Arteriolar Tone during Microvascular Growth"
   Current Position: Orthopedic Specialist, Nationwide Children's Hospital, Columbus OH

2. Paul Marvar (PhD, Cellular & Integrative Physiology, 2006).
   Dissertation: "Effect of High Salt Intake on Arteriolar Responses to Metabolic Stimuli"
   Current Position: Associate Professor, Department of Pharmacology and Physiology, George Washington University School of Medicine and Health Sciences

3. Bryan A. Sauls (PhD, Physiology, 2001; MD, Marshall University School of Medicine).
   Dissertation: "Integrated Modulation of Sympathetic Tone in the Microcirculation by Oxygen, Adenosine and Nitric Oxide"
   Current Position: Internal Medicine Specialist, COPC Internal Medicine Group, Westerville, OH

4. Deborah M. Lenda (PhD, Physiology, 2001).
   Dissertation: "Effects of a High Salt Diet on the Microcirculation of Normotensive Rats: The Role of Reactive Oxygen Species"
   Current Position: Senior Research Scientist, Wyeth Pharmaceuticals, Boston, MA

5. Timothy R. Nurkiewicz (PhD, Physiology, 1999).
   Dissertation: "Effects of Hypertension and Dietary Salt on Myogenic Activity in the Microcirculation: Possible Roles of Nitric Oxide and Angiotensin II "
   Current Position: Professor and Chair, Dept. of Physiology and Pharmacology, West Virginia University School of Medicine

6. J. Russell Linderman (PhD, Physiology, 1997).
   Dissertation: "Changes in Arteriolar Structure and Function during Rapid Juvenile Growth"
   Current Position: Lieutenant, US Navy Aerospace Physiology Program, Jacksonville, FL

7. Geoffrey P. Nase (PhD, Physiology, 1997).
   Dissertation: "Endothelium-Derived Nitric Oxide Attenuates Sympathetic Neurogenic Constriction in the Intestinal Microvasculature of the Rat"
   Current Position: Director of Clinical Research, Iomed, Inc., Salt Lake City, Utah

8. John Rafi (MS, Physiology, 1992).
   Thesis: "Microvascular Responses to Oxygen and Muscle Contraction in Rats with Salt-Induced Hypertension"
   Current Position: Clinical Pharmacist Medication Management Specialist, University of New Mexico College of Pharmacy, Albuquerque NM

Postdoctoral Fellows trained

Lori Kang, Ph.D.	2009-2011
Timothy R. Nurkiewicz, Ph.D.	2001-2002

Research Faculty mentoring

Timothy R. Nurkiewicz, Ph.D., Res. Asst. Professor	2002-2006
Leah W. Hammer, Ph.D., Res. Asst. Professor	2002-2006

Teaching Activities (cont.)

Indiana University
F305 (Human Physiology)
30 undergraduate physical therapy students
Thermoregulation, Exercise. Lectures. 1986, 1987

University of Arizona
Gen. Biol. 464 (Human Physiology)
150 junior, senior undergraduates
Cardiovascular System. Lectures. 1983

Physiol. 601 (Medical Physiology)
100 medical, graduate students
Lab Instrumentation, Cardiovascular System.
Laboratories, small group conferences. 1982-1986

Physiol. 418, 419 (Physiology for Engineers)
20 undergraduates
Cardiovascular System. Lectures, laboratories. 1982, 1983

Service, Institutional

AU/UGA Medical Partnership

Clinician Educator Search Committee (Chair)	2022-
Clinical Sciences Chair Search Committee	2022-
Simulation and Ultrasound Oversight Team	2019-2021
Expansion Faculty Search Committee (Co-Chair)	2018-2022
Russell Hall Renovation Oversight Committee	2018-2019
Working group, Russell Hall Renovation feasibility study	2018
Coordinator, "Mechanisms of Disease" seminar series	2017-
Faculty Search Committee (Chair)	2017-2018
Class Expansion Task Force	2017
Faculty Search Committee (Chair)	2014-2016
Gold Humanism Honor Society Selection Committee	2014-

University of Georgia

UGA Elements Administrative Liaison	2015-
President's Interdisciplinary Seed Grant review group	2019, 2021
Institutional Review Board (IRB), alternate member	2016-2019
Faculty Promotion and Tenure Process Review Committee	2014-2015
Research Communications Group	2014-2016
STEM Education Research Planning Group	2014-2015
Clinical & Translational Research Unit Working Group	2014-2015

Augusta University (Medical College of Georgia)

Faculty Appointments, Development, Promotions, and Tenure Committee	2020-
Student Academic Promotions and Professionalism Conduct Committee	2016-2021
Class of 2021 Student Promotions Subcommittee	2020-2021
Scientific Foundations of Medicine Working Group	2019-2020
Class of 2020 Student Promotions Subcommittee	2018-2020
Phase 3 Curriculum Committee	2016-2017
Phase 1/2 Curriculum Committee	2016-2017
Curriculum Oversight Committee	2016-2017
Clinical and Translational Sciences Advisory Committee	2015-2016
LCME Executive Committee	2014-2015
LCME Institutional Self-Study Committee 1	2014-2015
Dean's Cabinet	2014-

Augusta University/University of Georgia

Search Committee, Medical Partnership Assoc. Dean for Curriculum (Chair)	2016-2017
Planning Committee, Southern Translational Education and Research Conference	2014-2016
Chair	2015-2016
Search Committee, Medical Partnership Campus Dean	2015

Service, Institutional (cont.)

West Virginia University

University

STEM Fellowship Advisory Committee	2013
University Graduate Council	2012-2014
Faculty Hearing Panel	1995-1996
Animal Care and Use Committee	1989-1994

Health Sciences Center

Research Advisory Council, WVU School of Pharmacy	2010-2012
Health Sciences Research Subcommittee	2010
First Year Biomedical Curriculum Committee	2010
Translational Research Investment Committee	2008
Steering Committee for New Research Building	2005-2007
Scientific Advisory Board	2004-2011
Space Committee	2003-2007
Health Sciences Graduate Council	1999-2003, 2013

School of Medicine

Internal Advisory Committee, Cardiovascular and Pulmonary Diseases Training Grant	2009-2013
Search Committee for Chair, Dept. of Biochemistry	2007- 2008
Search Committee for Director of Stroke Research, Dept. of Neurology	2007-2008
Search Committee, Diabetes and Obesity Center Director (Chair)	2005-2006
Search Committee for Research Center Directors	2004
MD/PhD Program Oversight Committee	2002-2007
Research Development and Bridge Grant Review Committee	2003
School of Medicine Faculty Promotion and Tenure Committee	1998-2004 2009-2013
Basic Sciences Promotion and Tenure Subcommittee (Chair)	2002-2004
Task Force on SOM Doctoral Programs Structure Curriculum subcommittee, Recruitment subcommittee, Research Focus Areas subcommittee	2002-2004
Search Committee for Assistant Dean of Graduate Studies	2002-2003
Planning Committee for Integrative Pharmacology Graduate Program	2001
Planning Committee for First Year Graduate Student Facility	2001
Strategic Planning Advisory Board for Research	2000-2001
Task Force on Basic Sciences Reorganization	2000
Search Committee for Chair of Pharmacology/Toxicology	2000
Basic Sciences Salary Task Force	1999-2000
Graduate Programs Open House Committee	1995-1998
School of Medicine Graduate Council (Chair, 1999-2003)	1994-2003
Cardiovascular/Renal Interdisciplinary Research Planning Group	1994-2000
Basic Sciences Cell Biology Task Force	1994
Co-director, Minority Undergraduate Summer Research Program	1992-1996
Planning Committee for NIH Construction/Renovation Grant	1992
Cardiovascular/Renal Research Planning Committee	1992
Advisor, NIH High School Student Research Apprentice Program	1992

Service, Institutional (cont.)

West Virginia University, cont.

Departmental

Seminar Series Coordinator, Dept. of Physiology	2001-2006
Space Allocation Committee, Dept. of Physiology	2002-2004
Search Committee for Assistant Professor in Physiology (Chair)	1999-2000
Budget Committee, Dept. of Physiology	1996-1998
Search Committee for Assistant Professor in Physiology	1995-1996
Search Committee for Research Assistant Professor in Physiology	1995
Graduate Studies Committee, Dept. of Physiology (Chair, 1992-1998)	1991-2003
Grand Rounds Committee, Dept. of Medicine	1990-1992
Research Committee, Dept. of Medicine	1989-1993
Research Conference Coordinator, Dept. of Medicine	1989-1992

University of Arizona

Graduate Admissions Committee, Department of Physiology	1984-1985

Service, Professional Societies

American Heart Association, West Virginia/Ohio Valley Affiliate

Research Committee	2000-2004
Research Policy and Allocations Committee	1993-1996

American Physiological Society, Cardiovascular Section

Nominating Committee	2009-2010

Microcirculatory Society

Awards Committee (Chair)	2015-2018
Immediate Past-President	2012-2013
President	2011-2012
Long-Range Planning Committee	2010-2015
Chair	2010-2011
Liaison Committee	2011-2015
Chair	2011-2012
Planning Committee, joint conference of MCS and British Microcirculatory Society (Co-Chair)	2010-2012
Long Range Planning Committee (Chair)	2010-2011
President-Elect	2010-2011
Publications Committee (Chair)	2005-2008
Planning Committee, joint conference of MCS and British Microcirculatory Society	2003-2005
Development Committee	2002-2004
Executive Council	2001-2004, 2010-2013
Finance Committee	2000-2003
Awards Committee	1995-1998
Chair	1997-1998

Service, Professional Societies (cont.)

European Society for Microcirculation
Joint ESM/EVBO International Scientific Program Committee 2011-2013

Society of Toxicology
Executive Council, Cardiovascular Toxicology Specialty Section 2012-2014

Other Professional Activities

Current Society Memberships
American Physiological Society (1990-present)

APS Cardiovascular Section (1990-present, elected Fellow in 2001)

Association of Chairs of Departments of Physiology (2014-present)

International Association of Medical Science Educators (2014-present)

Microcirculatory Society (1989-present)

Membership on Study Sections and Review Panels
American Heart Assn., Vascular Biology, Blood Pressure/Regulation 2 Study Group, 2008-2012

Ohio University Research Committee grant program, 2002 (ad hoc)

National Institutes of Health, Cardiovascular and Renal (CVB) study section, 2002 (ad hoc)

Medical Research Grant Program, Jewish Hospital, Louisville, KY, 2000 (ad hoc)

American Heart Association, Great America Research Consortium
(Cellular Cardiovascular Physiology & Pharmacology Study Group), 2000 (ad hoc)

National Institutes of Health, Program Project review panel, National Heart, Lung and Blood Institute, 1997

American Heart Association, National Center, Affiliate Study Group D(Brain and Cardiovascular Regulation), 1995-1997

Organization of Scientific Meetings
Organizer and chairman, symposium on "Cation Channels and Vascular Control: ENaC, ASIC and TRPV proteins", Microcirculatory Society Annual Meeting, 2012.

Co-organizer and chairman, symposium on “Inflammatory Aspects of Hypertension: Insights from the Microcirculation”, XXXV International Congress of Physiological Sciences, 2005.

Organizer and chairman, Featured Topic session, “Evolution of Vascular Regulation from the Neonate to the Aging Adult: Mechanisms and Functional Consequences”, Experimental Biology 2003.

Co-organizer and chairman, symposium on “Apoptosis and Organ Injury Mechanisms in Hypertension”, Experimental Biology 2002.

Other Professional Activities (cont.)

Organization of Scientific Meetings, cont.
Co-chair, session on "Hypertension", 20th European Conference on Microcirculation, Paris, France, 1998.

Organizer and chairman, symposium on "Hypertension and Microvascular Control", Internet World Congress on Biomedical Sciences, 1998.

Editorial Appointments and Activities
Editorial Board, "Frontiers in Vascular Physiology", 2013-2017
Editorial Board, "Microcirculation", 2002- 2014
Ad Hoc Manuscript Review for Professional Journals:
American Journal of Physiology: Heart and Circulatory Physiology
American Journal of Physiology: Regulatory, Integrative and Comparative Physiology
Cardiovascular Research
FASEB Journal
Experimental Physiology
Gut
Hypertension
Journal of Pharmacology and Experimental Therapeutics
Journal of Physiology
Journal of Vascular Research
Life Sciences
Microcirculation
Microvascular Research

Invited Presentations

Seminars
"Reduced Microvascular Nitric Oxide Following High Salt Intake: Mechanisms and Functional Consequences". Department of Physiology, Medical College of Georgia at Georgia Regents University, October 2014.

"Regulating Microvascular Tone during Rapid Juvenile Growth: Transitioning to an Adult Phenotype". Department of Cellular Biology & Anatomy, Medical College of Georgia at Georgia Regents University, October 2014.

"Graduate Education for Aspiring Biomedical Scientists"
Division of Natural Sciences, Concord University, Athens WV, February 2013.
Department of Biology, Washington and Jefferson College, Washington PA, March 2013.
Division of Mathematics and sciences, Walsh University, North Canton, OH, March 2013.
Department of Biology, University of Akron, March 2013.
Dept. of Biological and Environmental Sciences, California Univ. of Pennsylvania, April 2013.

"Regulating Microvascular Tone during Rapid Growth: Stops along the Road to an Adult Phenotype". Department of Physiology and Pharmacology, University of Georgia College of Veterinary Medicine, February 2013.

Seminars (cont.)

"A Single Basic Science Department within the Context of a Partnership Campus". Department of Basic Sciences, Georgia Health Sciences University-University of Georgia Medical Education Partnership, June 2012.

“Dietary Salt and Microvascular Function: Conventional Wisdom Reconsidered”. Department of Human Science, Georgetown University School of Nursing and Health Studies, April 2009.

“Effect of Juvenile Growth on the Regulation of Microvascular Tone and Blood Flow”. Department of Pharmacology, Physiology and Toxicology, Marshall University School of Medicine, February 2009.

“Microvascular Dysfunction Associated with High Salt Intake and Hypertension: A Role for Reactive Oxygen Species?”. Department of Internal Medicine, Division of Nephrology, Virginia Commonwealth University School of Medicine, December 2007.

“Dietary Salt and Microvascular Function: Current Concepts and Unsolved Mysteries”. College of Natural and Health Sciences, University of Northern Colorado., February 2007.

“Dietary Salt and Microvascular Function”. Herbert H. and Grace A. Dow College of Health Professions, Central Michigan University, November 2006.

“Dietary Salt and Microvascular Function: Current Concepts and Unsolved Mysteries”. Department of Systems Biology and Translational Medicine, Texas A&M University School of Medicine, November 2006.

“Decreased Microvascular Nitric Oxide Activity following High Salt Intake: A Role for Reactive Oxygen Species?”. Department of Physiology and Biophysics, University of Mississippi Medical Center, March 2005.

“Sympathetic Control of Arteriolar Tone: Modulation by Nitric Oxide and Local Metabolic Factors”. Department of Bioengineering, University of California, San Diego, January 2004.

“Suppression of Microvascular Nitric Oxide Activity by Dietary Salt: A Role for Reactive Oxygen Species?”. Department of Cellular and Integrative Physiology, Indiana University School of Medicine, August 2003.

“Reduced Microvascular Nitric Oxide after High Salt Intake: A Role for Reactive Oxygen Species”. Department of Cell Biology and Physiology, University of New Mexico School of Medicine, March 2003.

“Nitric Oxide-Dependent Control of the Microcirculation: Modulation by Dietary Salt and Reactive Oxygen Species”. Department of Physiology, Marshall University School of Medicine, March 2002.

“The Microcirculation: It’s the Little Things that Count”. West Virginia University School of Medicine, September 2001.

“Suppression of Microvascular Nitric Oxide Activity by Dietary Salt: A Role for Reactive Oxygen Species?”. Department of Physiology, Wayne State University School of Medicine, May, 2000.

Seminars (cont.)

“Nitric Oxide-Dependent Regulation of Arteriolar Tone: Suppression by Dietary Salt”. Department of Medical Physiology, Texas A&M University School of Medicine, December 1999.

“Suppression of Microvascular Nitric Oxide Activity by Dietary Salt: Mechanisms and Functional Consequences”. Departments of Biological Sciences and Biomedical Sciences, Ohio University College of Osteopathic Medicine, September 1999.

“Dietary Salt and Microvascular Function”. Department of Medicine, Cardiology Section, West Virginia University School of Medicine, August 1999.

“Shear Stress, Nitric Oxide and Arteriolar Tone: A Changing Relationship during Juvenile Growth”. Department of Physiology and Biophysics, University of Louisville School of Medicine, March 1999.

“Influence of Nitric Oxide on Arteriolar Tone: Changes Associated with Rapid Juvenile Growth”. Department of Physiology and Biophysics, University of Louisville School of Medicine, July 1998.

“Endothelium-Dependent Modulation of Sympathetic Constriction in the Intestinal Microvasculature”. Department of Physiology and Biophysics, University of Louisville School of Medicine, October 1997.

"High Dietary Salt Intake and the Arteriolar Endothelium: In-vivo Studies". Department of Research, Basel University Hospitals, Basel, Switzerland, September 1994.

"The Effect of High Salt Intake and Hypertension on Arteriolar Function". Department of Physiology, Cardiovascular Research Institute Maastricht, University of Limburg, Maastricht, The Netherlands, September 1994.

"Insulin Resistance and Blood Pressure". Department of Physiology, Medical College of Wisconsin, Milwaukee, WI, August 1992.

"Microvascular Alterations Associated with Salt-Induced Hypertension". Department of Physiology and Cell Biology, Albany Medical College, Albany, NY, March 1992.

“The Effect of Contraction on Arteriolar Diameter and Tissue Oxygen in Skeletal Muscle of Spontaneously Hypertensive Rats”. Department of Physiology, West Virginia University School of Medicine, Morgantown, WV, January 1988.

"Interaction of Neural and Metabolic Influences in Blood Flow Control". Biomedical Research Group, E.R. Squibb and Sons, New Brunswick, NJ, January 1988.

"The Role of Oxygen in Arteriolar Escape from Sympathetic Nerve Stimulation". Kresge Hearing Research Institute, University of Michigan, Ann Arbor, MI. August 1987.

Symposium Talks

"Pregnancy amplifies the deleterious effects of nanoparticle exposure on microvascular nitric oxide: a role for oxidant stress". Symposium: Endothelial Cell Biology in Health and Disease. Joint meeting of the Microcirculatory Society and British Microcirculation Society, Oxford, England, 2012.

“Oxidant Stress and Vascular Dysfunction with Elevated Dietary Salt Intake in Normotensive Animals”. Symposium: Salt, Angiotensin II, Superoxide and Endothelial Function. Experimental Biology, Washington D.C., 2011.

"Growth-Related Changes in Epithelial Sodium Channel Regulation of Myogenic Tone in Skeletal Muscle Arterioles". Ninth World Congress for Microcirculation, Paris, France, 2010.

“Emergence of Hydrogen Peroxide as a Mediator of Arteriolar Tone during Postnatal Growth”. Symposium: Aging, Reactive Oxygen Species and Regulation of Arteriogenesis. Experimental Biology, New Orleans, LA, 2009.

“Microvascular Changes during Rapid Juvenile Growth”. Symposium: Evolution of Vascular Regulation from the Neonate to the Aging Adult: Mechanisms and Functional Consequences. Experimental Biology, San Diego, CA, 2003.

“Microvascular Oxidative Stress Induced by Dietary Salt Independent of Hypertension”. Symposium: Apoptosis and Organ Injury Mechanisms in Hypertension. Experimental Biology, New Orleans, LA, 2002.

“Sympathetic Control of Arteriolar Tone: Modulation by the Endothelium”. Annual Meeting of the Biomedical Engineering Society, Seattle, WA, 2000.

"Arteriolar Myogenic Activity in Hypertensive and Salt-Fed Rats: Modulation by Nitric Oxide". Sixth International Symposium on Resistance Arteries, Mol, Belgium, 1998.

“Mechanisms of Increased Arteriolar Network Resistance in Chronic Hypertension”. Symposium: Microvascular Networks. Satellite, Sixth World Congress for Microcirculation, Munich, Germany, 1996.

“Interactions between Neural and Metabolic Factors in the Control of Microcirculation”. American Heart Association Joint Sessions of Councils on Circulation and Basic Science, Keystone, CO, 1986.

External Evaluation for Promotion and Tenure

Rutgers University School of Pharmacy (July 2022)
West Virginia University School of Medicine (October 2021)
University of Texas, Arlington (June 2019)
University of Missouri-Columbia (August 2011; September 2011; June 2017)
Baylor University College of Medicine (February 2016)
Louisiana State University (September 2012)
Texas A&M University (July 2009; October 2012)
University of Louisville (March 2001; September 2009; April 2022)
Old Dominion University (November 2005)
Ohio University (December, 1999; September 2003)
Worcester Polytechnic Institute (July 2003)
University of Pittsburgh (April 2003)
Johns Hopkins University (January 2002)
Medical College of Wisconsin (March 1998)

Publications

A. Manuscripts Published in Refereed Journals

1. Tang J-M, Shi N, Dong K, Brown SA, Coleman AE, Boegehold MA, Chen S. Response gene to complement 32 maintains blood pressure homeostasis by regulating α-adrenergic receptor expression. Circulation Research 123: 1080-1090, 2018.

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B. Manuscripts Submitted for Publication

C. Book Chapters

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2. Nurkiewicz TR, Porter DW, Hubbs AF, Stone S, Moseley AM, Cumpston JL, Goodwill AG, Frisbee SJ, Perrotta PL, Brock RW, Frisbee JC, Boegehold MA, Frazer DG, Chen BT, Castranova V. Pulmonary Particulate Matter and Systemic Microvascular Dysfunction. Research Report 164. Health Effects Institute, Boston, MA, 2011.

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10. Kotchen, T.A., Halbritter, K. and M.A. Boegehold. Hypertension and the brain. In: Intracerebral Hematomas, ed: H. Kaufman. New York: Raven Press, 1991.

D. Abstracts and Short Communications

1. Bassett CN, Martin AT, Gibbs S, Boegehold MA, Gaines JK. Collaboration among basic science and clinician educators in creating and implementing high fidelity simulation sessions in an integrated preclinical medical education curriculum. Medical Science Educator 31(Suppl 1): S74, 2021.

2. Martin AT, Gibbs S, Bassett CN, Gaines JK, Boegehold MA. Using an escape room activity to orient learners to the simulated medical environment. Medical Science Educator 31(Suppl 1): S130, 2021.

3. Boegehold M, Nurkiewicz T, Masilamani S. Pulmonary nanoparticle exposure reduces nitric oxide bioavailability in extrapulmonary arterioles during pregnancy. Microcirculation, 2013.

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53. Boegehold, M. Howton, M., and K. Wix. Isolation and culture of endothelial cells from specific precapillary microvessels. J. Vasc. Res. 35 (Suppl. 2): 72, 1998.

54. Boegehold, M.A. and J.R. Linderman. Growth-related onset of local nitric oxide activity modulates the sympathetic control of arteriolar tone. The Physiologist 41(4): 268, 1998.

55. Boegehold, M.A. and T.R. Nurkiewicz. Effect of dietary salt on myogenic responsiveness of proximal arterioles and local nitric oxide in normotensive and hypertensive rats. J. Vasc. Res. 35 (Suppl. 3): 6, 1998.

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80. Boegehold, M.A. and T.A. Kotchen. Effect of dietary salt intake on the skeletal muscle microvasculature in Dahl salt-sensitive and salt-resistant rats. FASEB J. 4(4):A1247, 1990.

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84. Boegehold, M.A. and T.A. Kotchen. Characteristics of skeletal muscle arterioles in Dahl-S rats with NaCl-induced hypertension. FASEB J. 3(4):A1380, 1989.

85. Johnson, P.C., Boegehold, M.A., Dodd, L.R. and A. Toth. Distribution of metabolic control mechanisms in networks. Int. J. Microcirc. Clin. Exp. 8(suppl.1):S40, 1989.

86. Boegehold, M.A. and T.A. Kotchen. Effect of dietary NaCl on the microcirculation of Dahl salt-sensitive and salt-resistant rats. Clin. Res. 37(4):940A, 1989.

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88. Boegehold, M.A. and H.G. Bohlen. Arteriolar dilation during spinotrapezius muscle contraction in normal and spontaneously hypertensive rats. Fed. Proc. 46(4):1522, 1987.

89. Boegehold, M.A. and P.C. Johnson. Changes in periarteriolar and tissue PO_2 during sympathetic nerve stimulation in skeletal muscle. Fed. Proc. 45(4):1148, 1986.

90. Johnson, P.C. and M.A. Boegehold. The role of oxygen in arteriolar sympathetic escape. Blood Vessels 23(2):80, 1986.

91. Boegehold, M.A. and P.C. Johnson. Effect of increased ambient oxygen on sympathetic escape in skeletal muscle arterioles. Microvasc. Res. 29:208, 1985.

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93. Torres Filho, I.P., Boegehold, M., Cyrino, F.Z.G.A., Bouskela-Torres, E. and P.C. Johnson. Arteriolar and venular responses to hemorrhagic hypotension. Int. J. Microcirc. Clin. Exp. 3:376, 1984.

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Elizabeth Compton Bowdridge

64 Medical Center Drive
West Virginia University
Morgantown, WV 26506-9229 919-697-2940 ebowdrid@hsc.wvu.edu

EDUCATION

2007	B.S.	Animal Science Minor: Genetics	North Carolina State University, Raleigh, NC
2009	M.S.	Animal Science Physiology	North Carolina State University, Raleigh, NC
2014	PhD.	Reproductive Physiology	West Virginia University, Morgantown, WV

ACADEMIC & PROFESSIONAL APPOINTMENTS

2005-2007 **Entomology Lab Assistant**
North Carolina State University, Raleigh NC

2008-2009 **Graduate Teaching and Research Assistant**
North Carolina State University, Raleigh, NC

2011-2012 **Introduction to Biology Graduate Teaching Assistant**
Division of Biology; West Virginia University, Morgantown, WV

2011-2014 **Graduate Teaching and Research Assistant**
Division of Reproductive Physiology; West Virginia University, Morgantown, WV

2015-2017 **Postdoctoral Research Fellow**
Division of Animal and Nutritional Sciences, West Virginia University, Morgantown, WV 26505

2017-2019 **Postdoctoral Research Fellow**
Department of Physiology and Pharmacology, West Virginia University, Morgantown, WV 26505

2020-present **Research Assistant Professor**
Department of Physiology and Pharmacology, West Virginia University, Morgantown, WV 26505

SERVICE ON STUDENT COMMITTEES

Graduate Student Committees

Max Greisgraber	(Cellular & Integrated Physiology; 2019-present)
Eliana Aerts	(Cellular & Integrated Physiology; 2019-present; USDA Pre-doctoral Fellowship Mentoring Committee)
Rachael King	(Biochemistry; 2020-present)

Heather Connery (Cellular & Integrated Physiology; Co-Chair; 2021-present)

Undergraduates Mentored/Trained

Morgan Okumbo (Animal and Nutritional Sciences; 2018-2020)
Kallie Schafner (Chemistry; WVU RAP Program; 2019-present)
Alexandra Lusk (Exercise Physiology; Summer-Fall 2021)
Jessica Rossenburg (Animal and Nutritional Sciences; Spring 2022)
Allison Dunn (Pharmacy; WVU RAP Program; Spring 2022-present)

SERVICE AND ACTIVITIES

2021-current	Health Science Graduate Student Organization Faculty Advisor
2021-current	Allegheny Eerie Regional Chapter of the Society of Toxicology President
2022-2021	Allegheny Eerie Regional Chapter President Elect
2020-current	WVU Physiology and Pharmacology Outreach Chair
2019	Poster Session Chair- Reproductive Toxicology SOT Annual Meeting
2017-2019	WVU Health Sciences and Technology Academy Science Symposium Judge
2018-2019	Allegheny Erie Society of Toxicology Postdoctoral Representative
2020-2021	Cardiovascular Toxicology Specialty Section Junior Councilor
2021-present	Allegheny Eerie Society of Toxicology President
October 2017	Southeast Regional IDeA Conference Research Judge
2017-2019	Mylan Park Elementary School Career Day Invited Speaker
April 2016	East Fairmont Middle School Career Day Invited Speaker
2016-2017	West Virginia University Van Liere Research Day Undergraduate Research Judge
2012-2013	Animal and Nutritional Sciences Graduate Student Associate President

INVITED PRESENTATIONS and WORKSHOPS

1. Like mother like granddaughter: The effects of inhaled toxicants during gestation across generations. University of New Mexico Pharmaceutical Sciences Seminar Series. Albuquerque, NM 87131 (November 28th, 2022)
2. Like mother like granddaughter: The effects of inhaled nanoparticles during gestation across multiple generations. West Virginia University Animal Science Seminar Series. Morgantown, WV 26508 (September 15, 2022)
3. Maternal Engineered Nanomaterial Exposure During Gestation Affects Metabolic Parameters and Reproductive Outcomes in F1 and F2 Females. 34th Annual Allegheny Eerie

Society of Toxicology Early Investigator Talk. Morgantown, WV 26506 (June 1st, 2022).

4. Like mother like daughter: Maternal engineered nanomaterial inhalation during gestation leads to F1 offspring dysfunction. NIOSH PPRB Seminar Virtual Seminar Series. (July 14th, 2021).
5. Maternal exposure to engineered nanomaterial during gestation diminishes fertility in F1 females. (October, 2020) 34nd Annual Allegheny Eerie Society of Toxicology Virtual Meeting.
6. ENM Inhalation during Gestation Disrupts Plasma Estrogen and Vascular Kisspeptin Reactivity. (May 30, 2018) 32nd Annual Allegheny Eerie Society of Toxicology Meeting Morgantown, WV 26506.
7. Pulmonary Engineered Nanomaterial Exposure during Late Gestation Attenuates Plasma Estrogen (March 14, 2018) Society of Toxicology Annual Meeting San Antonio, TX 78296.
8. Systemic LPS Challenge during Early Pregnancy In Sheep Stimulates Expression of Pro-Inflammatory Genes in the Uterus. Endocrine Society Annual Meeting (March 31, 2017) Orlando, FL 32819.
8. Estrus synchronization and pregnancy detection. (January 30, 2016) Regional Goat and Sheep Producer Training Greensboro, NC.
9. The role of adenosine monophosphate activated protein kinase in luteal progesterone production. (June 18-22, 2015) SSR Annual Meeting San Juan, Puerto Rico.
10. Is AMPK required to mediate the steroidogenic affects of PGF2α in the bovine corpus luteum? (August 12-15, 2012) SSR Annual Meeting State College, PA 16802.
11. NCSynch: A protocol for ovulation synchronization and timed artificial insemination in goats. (July 10-14, 2011) ASAS/ADSA Annual Meeting New Orleans, LA 70130.

PROFESSIONAL JOURNAL ACTIVITES

Editorial Board

Domestic Animal Endocrinology	Editorial Board Member
Frontiers in Toxicology: Development and Reproductive Toxicology	Editorial Board Member Guest Associate Editor

Ad Hoc Reviewer

Inhalation Toxicology
Particle and Fibre Toxicology
Frontiers in Physiology: Vascular Physiology
Reproductive Toxicology
Cardiovascular Toxicology
Toxicological and Applied Pharmacology

PUBLICATIONS

1. **Bowdridge EC**, Thompson J, Bourque S and Stapleton P (2023) Editorial: Getting to the heart of developmental toxicities. *Front. Toxicol.* 5:1138470. doi: 10.3389/ftox.2023.1138470

2. **Bowdridge, E.C**., Garner, K.G., DeVallance, E., Griffith, J.A., Kelley, E.E., Nurkiewicz, T.R. 2022. Using the Isolated Rat Placenta to Assess Fetoplacental Hemodynamics. Front Tox. DOI: 10.3389/ftox.2022.814071

3. Griffith, J.A., Garner, K.G., **Bowdridge, E.C**., DeVallance, E., Schafner, K. J., Engels, K.J., Batchelor, T.P., Goldsmith, W.T., Wix, K., Hussain, S., Nurkiewicz, T.R. 2022. Nanomaterial Inhalation During Pregnancy Alters Systemic Vascular Function in a Cyclooxygenase Dependent Manner. Toxicol Sci. DOI: 10.1093/toxsci/kfac055

4. Trembley, J. H., So, S. W., Nixon, J. P., **Bowdridge, E. C**., Garner, K. L., Griffith, J., Engles, K. J., Batchelor, T. P., Goldsmith, W. T., Tomáška, J. M., Hussain, S., Nurkiewicz, T. R., & Butterick, T. A. (2022). Whole-body inhalation of nano-sized carbon black: a surrogate model of military burn pit exposure. *BMC research notes*, *15*(1), 275. DOI: 10.1186/s13104-022-06165-2

5. **Bowdridge, E.C**., DeVallance, E., Garner, K.G., Griffith, J.A., Schafner, K. J,. Seman, M.G., Engels, K.J., Goldsmith, W.T., Wix, K., Batchelor, T.P., Hussain, S., Nurkiewicz, T.R. 2022. Maternal engineered nanomaterial inhalation during gestation drives redox dysregulation and vascular dysfunction across generations. Particle and Fibre Toxicology. DOI: 10.1186/s12989-022-00457-y

6. Garner, K. L., **Bowdridge, E. C**., Griffith, J. A., DeVallance, E., Seman, M. G., Engels, K. J., Groth, C. P., Goldsmith, W. T., Wix, K., Batchelor, T. P., & Nurkiewicz, T. R. (2022). Maternal Nanomaterial Inhalation Exposure: Critical Gestational Period in the Uterine Microcirculation is Angiotensin II Dependent. Cardiovascular toxicology, 22(2), 167–180. DOI: 10.1007/s12012-021-09712-8

7. Snoderly, H. T., Nurkiewicz, T. R., **Bowdridge, E. C**., & Bennewitz, M. F. (2021). E-Cigarette Use: Device Market, Study Design, and Emerging Evidence of Biological Consequences. International journal of molecular sciences, 22(22), 12452. DOI: 10.3390/ijms222212452

8. Aerts, E. G., Harlow, K., Griesgraber, M. J., **Bowdridge, E. C**., Hardy, S. L., Nestor, C. C., & Hileman, S. M. (2021). Kisspeptin, Neurokinin B, and Dynorphin Expression during Pubertal Development in Female Sheep. Biology, 10(10), 988. DOI: 10.3390/biology10100988

9. Lindo, A. N., Thorson, J. F., Bedenbaugh, M. N., McCosh, R. B., Lopez, J. A., Young, S. A., Meadows, L. J., **Bowdridge, E. C**., Fergani, C., Freking, B. A., Lehman, M. N., Hileman, S. M., & Lents, C. A. (2021). Localization of kisspeptin, NKB, and NK3R in the hypothalamus of gilts treated with the progestin altrenogest. Biology of reproduction, 105(4), 1056–1067. DOI: 10.1093/biolre/ioab103

10. He, Z., Huffman, J., Curtin, K., Garner, K. L., **Bowdridge, E. C**., Li, X., Nurkiewicz, T. R., & Li, P. (2021). Composable Microfluidic Plates (cPlate): A Simple and Scalable Fluid Manipulation System for Multiplexed Enzyme-Linked Immunosorbent Assay (ELISA). Analytical chemistry, 93(3), 1489–1497. DOI: 10.1021/acs.analchem.0c03651

11. Bedenbaugh, M.N., **Bowdridge, E.C**., Hileman, S.M. 2020. Role of neurokinin B in ovine puberty. Domestic Animal Endocrinology. PMID: 32209283 DOI: 10.1016/j.domaniend.2020.106442

12. **Bowdridge, E. C**., Lopez, J. A., McCosh, R. B., Bedenbaugh, M. N., Lindo, A. N., Metzger, M., Haller, M., Lehman, M. N., Hileman, S. M., Goodman, R. L. 2020. Morphological and functional evidence for sexual dimorphism in neurokinin B signalling in the retrochiasmatic area of sheep. *Journal of neuroendocrinology, 32*(7), e12877. DOI: 10.1111/jne.12877

13. Goodman, R.L., He, W., Lopez, J.A., Bedenbaugh, M.N., McCosh, R.B., **Bowdridge, E.C**., Coolen, L.M., Lehman, M.N. and Hileman, S.M., 2019. Evidence that the LH surge in ewes involves both neurokinin B-dependent and–independent actions of kisspeptin. *Endocrinology*. DOI: 10.1210/en.2019-00597

14. **Bowdridge, E.C.**, Abukabda, A.B., Engles, K.J., McBride, C.R., Batchelor, T. P., Goldsmith, W.T., Garner, K.L., Friend, S., Nurkiewicz, T.R. 2019. Maternal Engineered Nanomaterial Inhalation During Gestation Disrupts Vascular Kisspeptin Reactivity. Jun 1;169 (2):524-533 Tox. Sci. DOI: 10.1093/toxsci/kfz064

15. **Bowdridge, E.C**, Abukabda, A.B., McBride, C.R., Batchelor, T. P., Goldsmith, W.T., Garner, K.L., Friend, S., Nurkiewicz, T.R. 2019. Maternal Titanium Dioxide Nanomaterial Inhalation Exposure Compromises Placental Hemodynamics. Mar 15;367:51-61, Toxicology and Applied Pharmacology. DOI: 10.1016/j.taap.2019.01.024

16. Abukabda, A.B., McBride, C.R., Batchelor, T.P., Goldsmith, W.T., **Bowdridge, E.C**., Garner, K.L., Friend, S. and Nurkiewicz, T.R., 2018. Group II innate lymphoid cells and microvascular dysfunction from pulmonary titanium dioxide nanoparticle exposure. *Particle and fibre toxicology*, *15*(1), p.43. DOI: 10.1186/s12989-018-0280-2

17. Hadfield, J.M., **Bowdridge, E.C.,** Holásková, I., Elsasser, T.H., Dailey, R.A. 2018. Breed specific differences in the immune response to lipopolysaccharide in ewes, *Journal of Animal Science* (4th ed., vol. 81, pp. 4220-4228). DOI: 10.1093/jas/sky288

18. Graham, M.R., **Bowdridge, E.C**., Bowdridge, S.A., Holásková, I., Elsasser, T.H. Dailey**,** R.A., 2018. Effects of lipopolysaccharide (LPS) induced inflammatory response in ewes during early embryonic development. 2018. (vol. 08, pp. 421-431). Wuhan: Open Journal of Animal Science. DOI: 10.4236/ojas.2018.84031

19. **Bowdridge, E.C.,** Vernon, M.W., Flores, J.A., Clemmer, M.J. 2017. In vitro progesterone production by luteinized human mural granulosa cells is modulated by activation of AMPK and cause of infertility. Reproductive Biology and Endocrinology DOI: 10.1186/s12958-017-0295-9

20. **Bowdridge, E.C.,** Goravanahally, M.P, Inskeep, E.K., and Flores, J.A. 2015. Activation of Adenosine Monophosphate-Activated Protein Kinase Is an Additional Mechanism That Participates in Mediating Inhibitory Actions of Prostaglandin F_{2Alpha} in Mature, but Not Developing, Bovine Corpora Lutea. Biol. Reprod. 93 (1) 7, 1-7. DOI: 10.1095/biolreprod.115.129411

21. Wright, M. F., **Bowdridge, E**., McDermott, E. L., Richardson, S., Scheidler, J., Syed, Q., Bush, T., Inskeep, E. K. & Flores, J. A. 2014. Mechasnims of intracellular calcium homeostasis in developing and mature bovine corpora lutea. Biol. Reprod. 90, 55. DOI: 10.1095/biolreprod.113.113662

22. **Bowdridge, E.C.**, Knox, W.B., Whisnant, C.S., Farin C.E. 2013. NCSynch: A novel, progestagen-free protocol for ovulation synchronization and timed artificial insemination in goats. Small Ruminant Research, Vol 110, Issue 1, 42-45. https://doi.org/10.1016/j.smallrumres.2012.07.025

Book Chapters

Bowdridge, E.C., DeVallance, E., Garner, K.G., Griffith, J.A., Stapleton, P.A., Hussain, S., Nurkiewicz, T.R. 2022. Cardiovascular System. 4th Edition Encyclopedia of Toxicology. Accepted.

PROFESSIONAL SOCIETIES

2011-2017	Society for the Study of Reproduction, Trainee Member
2011-2017	American Society of Animal Science, Trainee Member
2014	Gamma Sigma Delta-The Honor Society for Agriculture, Member
2016-present	Endocrine Society
2017-present	Society of Toxicology Allegheny Eerie Regional Chapter Reproductive and Developmental Toxicology Specialty Section Inhalation and Respiration Specialty Section Nanoscience and Advanced Materials Specialty Section Cardiovascular Toxicology Specialty Section

PROFESSIONAL REFERENCES

Matthew Campen, PhD
Professor, University of New Mexico, College of Pharmacy, Department of Pharmaceutical Sciences
Nursing Pharmacy Building, room B-3, 1 University of New Mexico Albuquerque, NM 8713
MCampen@salud.unm.edu

Phoebe Stapleton, Ph.D., A.T.C.
Assistant Professor, Rutgers University-Ernest Mario School of Pharmacy, EOHSI- Toxicology
428 Frelinghuysen Road Piscataway NJ 08854
stapleton@eohsi.rutgers.edu

Aaron Erdely
Research Biologist, NIOSH; Adjunct Associate Professor, Physiology, Pharmacology, and Toxicology
West Virginia University
1095 Willowdale Rd, Morgantown, WV 26505

efi4@cdc.gov

Curriculum Vitae – Robert W. Brock, Ph.D.

Date: November 5, 2020

Home Address: 16 Monument Lane, Morgantown, WV 26508

Office Address: Department of Physiology & Pharmacology, P.O. Box 9105, Morgantown, WV

Phone: 304-293-1518

FAX: 304-293-5513

E-mail: rwbrock@hsc.wvu.edu

Currently Associate Professor (Tenured)

Education

Degree	*School*	*Years*
B.Sc. (Kinesiology)	University of Waterloo	1990-1995
M.Sc. (Work Physiology)	University of Waterloo	1995-1996
Ph.D. (Medical Biophysics)	University of Western Ontario	1997-2000

Postgraduate/Postdoctoral Training

Degree	*School*	*Years*
Postdoctoral Fellowship (NSERC)	Lawson Health Research Institute	2000-2002

Current Academic Positions and Appointments

Appointment	*Years*
Associate Professor of Physiology & Pharmacology (Tenured), WVU	2010-present
Graduate Director-Cellular & Integrative Physiology, WVU	2009-present

Previous Academic Appointments

Appointment	*Years*
Associate Professor of Physiology & Pharmacology (Tenure-Track), WVU	2007-2010
Assistant Professor of Pharmacology & Toxicology (Tenure-Track), UAMS	2002-2007
Adjunct Research Professor of Medical Biophysics, UWO	2001-2002

Awards and Honors

Award	*Years*
American Heart Association Fellow – Basic Cardiovascular Sciences Council	2008-present
Wyeth Research Scholar, WVU School of Medicine	2007-present
Educational Innovation Award (Nominee), UAMS	2007
NIH/NCRR Fellow – Survival Skills & Ethics Program	2004
American Physiological Society Meritorious Research Award, GI & Liver Section	2003
NSERC Postdoctoral Fellowship, Canada	2000-2002
Ontario Graduate Research Scholarship, Canada	1999
SEBM Young Investigator Award	1999
APS tum Suden/Hellebrandt Award for Outstanding Research	1998-2002

Professional Societies

Role	*Society*	*Years*
Professional Member	American Heart Association	2007-present
Regular Member	American Society of Pharmacology & Exp. Therapeutics	2003-2013
Regular Member	American Physiological Society	1997-present
Regular Member	The Microcirculatory Society	1997-2015

International Committees

Role	*Committee*	*Years*
Regular Member	Strategic Planning Sub-Committee, APS	2012 & present
Chair	Membership & Fellow Committee, APS	2011-2019
Regular Member	Programs & Meetings Committee, MCS	2011-2013
Regular Member	Education Committee, APS	2007-2010
Regular Member	CV Pharmacology Competition Committee, ASPET	2007-2012
Regular Member	Awards Committee, MCS	2004-2007

National Committees

Role	*Committee*	*Years*
External Reviewer	Tenure Evaluation, University of Mississippi Medical Center	2014
Mentor	MentorNet (JH Dubinion, Ph.D.; Forest Laboratories Inc.)	2011-2014
Regular Member	AHA Great Rivers Affiliate Research Committee	2009-2013

Institutional Committees

Role	*Committee*	*Years*
Member	WVU Graduate Council	2013-2019
Member	WVU General Education Curriculum Oversight Committee	2013-present
Member	WVU Health Sciences Graduate Council	2012-2019
Member	WVU Faculty Senate (elected)	2012-2019
Member	WVU Health Sciences Faculty Advisory Council	2011-present
Member	WVU SoM Strategic Plan - Infrastructure Sub-Committee	2011-2012
Member	WVU SoM Physiology & Pharmacology Dept. Review	2011
Member	WVU Drug Discovery T32 Grant - Internal Advisor	2010-2013
Member	WVU Health Sciences Research Development Grant Review	2007-2013
Member	UAMS IACUC	2006-2007
Member	UAMS Graduate Council Curriculum Committee	2003-2006
Member	UAMS Committee for Graduate Student Research Funds	2002-2004

Editorial Boards

Position	*Journal Title*	*Years*
Member	Liver International	2008-present
Member	Reports in Medical Imaging	2008-present
Member	Journal of Pharmacology & Experimental Therapeutics	2009-present
Member	Frontiers in Vascular Physiology	2012-present
Member	Journal of Pharmacology & Drug Metabolism	2013-present
Member	Microcirculation	2010-2012

Ad hoc Reviewer

Journal Title	*Years*
AJP-Heart and Circulatory Physiology	2011-present
Canadian Journal of Diabetes	2016-present
Journal of Pharmacology & Experimental Therapeutics	2004-present
Free Radical Biology & Medicine	2005-present
Microcirculation	2004-2015
Expert Opinion on Drug Metabolism & Toxicology	2015
Exercise and Sport Pharmacology Text - Holcomb Hathaway	2011-2014
Toxicology & Applied Pharmacology	2010-2014
AJP-Renal Physiology	2013
AJP-GI & Liver Physiology	2007-2013
Liver International	2007-2012
Hepatology	2002-2009
Physiology of the GI Tract Text, 5th - Academic Press/Elsevier	2009
AJP-Regulatory, Integrative & Comparative Physiology	2004-2007
Advances in Physiology Education	2006
Antioxidants & Redox Signaling	2005
Journal of Physiology-London	2003-2004

Reviews and Study Sections

Position	*Entity*	*Years*
Reviewer	AHA Go Red for Women Research Network Panel	2015-2019
Chair	AHA National Center Study Section, VBBP1	2014-2016
Co-Chair	AHA National Center Study Section, VBBP1	2014
Reviewer	Italian Ministry of Health, Directorate for Health Research	2009-2011
Reviewer	NIH-NIDDK ZDK1 GRB-S (M3): Diabetic Complications	2010
Reviewer	NIH-NIDDK ZRG1 EMNR-C (55): Director's Opportunity	2010
Chair	AHA National Center Study Section, VBBP2	2009-2011
Co-Chair	AHA National Center Study Section, VBBP2	2008
Reviewer	AHA National Center Study Section, VBBP2	2007-2008

Grants and Contracts (PI unless otherwise stated)

Current Grants and Contracts

N/A

Pending Grants and Contracts

Grant/Source/Amount	*Years*
A Randomized Trial Assessing the Effectiveness of LISTEN (Loneliness Intervention) on Neuroinflammation, Psychosocial Factors, Functional Ability, Quality of Life, Blood Pressure, and Healthy Behavior. (Co-I; PI: Theeke) NINR R01 NR016955-01 ($2, 225, 796)	2020-2024

Previously Funded Grants and Contracts

Grant/Source/Amount	*Years*
C-peptide: protection against diabetic complications (PI) NIDDK R01 DK067582 ($821, 916)	2007-2013

Special Becton Dickinson Fortessa Flow Cytometer (Key Personnel) 2013-2014
NCRR S10 OD016165

Research training in cardiovascular & pulmonary diseases (Mentor; PI: Mustafa) 2008-2013
NHLBI T32 HL090610 ($1,579,464)

C-peptide: protection against diabetic complications-supplement (PI) 2009
NIDDK R01 DK067582-04S109 ($1,000)

Protection from T1D microvascular dysfunction: role of C-peptide & NADPH (PI) 2006-2007
AHA BGIA 0660073Z *Surrendered 6/07 ($107, 250)

High-Speed *in vivo* imaging system equipment (PI) 2006-2007
Arkansas Biosciences Institute ($42, 881)

Biochemical and behavioral mechanisms of toxicity (Mentor; PI: Hinson) 2002-2007
NIEHS T32 ES010952 ($1,148,750)

Skeletal muscle damage and microangiopathy in diabetes (Co-PI; PI: Potter) 2001-2002
Plunkett Foundation ($50,000)

Undergraduate Medical Education

List name of course, topic of presentation, and audience

PCOL 761/801-Medical Pharmacology (1/2008 – present)
*2nd Year Medical Students (~110 per year)
Lecturer (Calcium Entry Antagonists) – 1 contact hour/year
Lecturer (Renin-Angiotensin System) - 1 contact hour/year
Lecturer (Sedative Hypnotics & Centrally Acting Muscle Relaxants) – 1 contact hour/year
Lecturer (Anticonvulsants) – 1 contact hour/year

PCOL 761/801-Medical Pharmacology (1/2008 – 2012)
*2nd Year Medical Students (~12 per group)
ALE/TBL Facilitator (various topics) – 8 contact hours/year

Graduate Student Education

List name of course, topic of presentation, and audience

PCOL 745-Advanced Graduate Pharmacology (9/2007 – 5/2011)
*Graduate Students (~8 per year)
Module Coordinator for CV & Renal Pharmacology
Lecturer (Drugs that Interfere with Renin-Angiotensin) - 2 contact hours/year
Lecturer (Selective Aldosterone Receptor Antagonists) - 2 contact hours/year

PSIO 750-Graduate Physiology & Pharmacology (8/2013-present)
*Graduate Students (~5 per year)
Course Director and Discussion Leader – 50 contact hours per year

PSIO 793A-Special Topics in Physiology of Vascular Inflammation (1/2009-present)
*Graduate Students (~4 per year)
Course Director and Lecturer – 25 contact hours per year
(Offered every other year)

BMS 732-Cardiovascular and Respiratory Biology (1/2009-5/2014)
*Graduate Students (~4 per year)
Lecturer (Inflammation) – 1½ contact hours/year
Lecturer (Hepatic & Renal Microcirculation) - 1½ contact hours/year

BMS 793-Translational Cardiovascular Sciences (5/2013-5/2014)
*Graduate Students (~10 per year)
Lecturer (Regulation of Arterial Pressure) – 1 contact hour/year
Lecturer (Responses to Physiological Stress) - 1 contact hour/year
(Offered every other year)

BMS 793A/B-Foundations of Contemporary Biomedical Research (8/2014-present)
*Graduate Students (~18 per year)
Co-Developer and Course Director
Lecturer (Overview: Systems to Organs…Tissues to Cells) – 1 contact hour/year
Lecturer (Integrated Cardiovascular Control) – 2 contact hours/year
Lecturer (Effect of Diabetes on Cardiovascular Function) – 3 contact hours/year

Health Professions Education
List name of course, topic of presentation, and audience
PCOL 743-Pharmacology 1 (9/2014-9/2015)
*2nd Year Pharmacy Students (~40 per year)
Lecturer (Calcium Channel Antagonists) – 1 contact hour/year
Lecturer (Renin-Angiotensin System) - 1 contact hour/year

PCOL 791/760-Dental Pharmacology (8/2013-present)
*2nd Year Dental Students (~55 per year)
Course Director (started 8/2015)
Lecturer (Introduction to Dental Pharmacology) – 1 contact hour/year
Lecturer (Mechanisms of Drug Action) – 1 contact hour/year
Lecturer (Nutrition in Dentistry) – 1 contact hour/year
Lecturer (Calcium Channel Antagonists) – 1 contact hour/year
Lecturer (Antihypertensive Drugs) – 1 contact hour/year
Lecturer (Drugs of Heart Failure) – 1 contact hour/year
Lecturer (Antianginals) – 1 contact hour/year
Lecturer (Anticoagulants) – 1 contact hour/year
Lecturer (Antiarrythmics) – 1 contact hour/year

PCOL 763-Advanced Dental Pharmacology (9/2016-present)
*3rd Year Dental Students (~55 per year)
Course Co-Director
ALE/TBL Facilitator (various topics) – 30 contact hours/year

Postgraduate Courses and Workshops Directed

List name of course, topic of presentation, and audience

Refresher Course in Renal Physiology, EB 2009-New Orleans (2008-2009)
*Medical Physiology Course Directors (~125)

Refresher Course in Respiratory Physiology, EB 2008-San Diego (2007-2008)
*Medical Physiology Course Directors (~125)

Invited Lectures and Presentations: International

List authors, title, conference, and date

RW Brock. ***"Hepatic microvascular oxidants in a model of systemic inflammation."***
APS Symposium: Frontiers in the Cellular and Molecular Physiology of the Hepatic Microcirculation.
EB 2007 - Washington, DC (04/2007)

RW Brock. ***"Allopurinol blocks the early progression, but not the initiation of remote hepatic parenchymal damage in the mouse."***
APS Featured Topic: Mechanisms of Liver Pathophysiology.
EB 2003 - San Diego, CA (04/2003)

Invited Lectures and Presentations: Local and Institutional

List authors, title, conference, and date

RW Brock. ***"Systemic inflammation and the microcirculation: from trauma to diabetes."***
Center for Critical Illness Research, Lawson Health Research Institute Visiting Scientist Series
London, ON, Canada (04/2009)

RW Brock. ***"Oh say can you 'C': A peptide for combating microvascular dysfunction in type I diabetes."*** Center for Interdisciplinary Research in Cardiovascular Sciences, West Virginia University (02/2007)

RW Brock. ***"Intravital Microscopy: Window to the In Vivo Microenvironment."***
University of Arkansas for Medical Sciences, Dean's Research Forum (11/2006)

RW Brock. ***"Remote hepatic damage: protection by heme oxygenase."***
University of Arkansas for Medical Sciences, Dept. of Physiology (03/2003)

RW Brock. ***"Pathogenesis of remote hepatic damage: humoral and cellular mediators."***
University of Arkansas for Medical Sciences, Dept. of Pharmacology & Toxicology (10/2001)

RW Brock. ***"The evolution of remote hepatic injury."***
The Annual AC Burton Lecture (05/2000)

RW Brock, ME Tschakovsky, JK Shoemaker, JR Halliwill, MJ Joyner & RL Hughson. ***"Is nitric oxide or acetylcholine involved in the rapid vasodilation observed at the onset of human forearm exercise?"*** 1997 Ontario Exercise Physiology Conference (01/1997)

RW Brock, JK Shoemaker, ME Tschakovsky & RL Hughson. ***"Diminished post-exercise hyperemia after forearm exercise below versus above heart."***
1996 Ontario Exercise Physiology Conference (01/1996)

Publications (must be listed under the appropriate category)

Abstracts Presented (IN REVERSE CHRONOLOGICAL ORDER, past 5 years only).

1. Brooks, SD, Branyan, K, Asano, S, Hu, H, Ren, X, Brock, RW, Frisbee, JC & Chantler, PD (2016). Pharmacological Inhibition of NAD(P)H oxidase with the peptide gp91ds-tat during ischemic stroke reduces infarct volume and improves vascular reactivity in obese Zucker rats. FASEB J April 2016 30: 953.13.

2. Frisbee JC, Frisbee SJ, Olfert IM, Chantler PD, Tabone LE, d'Audiffret AC, Shrader CD, Brock RW, Lombard JH (2016). Increased Peripheral Vascular Disease Risk Progressively Constrains Perfusion Adaptability In The Skeletal Muscle Microcirculation. 66th Annual Meeting of the British Microcirculation Society – Newcastle University. Newcastle, UK.

3. Frisbee SJ, Grogg KA, Chantler PD, Olfert IM, Frisbee JC, Brock RW, Tabone LE, d'Audiffret AC, Huseynova K, Hulsey TC (2016). Development of an interdisciplinary team science approach to study complex cardiovascular diseases. Science of Team Science (SciTS) 2016 Conference. Phoenix, AZ.

4. Devallance, ER, Chantler, PD, Goodwill, AG, Butcher, JT, Olfert, IM, Brock, RW & Frisbee, JC (2014) Temporally distributed mechanisms for skeletal muscle microvascular rarefaction in metabolic syndrome. FASEB J April 2014 28:674.9.

5. O'Leary, HA, Kothur, A, Goodwill, AG, Frisbee, JC & Brock, RW (2011). Alterations in hepatic tumor cell colonization during obesity. FASEB J March 17, 2011 25:639.2.

6. O'Leary, HA, Kothur, A, Fournier, SB, Goodwill, AG, Frisbee, JC & Brock, RW (2011). Effect of remote ischemic preconditioning on hepatic parenchymal and microvascular damage in obesity. FASEB J March 17, 2011 25:1117.9.

Original Published Peer-Reviewed Articles

1. Brock, RW, Tschakovsky, ME, Shoemaker, JK, Halliwill, JR, Joyner, MJ & Hughson, RL. Effects of acetylcholine and nitric oxide on forearm blood flow at rest and after a single muscle contraction. *Journal of Applied Physiology* 85(6): 2249-54, 1998. PMID: 9843549

2. Naylor, HL, Shoemaker, JK, Brock, RW & Hughson, RL. Prostaglandin inhibition causes an increase in reactive hyperaemia after ischaemic exercise in human forearm. *Clinical Physiology* 9(3): 211-20, 1999. PMID: 10361611

3. Brock, RW, Carson, MW, Harris, KA & Potter, RF. Microcirculatory perfusion deficits are not essential for remote parenchymal injury within the liver. *American Journal of Physiology Gastrointestinal & Liver Physiology* 277(1): G55-60, 1999. PMID: 10409151

4. Lawlor, DK, Brock, RW, Harris, KA & Potter, RF. Cytokines contribute to early hepatic parenchymal injury and microvascular dysfunction following bilateral hindlimb ischemia. *Journal of Vascular Surgery* 30(3): 533-41, 1999. PMID: 10477647

5. Brock, RW, Lawlor, DK, Harris, KA & Potter, RF. Initiation of remote hepatic injury in the rat: interactions between Kupffer cells, tumor necrosis factor-alpha, and microvascular perfusion. *Hepatology* 30(1): 137-42, 1999. PMID: 10385649

6. Brock, RW, Nie, RG, Harris, KA & Potter, RF. Kupffer cell-initiated remote hepatic injury following bilateral hindlimb ischemia is complement dependent. *American Journal of Physiology Gastrointestinal & Liver Physiology* 280(2): G279-84, 2001. PMID: 11208551

7. Nie, RG, McCarter, SD, Harris, KA, Lee, PJ, Zhang, X, Bihari, A, Gray, D, Wunder, C, Brock, RW & Potter, RF. The role of endogenous heme oxygenase in the initiation of remote liver injury following bilateral hindlimb ischemia. *Journal of Hepatology* 36(5): 624-30, 2002. PMID: 11983445

8. Wunder, C, Brock, RW, McCarter, SD, Bihari, A, Harris, KA, Eichelbrönner, O & Potter, RF. The role of heme oxygenase in leukocyte accumulation within the liver during the initiation of SIRS. *Journal of Physiology-London* 540(Pt.3): 1013-21, 2002. PMID: 11986386

9. Wunder, C, Scott, JR, Lush, CW, Brock, RW, Bihari, A, Harris, KA, Eichelbrönner, O & Potter, RF. Heme oxygenase modulates hepatic leukocyte sequestration via changes in sinusoidal tone in early systemic inflammation in mice. *Microvascular Research* 68: 28-29, 2004. PMID: 15219417

10. Reid, AB, Kurten, RC, McCullough, SS, Brock, RW & Hinson, JA. Mechanisms of acetaminophen-induced hepatotoxicity: role of oxidative stress and mitochondrial permeability transition in freshly isolated mouse hepatocytes. *Journal of Pharmacology & Experimental Therapeutics* 312(2):509-16, 2005. PMID: 15466245

11. Dorman, RB, Wunder, C & Brock, RW. Cobalt protoporphyrin protects against hepatic parenchymal injury and microvascular dysfunction during experimental rhabdomyolysis. *Shock* 23(3):275-80, 2005. PMID: 15718928

12. Wunder, C, Brock, RW, Krug, A, Roewer, N & Eichelbrönner, O. A remission spectroscopy for in vivo monitoring of murine hepatic tissue oxygenation in early systemic inflammation. *Comparative Hepatology* 4(1):1, 2005 (doi:10.1186/1476-5926-4-1). PMID: 15647116

13. Wunder, C, Brock, RW, Frantz, S, Göttsch, W, Morawietz, H, Roewer, N & Eichelbrönner, O. Carbon monoxide, but not endothelin-1 plays a major role for the hepatic microcirculation in a murine model of early systemic inflammation. *Critical Care Medicine* 33(10): 2323-31, 2005. PMID: 16215388

14. Tiwari, MM, Brock, RW, Megyesi, JK, Kaushal, GP, Mayeux, PR. Disruption of renal peritubular blood flow in lipopolysaccharide-induced renal failure: roles of nitric oxide and caspases. *American Journal of Physiology Renal Physiology* 289(6):F1324-32, 2005. PMID: 15998845

15. Dorman, RB, Wunder, C, Saba, H, Shoemaker, JL, MacMillan-Crow, LA & Brock, RW. NAD(P)H oxidase contributes to the progression of remote hepatic parenchymal injury and endothelial dysfunction, but not microvascular perfusion deficits. *American Journal of Physiology Gastrointestinal & Liver Physiology* 290(5):G1025-32, 2006. PMID: 16339298

16. Wu, L, Tiwari, MM, Messer, KJ, Holhoff, H, Gokden, N, Brock, RW & Mayeux, PR. Peritubular capillary dysfunction and tubular epithelial cell stress following lipopolysaccharide administration in mice. *American Journal of Physiology Renal Physiology* 292(1):F261-68, 2007. PMID: 16926442

17. Kredel, M, Muellenbach, RM, Brock, RW, Wilckens, HH, Brederlau, J, Roewer, N & Wunder, C. Liver dysfunction after lung recruitment manoeuvres during pressure controlled ventilation in experimental acute respiratory distress. *Critical Care* 11(1): R13, 2007 (doi:10.1186/cc5674). PMID: 17261192

18. Brock, RW & Dorman, RB. Obesity, insulin resistance and hepatic perfusion. *Microcirculation* 14(4-5):339-47, 2007. PMID: 17613806

19. Galanzha, EI, Tuchin, VV, Brock, RW & Zharov, VP. *In vivo* flow cytometry for time-resolved detection of circulating cells and ICG IR-angiography and lymphography. *Proceedings of SPIE*, Volume 6535, 2007 (doi:10.1117/12.741087).

20. Munusamy, S, Saba, H, Mitchell, T, Megyesi, JK, Brock, RW & MacMillan-Crow, LA. Alteration of renal respiratory complex-III during experimental type-1 diabetes. *BMC Endocrine Disorders* 9:2*,* 2009 (doi:10.1186/1472-6823-9-2). PMID: 19166612

21. Frisbee, JC, Hollander, JM, Brock, RW, Yu, HG & Boegehold, MA. Integration of skeletal muscle resistance arteriolar reactivity for perfusion responses in the metabolic syndrome. *AJP-Regulatory, Integrative and Comparative Physiology* 296(6): R1771-R1782, 2009. PMID: 19386988

22. Brugger, J, Schick, MA, Brock, RW, Baumann, A, Muellenbach, RM, Roewer, N & Wunder, C. Carbon monoxide has antioxidative properties in the liver involving p38 MAP kinase pathway in a murine model of systemic inflammation. *Microcirculation* 17(7): 504-513, 2010. PMID: 21040116

23. Stapleton, PA, Goodwill, AG, James, ME, Brock, RW & Frisbee, JC. Hypercholesterolemia and microvascular dysfunction: interventional strategies. *Journal of Inflammation* 7:54, 2010 (doi:10.1186/1476-9255-7-54). PMID: 21087503

24. Nurkiewicz TR, Porter DW, Hubbs AF, Stone S, Moseley AM, Cumpston JL, Goodwill AG, Frisbee SJ, Perrotta PL, Brock RW, Frisbee JC, Boegehold MA, Frazer DG, Chen BT, Castranova V. (2011). Pulmonary particulate matter and systemic microvascular dysfunction. *Research Report-Health Effects Institute* 164: 3-48. PMID: 22329339

25. Vejandla, H, Hollander, JM, Kothur, A & Brock, RW. (2012) C-Peptide reduces mitochondrial superoxide generation by restoring complex I activity in high glucose-exposed renal microvascular endothelial cells. *ISRN Endocrinology*, 2012: 162802 (doi:10.5402/2012/162802). PMID: 22778984

26. Schick, MA, Baar, W, Sven, F, Schlegel, N, Wollborn, J, Held, C, Schneider, R, Brock, RW, Roewer, N & Wunder, C. (2014) Sepsis Induced Acute Kidney Injury By Standardized Colon Ascendens Stent Peritonitis In Rats-A Simple, Reproducible Animal Model. *Intensive Care Medicine Experimental* 2: 34 (doi:10.1186/s40635-014-0034-x). PMID: 26266931

27. Frisbee, JC, Goodwill, AG, Frisbee, SJ, Butcher, JT, Brock, RW, Olfert, IM, DeVallance, ER & Chantler, PD. (2014) Distinct temporal pulses of microvascular rarefaction in skeletal muscle of obese Zucker rats. *AJP- Heart and Circulatory Physiology* 307(12): H1714-H1728. PMID: 25305181

28. Frisbee JC, Butcher JT, Frisbee SJ, Olfert IM, Chantler PD, Tabone LE, d'Audiffret AC, Shrader CD, Goodwill AG, Stapleton PA, Brooks SD, Brock RW, Lombard JH. Increased Peripheral Vascular Disease Risk Progressively Constrains Perfusion Adaptability In The Skeletal Muscle Microcirculation. *AJP- Heart and Circulatory Physiology* 310(4): H488-H504, 2015. PMID: 26702145

29. Baar, W, Flemming, S, Schlegel, N, Wollborn, J, Schneider, R, Brock, RW, Wunder, C & Schick, MA. Standardized colon ascendens stent peritonitis in rats - a simple, feasible animal model to induce septic acute kidney injury. *Journal of Visualized Experiments – JoVE (ACCEPTED)* 2016.

30. Lemaster KA, Farid Z, Brock RW, Shrader CD, Goldman D, Jackson DN, Frisbee JC. Altered post-capillary and collecting venular reactivity in skeletal muscle with metabolic syndrome. *Journal of Physiology* 595(15):5159-5174. 2017. PMID: 28556909.

Original Peer-Reviewed Articles in Press – N/A

Books – N/A

Book Chapters

1. Frisbee, JC & Brock, RW. Microvascular dysfunction in insulin resistance. pp.31-40. In N. Wiernsperger, E. Bouskela & LG Kraemer-Aguiar (eds), Microcirculation and Insulin Resistance - Volume 1. Oak Park, IL: Bentham Science Publishers Ltd., 2009. (doi:10.2174/978160805057410901010031).

Technical Reports and Conference Proceedings – N/A

Invited Publications (Non peer-reviewed) – N/A

Editorials – N/A

Letters – N/A

Book Reviews – N/A

12/2/08

CURRICULUM VITAE

Paul B. Brown

November 1, 2008

PRESENT POSITION

Professor
Department of Physiology
West Virginia University Medical Center
Morgantown, WV 26506

TELEPHONE:

(304) 293-1512

PERSONAL DATA:

BORN: 11/29/42
CITIZENSHIP: U.S.A.

HOME ADDRESS: 428 Grand Street
Morgantown, WV 26505
(304) 292-2689

EDUCATION:

B.S., Life Sciences, M.I.T., 1964
Ph.D., Physiology, University of Chicago, 1968

AWARDS AND FELLOWSHIPS:

NIH predoctoral trainee, 1964-68
Gellhorn Prize for Research in Neurophysiology, University of Chicago, 1968
NIH postdoctoral trainee, (individual fellowship), Cornell University 1968-72
Participant, LM-Square computer dissemination program, 1978-1984
Sabbatical leave at University of Edinburgh, Scotland,
9/1/80-7/31/81: Fogarty Senior International Fellow
NIH research grant support
(as PI), 1973 - 1987, 1988 - 1999.
(as Co-PI), 1999 -2007
Also research support from NSF, local sources.
Benedum Distinguished Scholar Award, WVU, 1991
"Teddy" Award for Animal Research, Incurably Ill for Animal Research, WV Chapter, 1992

PROFESSIONAL POSITIONS:

Department of Physiology, West Virginia University Medical Center, Morgantown, WV 26506
Assistant Professor 07/01/74 to 06/30/77
Associate Professor 07/01/77 to 6/31/82
Professor 07/1/82 to present
Neurological Unit, Boston State Hospital, Boston, MA:
Research Neurophysiologist 03/72 to 06/74
Physical Biology Department, Cornell University,
Research Associate, 1968 to 1971.

PROFESSIONAL SOCIETIES:

(None as of 2001)
AAAS
Physiological Society

08/09 - 1002

Society for Neuroscience

TEACHING EXPERIENCE:

Advanced Physiology: neurophysiology module 1974 - present
Course coordinator, 1979 - 1997
Graduate Neurophysiology: 1974-2000
Medical Neurobiology: 1974 - 2001
Physiological Methods: 1974 - 1980, 1988 - 1990. Course coordinator, 1977 - 1978
Physiology for Allied Health Professionals (Pharm., Med-Tech., Phys. Ther., Ex. Physiol.): 1986, 1987
Neural Networks (Electrical and Computer Engineering): 1988
Review Course for Neurology Residents: 1976 – 77
Undergraduate honors biology students: 1975 to 1982
Senior Design Project (Electrical and Computer Engineering) 1978 to 1988
Seminar, Fall Semester: Coordinator, 1977 - 1979, 1988-present
Facilitator, Med I, 1995
Graduate Neurophysiology, 1995 – 2002 (Coordinator, 1997-1998)
Dental Physiology, 1998 – 2002
Physiology 441, 2003 – present
Medical Neuroscience, Sohar, Oman: together with J Culberson, taught Neuroscience course for Omani medical students, 2005

Thesis and Examination Committees

Doctoral:

*Robert Yezierski, 1975 - 1979
Richard Rumbaugh, 1976
*H. Richard Koerber, 1978 - 1981
James Heym, 1978
*Ramana Sonty, 1986 - 1991
Jeffrey Woodbury (Neurobiology and Behavior, SUNY/Stony Brook), 1986-1990
Peijian Lee (Electrical Engineering), 1988-1992
Eleanor Goodall (Bioengineering, University of Utah) 1988-91
Eric McDowell (Mathematics) 1994 - 1995
Robert Pierce (Mathematics) 1994 - 1995
*Jeffrey Lawson, 1997-2000
Jesse Thompson, 2004 - present

Master's:

Laura Bragg, 1976
*H. Richard Koerber, 1976 - 1978
*David Kukulinsky, 1977 - 1978
Alan Saul (Mathematics), 1980 - 1981
Manas Kanungo (Electrical Engineering), 1981-1986
William Conn (Computer Science), 1984-1986
Michael Stinely (Electrical Engineering), 1987-1988
David Sturm (Electrical and Computer Engineering) 1990-1990
*Wang Lei, 1991 – 1993

(*Chairman of student's committee)

INTRAMURAL SERVICE:

Departmental:

Graduate Studies Committee, 1974-1979
Chairman, 1975-1977
Computer Committee, 1977-1981
Chairman, 1978-1980
Faculty Search Committees, (two: Physiology) 1977-1980
Tenure and Promotion Committee, 1981- present
Shared Facilities Committee, 1982-1988
Budget Committee, 1994 - 1995
Faculty Search Committees for Physiology (committee Chairman), 1996, 1998, 2002 - 2003

Medical Center:

Committee on Graduate Education in Basic Medical Sciences, 1975-1977
Medical School Admissions Committee: 1975-1983
Medical School Guest Lecturer Committee, 1977-1980
Medical Technology Admissions and Advisory Committee, 1976-1978
Committee for Academic Evaluation of Surgery Department, 1979-1980
Search Committee for Director of Biomedical Illustration, 1982
Judge, Van Liere Memorial Research Convocation, 1983, 1993.
Purchasing Department Liaison Committee
Ad Hoc Planning Committee for Neuroscience Ph.D. program (Chairman), 1986 - 1993
Research Advisory Council, 1990-1993
Ophthalmology Visual Physiologist Search Committee (Chairman), 1993 - 1994
Neuroscience Track Planning Committee (Chairman), 1994 – 1995
Oman Medical School Curriculum Committee, Med I, 2005

Graduate School:

Graduate School Planning Council, 1976 - 1977

University:

Principal Investigators Advisory Committee, 1979 - 1980
Judge, Sigma Xi Research Colloquium, 1979
Performing Arts Series Committee, 1981 - 1984
Animal Research Information Committee (Chairman), 1988-1989
Northern West Virginia Chapter, Society for Neuroscience (Counselor 1983-1990, President 1990)
Benedum Distinguished Scholar Award Biosciences and Health Sciences review committee, 1991. Humanities, 1993
Faculty Hearing Committee, 1992 – 1993
University Senate, 2003 – present
Liberal Studies Committee 2003 – present
(chair, 2004 – present)

EXTRAMURAL SERVICE:

Review of grant applications (no longer reviewing grant applications as of 2001):
National Science Foundation
Oak Ridge Associates

WVU Senate Research Grants
Medical Center Research Grants
National Research Council (Dept. of Army)
NIH:
- Neurology B-1 Study Section
- Biotechnology Resources Branch
- Behavioral and Neurosciences Special Emphasis Panel
- Neurology B-2 Study Section
- Sensory Disorders and Language Study Section
- NSDC Study Section

Louisiana Board of Regents
US-Israel Binational Science Foundation
Paralyzed Veterans of America

Review of manuscripts for publication (no longer reviewing manuscripts as of 2001):
- Biophysics Journal
- Brain Research
- Brain Research Bulletin
- Experimental Brain Research
- Experimental Neurology
- Journal of Comparative Neurology
- Journal of Comparative Physiology
- Journal of Neurophysiology
- Journal of Neuroscience
- Neuroscience
- Physiology and Behavior
- Proceedings of the Society for Experimental Biology and Medicine
- Science
- Somatosensory and Motor Research

Consulting (no longer consulting as of 2001):
- Elsevier-North Holland
- Lansing Research Corp.
- Frederick Haer and Company
- Trends in Neuroscience
- Cornell University
- Williams and Wilkins
- Pergamon Press
- Second Industrial Revolution
- Chattanooga Corporation
- Stoelting
- MacMillan Publishing Co.
- University of Florida
- SUNY/Stony Brook
- McGraw Hill
- MIT Press
- University of Utah
- John Hopkins University
- State of Texas Higher Education Coordinating Board
- MicroBrightfield

Editor-in-Chief:
Journal of Electrophysiological Techniques (Pergamon), 1978-1987.

Biomedical research advocacy (no longer a research advocate):
WV legislative lobbyist, 1989
Interim Executive Director, West Virginia Association of Biomedical Research, 1990-1993
Faculty advisor, WVU chapter of Coalition for Animals and Animal Research, 1990-1993
Organizer and member, Morgantown chapter of Incurably Ill for Animal Research, 1990-1993

Community service (no longer performing community service):
lectures in area high schools
mentorship program for gifted junior high school students
summer research program for minority high school students

RESEARCH:

I have been blackballed from research in my own field after publishing a paper which overturned a hypothesis of Mountcastle's, which had been untested for fifty years. I've now returned to research in auditory neuroscience with Dr. George Spirou, a collaboration of at least five years' standing. We are studying the inhibitory role of neurons in the medial and lateral nuclei of the trapezoid body on integrative processing by neurons in the medial superior olive, the first site of binaural convergence. These nuclear groups are involved in localization of sound, using a number of different mechanisms.

PATENTS:

Apparatus and Method for Long Term Storage of Analog Signals
Analog Neural Network and Method of Implementing Same

INDUSTRY:

Ronald Millecchia and I developed an integrated system of smart instruments, for laboratory automation of electrophysiology experiments. We are using this system to great advantage in our own research, performing experiments which would be impossible with conventional equipment. Part of this development was supported by an SBIR grant (Phase I) from NIH. Stoelting Company was marketing this system.

RESEARCH GRANT SUPPORT (direct costs)

[Note: I have only recently begun keeping a record of funding, so information for older NIH and NSF grants is only approximate.]

NIH: 2 R01 NS12061. Organization of the dorsal horn. ca. 1972-1986. Year 1: ca. $40,000. Year 14: ca. $80,000.

West Virginia University (NIH GRS): Somatotopy of dorsal horn projections. 7/1/74-6/30/75. $2300.

NSF: DCR74-24765. Computer technology for neuroscience research. ca. 1974-1976. ca. $30,000.

West Virginia University (NIH GRS): Antidromic tracing of primary afferent projections to spinal cord. 10/1/76-9/30/77, $2350.

West Virginia University (NIH GRS): Whole-root dermatomes of cat hindlimb dorsal roots. 1/1/78 -2/31/78. $2000.
West Virginia University (NIH GRS): Cutaneous afferent tracing in spinal cord. 1/1/79-12/31/79. $2000.

West Virginia University (NIH GRS): Collateral sprouting of primary afferents in partially deafferented dorsal horn. 12/1/81-11/30/82. $7514.

West Virginia University (NIH GRS): Topographic ordering of connections between dorsal root ganglion cells and dorsal horn cells in vitro. 10/1/82-9/30/83. $7900.

West Virginia University (NIH GRS): Cross correlation analysis of dorsal horn cell interactions. 4/1/84-3/31/85. $6250.

NIH: SBIR grant (Phase I) to Stoelting Company to develop laboratory automation system. ca. 1986-1987, ca. $50,000.

NIH: R01 NS25238. Crossed receptive field components of dorsal horn cells. 9/1/87-8/31/88. Year 1: $68,624. Year 2: $56,520.

NIH: R01 NS27511. Morphology and somatotopy in the dorsal horn. 8/1/89-11/30/93. Year 1: $83,155. Year 2: $95,438. Year 3: $98,602. Year 4: $101,894.

NIH: 1 R01 NS30725. Sprouting or strengthening in deafferented dorsal horn. 1/1/93-12/31/96. Year 1: 142,432. Year 2: $104,393. Year 3: $108,570. Year 4: $112,913.

NIH: 1 R01 NS29997 Dorsal horn cell monosynaptic receptive fields. 6/1/95-5/31/99. Year 1: $162,806. Year 2: $164,846. Year 3: $171,441. Year 4: $178,298.

WVU: HSC Team Development Grant. Neural Correlates of tactile spatial discriminations. 6/1/97-5/31/97. $60,000

NIH: Tactile spatial discriminations and the dorsal horn. 7/1/98-6/30/03. $1,301,890. Rejected.

WVU Research Corp: Tactile discrimination and the dorsal horn. 7/1/98-6/30/99. $45,000.

NIH: Peripheral Nerve Regeneration and Dorsal Horn Somatotopy (Co-PI is H. Richard Koeder, University of Pittsburgh 12/1/99-11/30/03, subcontract, ca. $100,000/year.

NIH: Binaural Interaction in Medial Superior Olive. (Co-I: George Spirou, PI). 6/1/02-5/31/07, ca. $10,000/year for PBB component.

VISITING LECTURES (other than published symposia, which are listed as book chapters)

[Note: I have not kept a record of invited talks until very recently. These are listed from memory, so dates and titles are approximate.]

Indiana University, Department of Physiology, 1971. "Response of cat dorsal horn cells to variations of stimulus location, intensity, and area."

University of Vermont, Department of Physiology, 1972. "The organization of light touch cells in the cat dorsal horn."

University of Southern Florida, Department of Physiology, 1972. "The processing of light touch information by cat dorsal horn cells."

Memorial University of Newfoundland, Faculty of Medicine, 1973. "The somatotopic organization of cat dorsal horn."

University of California, San Francisco, Department of Physiology, 1973. "Functional organization of the dorsal horn."

West Virginia University, Department of Physiology, 1974. "Functional organization of the dorsal horn."

Cornell University, Section of Neurobiology and Behavior, 1975."Somatotopic organization of the cat dorsal horn."

Medical College of Pennsylvania, Department of Anatomy, 1977. "Response of dorsal horn cells to partial deafferentation."

Marine Biological Institute, University of Texas Medical Branch, Department of Physiology, 1979. "Quantitative analysis of dorsal horn cell receptive field properties."

University of Ediburgh, Royal Veterinary College, Department of Physiology, 1980. "Parametric analysis of dorsal horn cell receptive field properties."

Neurological Sciences Institute, Good Samaritan Hospital (Portland, Oregon), 1981. "Response of spinocervical cells to partial deafferentation."

University of Utah School of Medicine, Department of Physiology, 1982. "Alterations of dorsal horn somatotopy following partial deafferentation."

Madras Christian University, Department of Biology, 1983. "Alterations of dorsal horn somatotopy following partial deafferentation."

National Institute of Mental Health and Neuroscience (Bangalore, India), Department of Physiology, 1983. "Alterations of dorsal horn somatotopy following partial deafferentation."

Tata Institute for Fundamental Research (Bombay), 1983. "Alterations of dorsal horn somatotopy following partial deafferentation."

Patel Chest Institute (New Delhi), 1983. "Alterations of dorsal horn somatotopy following partial deafferentation."

Indian Institute of Technology (New Delhi), Department of Bioengineering, 1983. "Alterations of dorsal horn somatotopy following partial deafferentation."

Varanasi Hindu University (Benares), Department of Biology, 1983. "Alterations of dorsal horn somatotopy following partial deafferentation."

Oregon Health Sciences University, Department of Dental Physiology, 1984. "Crossed axonal projections and crossed receptive field components in cat dorsal horn."

University of Florida, Department of Neuroscience, 1985. "Variations of axonal morphology as a function of location in the dorsal horn map of the skin."

Neurological Sciences Institute, Good Samaritan Hospital (Portland, Oregon), 1986. "Variation of axonal morphology with local map scale in the dorsal horn."

State University of New York, Stony Brook, Department of Neurobiology, 1987. "Morphological correlates of somatotopic organization of the dorsal horn."

East Virginia Medical School, Department of Reconstructive Surgery, 1988. "Plasticity in the dorsal horn," and "Morphological variation in the dorsal horn."

State University of New York, Upstate Medical Center (Syracuse), Department of Neurosurgery, 1989. "Variation of primary afferent terminal distributions as a function of local map scale."

University of Pittsburgh, Department of Anatomy, Neurobiology and Cell Science, 1990. "Correlation of primary afferent terminal distributions and local map scale in the dorsal horn."

University of Florida, Department of Neuroscience, 1990. "Dorsal horn cell responses to partial deafferentation."

University of Texas, Houston, Department of Neuroscience, 1991. "Correlation of primary afferent morphology with local map scale in the cat dorsal horn."

University of North Dakota, Department of Physiology, 1992. "Correlation of form and function in the dorsal horn."

University of Florida, Department of Neuroscience, 1993. "Neural Computation."

University College London, Department of Anatomy, 1994. "The assembly of low threshold excitatory receptive fields in the dorsal horn."

University of Edinburgh, Royal Veterinary College, Department of Preclinical Sciences, 1994. "Assembly of dorsal horn cell receptive fields."

University of Florida, School of Medicine, Department of Neuroscience, 1995. "How does the spinal cord build a map of the skin?"

University of North Texas, Biology Department. 1999 "A signal detection model of static spatial discrimination".

Brown, PB, Millecchia, R, Field, M, and Goodman, I. A signal detection model of spatial discrimination of stationary stimuli. In: Brain Mechanisims of Tactile Perception Symposium, Stockholm, Sweden, 1999.

Brown, PB, and Millecchia, R. Never trust a homunculus. University of Pittsburgh, 2002.

PUBLICATIONS

A. ABSTRACTS

1. Goldberg, Jay M., P B Brown: Response of neurons of the superior olivary complex of the dog to dichotic stimuli. Physiologist 9:190, 1966.

2. Brown, Paul B., DN Tapper: A sensitive technique for monitoring dorsal root responses to cutaneous stimulation. Fed. Proc. 29:1970.

3. Tapper, Daniel N., PB Brown: Organization of the dorsal spinal grey of cat as studied by quantitative stimulation of the Type I receptor system. Soc. Neurosci. 3:206, 1973.

4. Brown, Paul B., JL Fuchs: Somatotopic representation of hindlimb skin in dorsal hom of cat. Soc. Neurosci. 3:207, 1973.

5. Tapper, DN., PB Brown, MD Mann, B Cogdell: Cells of origin of the cutaneous subdivision of the dorsal spinocerebellar tract. Physiologist 17:342, 1974.

6. Brown, Paul B., JL Fuchs, DN Tapper: Parametric analysis of physiological properties of cat dorsal horn cells responding to light touch. Soc. Neurosci. 4:154, 1974.

7. Yezierski, RP., JL Culberson, PB Brown: Cells of origin of propriospinal connections to cat lumbosacral gray matter, as determined with HRP. Soc. Neurosci. Abstr. 2:987, 1976.

8. Culberson, JL, DL Kimmel, PB Brown: Laterality of primary afferent distribution in the mammalian spinal cord. Anat. Rec. 184:385, 1976.

9. Brown, PB, GR Busch, J Whittington: Anatomical alteration of dorsal horn cells following partial deafferentation: results of cutting a single dorsal root. Fed. Proc. 36:537, 1977.

10. Brown, PB, HR Koerber: Cat hindlimb dermatomes with single-unit recording. Soc. Neurosci. Abstr. 3:477, 1977.

11. Koerber, HR, PB Brown: Somatotopic organization of the brachial cord of cat. Soc. Neurosci. Abstr. 3:485, 1977.

12. Brown, PB, RP Yezierski, HR Koerber: Cross-correlation analysis of connectivities among cell pairs 0.25 - 2 segments apart in cat lumbosacral dorsal horn. Soc. Neurosci. Abstr. 4:564, 1978.

13. Yezierski, RP, RT Gumbel, PB Brown: Online, real-time computer monitoring of single unit activity in the mammalian spinal cord. Soc. Neurosci. Abstr. 4:573, 1978.

14. Culberson, JL, PB Brown: Peripheral afferents to cat lumbosacral spinal cord. Anat. Rec. 193:163, 1978.

15. Culberson, JL, PB Brown: Projections of hindlimb dorsal roots to spinal cord of cat. Soc. Neurosci. Abstr. 5:705, 1979.

16. Koerber, HR, PB Brown: Somatotopic organization of dorsal horn projections of cutaneous nerve twigs. Soc. Neurosci. Abstr. 5:709, 1979.

17. Kukulinsky, DH, PB Brown: Hindlimb dermatomes of cat using averaging methods. Soc. Neurosci Abstr. 5:709, 1979.

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19. Brown, PB, HR Koerber: Somatotopy of presynaptic cutaneous neuropil in cat dorsal horn. Soc. Neurosci. Abstr. 6:435, 1980.

20. Koerber, HR, PB Brown: Calibration of spike amplitude profiles of cells in cat spinal cord laminae I-VI: a preliminary to characterization of cell types. Soc. Neurosci. Abstr. 6:438, 1980.

21. Brown, AG, PB Brown, REW Fyffe, LM Pubols: Effects of deafferentation on spinocervical tract neurones in the cat. J. Physiol. 310:105P, 1981.

22. Brown, AG, PB Brown, REW. Fyffe, LM Pubols: Responses of post-synaptic dorsal column neurones in the cat. J. Physiol. 319:106P, 1981.

23. Wirtz, GH, WJ Canady, PB Brown: The thermodynamic rationale of an alternative mechanism for the terminal events of complement hemolysis. Fed. Proc. 40:966, 1981.

24. Brown, AG, PB Brown, REW Fyffe, LM Pubols: Effects of deafferentation on spinocervical tract neurons in the cat. Soc. Neurosci. Abstr. 7:841, 1981.

25. Fyffe, REW, PB Brown, LM Pubols, AG Brown: Responses of postsynaptic dorsal column neurons in the cat. Soc. Neurosci. Abstr. 7:611, 1981.

26. Ritz, LA, JL Culberson, PB Brown: Somatotopic organization of cat spinal cord segments with fused dorsal horns. Soc. Neurosci. Abstr. 2:473, 1983.

27. Tapper, DN, PB Brown, LA Ritz.: Postsynaptic potentials of lamina 3, 4 neurons of the cat spinal cord evoked by single action potentials in slowly adepting type 1 (SA1) afferent fibers. Soc. Neurosci. Abstr. 10:485, 1984.

28. Ritz, LA, PB Brown: Projections of fibers from slowly-adapting Type I receptors to cat sacrocaudal spinal cord. Soc. Neurosci. Abstr. 11:220, 1985.

29. Brown, PB, LA Ritz: Anatomy of dorsal horn cells responsive to slowly adapting Type I input. Soc. Neurosci. Abstr. 11:219, 1985.

30. Kanungo, M, PB Brown: A general purpose algorithm for interval analysis. Med. Biol. Eng. and Comput. 23, Suppl 2:914-915, 1985.

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35. Brown, PB, R Sonty, R Millecchia, W Gladfelter, J Culberson: Somatotopy of cutaneous axons in cat dorsal horn laminae III-IV: Qualitative. Soc. Neurosci. Abstr. 14:693, 1988.

36. Sonty, R, PB Brown, R Millecchia, W Gladfelter, J Culberson: Somatotopy of cutaneous axons in cat dorsal horn laminae III-IV: Quantitative. Soc. Neurosci. Abstr. 14:693, 1988.

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40. Gladfelter, W, R Sonty, J Culberson, R Millecchia, R Ammar P Brown: Crossed dorsal horn cell dendrites. Soc. Neurosci. Abstr. 15:757, 1989.

41. Brown, PB, HR Koerber, GR Hobbs: Precision of cat dorsal horn somatotopic map. Soc. Neurosci. Abstr. 16:560, 1990.

42. Koerber, HR, K Mirnics, PB Brown LM Mendell: Sprouting and functional plasticity of spinal projections of regenerated primary afferents. Soc. Neurosci. Abstr. 18:133, 1992.

43. Millecchia, RJ, PB Brown: Assembly of dorsal horn cell cutaneous mechanoreceptive fields. Soc. Neurosci. Abstr. 19:327, 1993.

44. Brown, PB, RJ Millecchia, WE Gladfelter, JL Culberson, D Covalt-Dunning: Variation of dendritic morphology with map location in hindlimb dorsal horn. Soc. Neurosci. Abstr. 19:327, 1993.

45. Wang,L, R Millecchia, P B Brown: Variations of peripheral innervation density on the cat hindlimb. Soc. Neurosci. Abstr. 20:115, 1994.

46. Brown, P B, R Millecchia and L Wang: Correlation of dorsal horn map scale with peripheral innervation density. Soc. Neurosci. Abstr. 20:115, 1994.

47. Culberson, JL, R Millecchia, P B Brown: Innervation densities on the cat hindlimb. Soc. Neurosci. Abstr. 22:98, 1996.

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49. Brown, PB, RMillecchia, J Lawson, J L Culberson, S Stephens. A model of lamina III - IV cell receptive fields. Soc. Neurosci. Abstr. 22:98, 1996.

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51. Odom, JV, R Millecchia., P B Brown: Visualization of significant differences of cell properties in somatotopic maps. Soc. Neurosci. Abstr. 22:99, 1996.

52. Millecchia, R, P B Brown: Neural correlates of spatial discriminations in the dorsal horn. Soc. Neurosci. Abstr. 22:99, 1996.

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55. Millecchia, R, S Stephens, J Lawson, J Culberson, PB Brown, P Harton and L Hicks: Reconstruction of 2-D somatotrophy from 1-D CDPs. Soc. Neurosci. Abstr. 23:2342, 1997.

56. Stephens, S, R Millecchia, J Culberson, J Lawson, P Harton, M Fields, P B Brown: Unmasking of dorsal horn receptive fields by local anesthesia. Soc. Neurosci. Abstr. 23:2342, 1997.

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58. Lawson, J, R Millecchia, P Harton, J Culberson, M Miller, S Stephens, P Brown: Comparison of pre- and postsynaptic somatotopy in cat at the level of the dorsal horn. Soc. Neurosci. Abst. 24: 2079, 1998.

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61. Brown, PB, R Millecchia, J Lawson, J Culberson, P Harton: Spatial convergence and divergence between cutaneous afferent axons and dorsal horn cells are not constant. Soc. Neurosci. Abstr. 25:402;1999.

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65. Lawson, JJ, SL McIlwrath, PB Brown, R Millecchia, JL Culberson, HR Koerber. Recovery of two-point discrimination thresholds and dorsal horn cell receptive fields after peripheral nerve regeneration. Soc. Neurosci. Abstr. 587.14, 2003.

B. PEER REVIEWED PAPERS

1. Locke, S, P B Brown: Discontinuous decay of the action potential of the rat gastrocnemius as recorded from an intracellular location. J. Cell. Comp. Physiol. 65:255-260, 1965.

2. Goldberg, J M, PB Brown: Functional organization of the dog superior olivary complex: An anatomical and electrophysiological study. J. Neurophysiol. 31:639656, 1968.

3. Brown, P B: Response of cat dorsal horn cells to variations of intensity, location, and area of cutaneous stimuli. Exp. Neurol. 23:249-265, 1969.

4. Goldberg, J M, P B Brown: Response of binaural neurons of dog superior olivary complex to dichotic tonal stimuli: Some physiological mechanisms of sound localization. J. Neurophysiol. 32:613-636, 1969.

5. Brown, PB, DN Tapper: Applications of signal averaging to dorsal root recording. Brain Res. 25:87 - 102, 1971.

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7. Tapper, DN, PB. Brown, H Moraff: Functional organization of the cat's dorsal horn: Connectivity of myelinated fiber systems of hairy skin. J. Neurophysiol. 36:817-826, 1973.

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9. Brown, PB: An inexpensive mechanical stimulator incorporating a new optoelectronic device. IEEE Trans. Bio-Med Engr. BME-21:428-429, 1974.

10. Brown, PB, JLFuchs: Somatotopic representation of hindlimb skin in cat dorsal horn. J. Neurophysiol. 38:1-9, 1975.

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12. Tapper, DN, MD Mann, PB Brown, B Cogdell: Cells of origin of the cutaneous subdivision of the dorsal spinocerebellar tract. Brain Res. 85:59-63, 1975.

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15. Brown, PB, L Malhotra: A sixty hertz harmonic eliminator. IEEE Trans. Bio-Med. Eng. 25:392-397, 1978.

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25. Brown, PB, JL Culberson: Somatotopic organization of hindlimb cutaneous dorsal root projections to cat dorsal horn. J. Neurophysiol. 45:137-143, 1981.

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54. Koerber, HR, GR Hobbs, PB Brown: Precision and variability of hindlimb representation in cat dorsal horn and implications for tactile localization. J. Neurophysiol : 2489-2501, 1993.

55. Koerber, HR, K Mirnics, PB Brown, LM Mendell: Central sprouting and functional plasticity of regenerated primary afferents. J. Neuroscience 14:3655-3671, 1994.

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57. Brown, PB, R Millecchia, J L Culberson, W E Gladfelter, DC Dunning: Variation of dorsal horn cell dendrite spread with map scale. J. Comp. Neurol. 374:354-361, 1996.

58. Brown, PB, R Millecchia, RH Koerber: Assembly of the dorsal horn somatotopic map. Somatosensory & Motor Res. 14:93-106, 1997.

59. Wang, L, R Millecchia, PB Brown: Correlation of peripheral innervation density and dorsal horn map scale. J. Neurophysiol. 78:689-702,1997.

60. Brown, PB, R Millecchia: Visualization of significant differences in somatotopic maps: A distributed t-test. J. Neurosci. Meth. 77:9-24,1997.

61. Brown, PB, R Millecchia, J Lawson, S Stephens, P Harton JL Culberson: Dorsal horn spatial representation of simple cutaneous stimuli. J. Neurophysiol. 79:983-998,1998.

62. PB Brown, P Harton, R Millecchia, J Lawson, T Kunjara-Na-Ayudhya, S Stephens, M Miller, L Hicks, J Culberson: Spatial convergence and divergence between cutaneous afferent axons and dorsal horn cells are not constant. J. Comp. Neurol. 420:277-290, 2000.

63. Brown, PB, HR Koerber, R Millecchia. From innervation density to tactile acuity: 1. Spatial representation. Brain Res. 1011: 14 – 32, 2004.

64. Brown, PB, R Millecchia, JJ Lawson, AG Brown, HR Koerber, J Culberson, S Stephens. From Innervation density to tactile acuity 2: Embryonic and adult pre- and postsynaptic somatotopy in the dorsal horn. Brain Res. 1055: 36 – 59, 2005.

C. BOOKS AND BOOK CHAPTERS

1. Brown, PB, B Maxfield, H Moraff: Electronics for Neurobiologists. Cambridge, Mass.: The MIT Press, 1973.

2. Brown, PB, J Froelich, C Roby, J Marler: A general purpose algorithm for histogram generation. In: Computer Technology in Neuroscience (P.B. Brown, ed.), Washington, D.C.: Hemisphere/John Wiley, 1976.

3. Brown, PB, D Duffy, T McIntyre: Three computer interfaces. In: Computer Technology in Neuroscience (P.B. Brown, ed.), Washington, D.C.: Hemisphere/John Wiley, 1976.

4. Davidow, LS, PB Brown: A contour-mapping algorithm suitable for small computers. In: Computer Technology in Neuroscience (P.B. Brown, ed.), Washington, D.C.: Hemisphere/John Wiley, 1976.

5. Brown, PB: Computer Technology in Neuroscience. Washington, D.C.: Hemisphere/John Wiley, 1976.

6. Brown, PB, HR Koerber, JL Culberson: The somatotopic organization of primary afferent projection fields in cat dorsal horn. In: Spinal Cord Sensation: Sensory Processing in the Dorsal Horn. (AG Brown, M Rethelyi, eds.) Edinburgh: Scottish Academic Press, 1981.

7. Brown, PB, GN Franz, H Moraff: Electronics for the Modern Scientist. NY: Elsevier/North Holland, 1982.

8. Brown, PB, LA Ritz: Current source density mapping of dorsal horn responses to single spike input via single slowly adapting type I afferent fibers. In: Development, Organization, and Processing in Somatosensory Pathways (M Rowe and WD Willis, eds.) N.Y.:Alan Liss, 1985.

9. Tapper, DN, C Craig, PB Brown: Information transfer across laminae III-IV SAI network in dorsal horn. In: Development. Organization, and Processing in Somatosensory Pathways. (M. Rowe and M.D. Willis, eds.) N.Y.: Alan Liss, 1985.

10. Brown, PB: A reassessment of evidence for primary afferent sprouting in the dorsal horn. In: Effects of Injury on Trigeminal and Spinal Somatosensory Pathways. (L.M. Pubols and B.J. Sessle, eds.). NY: Alan Liss, 1987.

11. Pubols, LM, Hirata, H, PB Brown: Chronic spinal cord hemisection increases the response of dorsal horn neurons to natural and electrical stimulation. In: Effects of Injury on Trigeminal and Spinal Somatosensory Pathways (L.M. Pubols and B.J. Sessle, eds.). NY: Alan Liss, 1987.

12. Pubols, LM, Simone, DA, Atkinson, J, Hirata, H, PB Brown: Physiological correlates of spinal shock and recovery of function following partial spinal cord transection. In: Advances in Neural Regeneration Research: The Third International Neural Regeneration Research Symposium. (F.J. Seil, ed.). NY: Alan Liss 1988.

13. Brown, PB, Koerber, HR, LA Ritz: Somatotopic Organization of Primary Afferent Projections to Dorsal Horn. In: Sensory Neurons: Diversity, Development and Plasticity. (S.A. Scott, ed.) NY: Oxford, 1992.

14. Brown, PB: Chapter 3: Neurophysiology. In: Fundamental Neuroscience. (D. Haines et al.). NY: Churchill Livingstone, 1997.

CURRICULUM VITAE

Name: **Vincent Castranova**

Home Address: 40 Loch Haven Drive
Morgantown, WV 26508

Home Phone: (304) 594-1620

Home E-mail: castranovav@gmail.com

Professional Positions:
Research Faculty, 1976-77, Yale University
Research Physiologist, 1977-83 NIOSH
Assistant Professor of Physiology, 1977-81, West Virginia University
Associate Professor of Physiology, 1981-85, West Virginia University
Chief, Biochemistry Section, 1983-1995, NIOSH
Professor of Physiology, 1985- 2008, West Virginia University
Actg. Chief, Pathology Section, l989-1994, NIOSH
Chief, Pathology and Physiology Research Branch, 1995-2014, NIOSH
Acting Director, Health Effects Laboratory Division, 1996, NIOSH
Professor of Pharmaceutical Sciences, 1996-2019
School of Pharmacy, West Virginia University
CDC Distinguished Fellow, 1999-2000
CDC Distinguished Consultant, 2000-2014
Professor of Environmental and Occupational Health, 2002-2019
School of Public Health, University of Pittsburgh
Visiting Scientist, Dept. of Environmental Health, Harvard TH Chan School of Public Health, 2014-2019

Business Address: Department of Pharmaceutical Sciences
School of Pharmacy
RC Byrd Health Sciences Center
West Virginia University
Morgantown, WV 26505

Business Phone: (304) 594-1620
E-mail: castranovav@gmail.com

Education:

Undergraduate: Mount Saint Mary's College, Emmitsburg, MD
Degree (B.S.), 1966-70

Graduate: Dept. of Physiology and Biophysics, West Virginia University
School of Medicine, Morgantown, WV, Degree (Ph.D.), 1970-74.

Postdoctoral: Dept. of Physiology, Yale Univ. Schl of Medicine, New Haven, CT,
Professor J.F. Hoffman - Advisor, 1974-76.

Professional Organizations:

Society of Toxicology
Allegheny-Erie Regional Chapter of SOT

Honors and Scholastic Organizations:

Sigma Xi
National Institutes of Health Postdoctoral Fellowship (1974-76)
Mt. St. Mary's College Honor Society (Member)
Mt. St. Mary's College Biology Society (Member, Secretary and President)
Delta Epsilon Sigma - National Honor Society of Catholic Universities and Colleges (Member)
Beta, Beta, Beta - National Biology Honor Society (Member)
Alpha Mu Gamma - National Foreign Language Honor Society (Member)
Mt. St. Mary's College Academic Committee (1969-1970)
Graduated top 3% of college class
Graduated Magna cum Laude from college
Teacher of the Year in WVU Dental School, (1989)
Nominated for Scientist of the Year in CDC (1989)
President-elect, Allegheny-Erie Regional Chapter of Society of Toxicology (1995-1996)
President, Allegheny-Erie Regional Chapter of Society of Toxicology (1996-1997)
Member, American Catholic Academy of Sciences (1998-)
CDC Distinguished Fellow (1999-2000)
CDC Distinguished Consultant (2000-)
NIOSH Nominee for the CDC Lifetime Scientific Achievement Award, 2001
President, Occupational Health Specialty Section, SOT, 2003-04
Vice-President, Inhalation and Respiratory Specialty Section, SOT, 2008-09
President, Inhalation and Respiratory Specialty Section, SOT, 2009-2010
CDC Lifetime Scientific Achievement Award, 2008
ACGIH, Herbert E. Stokinger Award for outstanding achievement in industrial toxicology, June 2009
American Thoracic Society Assembly on Environmental & Occupational Health Val Vallyathan Senior Investigator Award, May 2012
Inhalation and Respiratory Specialty Section/SOT Career Achievement Award, March. 2013
ACGIH, Herbert E. Stokinger Award for outstanding achievement in industrial Toxicology, May 2019
Inhalation and Respiratory Specialty Section/SOT – Paper of the Year 2015

Patents: #5,096,733 issued 03/17/92 - Organosilane coatings to reduce the toxicity of silicate dusts

Invited Seminars:

1. "Properties of Membrane Transport in Dog Red Blood Cells." Department of Physiology, University of South Florida, 1977

2. "Properties of Membrane Transport in Dog Red Blood Cells." Department of Physiology, San Diego State University, 1977

3. "Superoxide Production from Alveolar Macrophages." Department of Physiology, State University of New York at Buffalo, 1978

4. "Potential Dependence of Anion Transport in Dog, Cat and Human Red Blood Cells." Research Institute, Hospital for Sick Children – Toronto, 1978

5. "Membrane Potential Changes Associated with Superoxide Secretion from Human Granulocytes." Department of Physiology, Yale University, 1978

6. "Transmembrane Potential Shifts Associated with Phagocytosis by Alveolar Macrophages." Department of Microbiology, West Virginia University, 1980

7. "Stimulus-Secretion Coupling in Human Granulocytes: A Rebuttal." Department of Biochemistry, West Virginia University, 1981

8. "Stimulus-Secretion Coupling Associated with Superoxide Release from Human Polymorphonuclear Leukocytes." Department of Physiology, Wayne State University, 1982

9. "Properties of Alveolar Type II Epithelial Cells in Suspension." American Thoracic Society, 1982

10. "Effect of Cotton Dust on Alveolar Macrophages." Department of Microbiology, West Virginia University, 1983

11. "Transport Properties of Alveolar Type II Epithelial Cells." National Asthma Center, National Jewish Hospital, 1984

12. "Transport Properties of Alveolar Type II Epithelial Cells." Cardiovascular Research Institute, Univ. of California at San Francisco, 1984

13. "Transport Properties of Alveolar Type II Epithelial Cells." Division of Pulmonary Disease, University of North Carolina, 1984

14. "The Alveolar Type II Epithelial Cell: A Multifunctional Pneumocyte." Society of Toxicology, Inhalation Specialty Section Symposium, 1986

15. "The Alveolar Type II Epithelial Cell: A Multifunctional Pneumocyte." Department of Physiology, State University of New York at Buffalo, 1986

16. "Introduction to Pulmonary Physiology." Science Department, Alderson Broaddus College, 1987

17. "Function of Pulmonary Alveolar Cells." Department of Medicine - Pulmonary Division, West Virginia University, 1987

18. "An Animal Model of Byssinosis." Institute of Occupational Medicine, Beijing, China, 1988

19. "An Animal Model of Byssinosis." Department of Pharmacology and Toxicology, West Virginia University, 1988

20. "Phagocytic Activity of Pulmonary Alveolar Macrophages." Department of Medicine/Pulmonary Division, West Virginia University, 1989

21. "Effects of Tetrandrine on Lung Cells" School of Pharmacy, West Virginia University, 1989

22. "Silicosis: Evaluation of Possible Mechanisms for the Development of Fibrosis." School of Medicine, West Virginia University, 1989

23. "Silicosis: Evaluation of Possible Mechanisms for the Development of Fibrosis." Proctor and Gamble, Cincinnati, Ohio, 1989

24. "How are Macrophages Involved in the Pathogenesis of Occupational Disease?" School of Public Health, Harvard University, 1990

25. "Taurine as a Possible Antioxidant in the Lung." Dept. of Anatomy, University of Arizona, 1990

26. "A Survey of Pulmonary Responses to Occupational Dusts." Health Sciences Center, West Virginia University, 1991

27. "Taurine as a Possible Antioxidant in the Lung." School of Pharmacy, West Virginia University, 1992

28. "Importance of Particle Characteristics in Silica-Related Pathology." Mini-Course - Silica Pathology & Cellular Mechanisms, San Francisco, 1993

29. "Environmental Health in the Workplace: Interactions between NIOSH and WVU." West Virginia University and the Environment, 1995

30. "Effect of Tetrandrine on the Pulmonary Response to Tetrandrine." Dept. Of Medicine, West Virginia University, 1995

31. "The Influence of Surface Radicals on the Toxicity of Silica." Collaboratories: Technological Approaches for Geographical Information, Molecular Modeling and Educational Practices. West Virginia University, 1995

32. "Development of Lung Tumors in Rats Exposed to Diesel Exhaust: Pro and Con and the Mechanism of Overload." American Occupational Health Conference. San Antonio, April, 1996

33. "Mechanisms Involved in the Development of Silicosis." School of Pharmacy, West Virginia University, Fall 1996

34. "NO Production from Lung Cells in Response to Occupational Exposure." University of Pittsburgh, School of Public Health, 1998

35. "Silica-induced NO Production in Lung Cells."University of Texas at Houston, 1998

36. "Silica-induced NO Production in Lung Cells."University of Texas at Galveston, 1998

37. "Silica-induced NO Production in Lung Cells."School of Pharmacy, WVU, 1998

38. "Fiber Toxicity."Harvard University, School of Public Health, 1998

39. "Effect of Fiber Length on Toxicity and Activation of Macrophages." New York University, Dept. of Environmental Health,1999.

40. "Effect of Fiber Length on Toxicity and Activation of Macrophages." University of Pittsburgh, School of Public Health, 2000.

41. "Effect of Fiber Length on Toxicity and Activation of Macrophages." University of Montana, Center for Environmental Health Sciences, 2001.

42. "Silica Induction of Signaling Pathways - Initiation of Pulmonary Inflammation and Cellular Proliferation." Medical College of Wisconsin, 2001

43. "Role of Nitric Oxide in Pulmonary Inflammation Resulting from Silica or LPS plus Interferon γ." New York University, School of Public Health. 2002

44. "Signaling Pathways for Silica-induced Pulmonary Toxicity." West Virginia University, School of Pharmacy, 2003

45. "Pulmonary Response to 1-3-B-Glucan Exposure: Role of Solubility and Confirmation." American College of Toxicology, Palm Springs, Nov. 9, 2004

46. "Toxicity of Ultrafine Particles." Northwest Occupational Health Conference, Portland, Oct. 13, 2004

47. "Toxicity of Ultrafine Particles." NASA, January 19, 2005

48. "Role of Nitric Oxide in Pulmonary Inflammation." University of Pittsburgh, School of Public Health, February 10, 2005

49. "Role of Nitric Oxide in Pulmonary Inflammation." Environmental and Occupational Health Sciences Institute, Rutgers University, April 28, 2005

50. "General Toxicological Issues of Potential Concern with Nanoparticles, An Overview." at Nanotechnology; The building block for tomorrow's advanced technology. The University of Western Australia, Perth, Australia, July 18, 2005

51. "Toxicity of Ultrafine Particles." Australian Institute for Bioengineering and Nanotechnology, University of Queensland, Brisbane, Australia, July 13, 2005

52. "Pulmonary Toxicity of Single Walled Carbon Nanotubes" and "Toxicity of ultrafine particles." Centre for Nanoscience and Nanotechnology, University of Melbourne, Melbourne, Australia, July 14, 2005

53. "Toxicity of Ultrafine Particles." Ian Wark Research Institute, University of South Australia, Adelaide, Australia, July 25, 2005

54. "Pulmonary Toxicity of Single Walled Carbon Nanotubes" and "Microvascular Dysfunction Resulting from Pulmonary Exposure to Particles." Research School of Physical Sciences and Engineering, Australian National University, Canberra, Australia, July 27, 2005

55. "Health Issues for Nanoparticles and Nanotubes." Australian National Council Nanotechnology Network, Canberra, Australia, July 25, 2005

56. "Pulmonary Toxicity of Single Walled Carbon Nanotubes" and "The Influence of Fiber Length on toxicity." National Industrial Chemicals Notification and Assessment Scheme, Sydney, Australia, July 29, 2005

57. "Pulmonary Toxicity of Single Walled Carbon Nantotubes." Oak Ridge National Laboratory, Oak Ridge, TN, June 24, 2005

58. "Pulmonary Toxicity of Single Walled Carbon Nanotubes." Korea Toxicology Society, Seoul, Korea, May, 2005

59. "The Role of Reactive Oxygen and Nitrogen Species in Signaling Pathways for Silica-induced Responses." Korea Physiology Society, Seoul, Korea, May, 2005

60. "Nanotechnology Safety and Health Research in NIOSH." Korean Occupational Safety and Health Administration, Korea, May, 2005

61. "Role of Nitric Oxide in Pulmonary Inflammation." Ewha Womans University, Seoul, Korea, May, 2005

62. "Microvascular Dysfunction Resulting from Pulmomary Exposure to Particles." Asan Medical College, Seoul, Korea, May, 2005

63. "Microvascular Dysfunction Resulting from Pulmonary Exposure to Particulate Matter." 2005 Conference on The Application of Systems Biology Methodologies to Environmental Research. Morgantown, WV, Aug. 1, 2005

64. "Pulmonary Response to Aspiration of Single-walled Carbon Nanotubes". The

Ohio State University Nanotechnology Research Center, Feb. 23, 2006

65. "Pulmonary Toxicology Studies with Nanoparticles: Experimental Issues." Informa Learning's Conference on Nanoparticles, Cambridge, MA, April 25, 2006

66. "Nanotoxicology Research in NIOSH." American Industrial Hygiene Conference, Chicago, IL, May 16, 2006

67. "Nanotoxicology Research in NIOSH." Nanobusiness '06, New York, NY, May 19, 2006

68. "Nanotechnology Safety and Health Research in NIOSH." EPA, Research Triangle Park, NC, July 25, 2006

69. "Toxicology of Ultrafine Particles." Nanotox Consortium, University of Kentucky, Lexington, KY, Sept. 19, 2006

70. "Pulmonary Effects of Single-walled Carbon Nanotubes." Wright Patterson Air Force Laboratory, Dayton, OH, Oct. 31, 2006

71. "NIOSH Nanotechnology Safety and Health Research Program." Wright Patterson Air Force Laboratory, Dayton, OH, Oct. 31, 2006

72. "Effects of Exposure to Diesel Exhaust Particles on the Susceptibility of the Lung to Infections" Division of Infectious Diseases, West Virginia University, Nov. 21, 2006

73. "Effects of Exposure to Diesel Exhaust Particles on the Susceptibility of the Lung to Infections." Department of Pediatrics, West Virginia University, Dec. 14, 2006

74. "Nanotoxicology Research in NIOSH." NANOMIST Workshop, London, England, Nov. 15, 2006

75. "Nanotoxicology Research in NIOSH." Toxicology Forum, Washington, DC, Jan.30, 2007

76. "Inhalation of Ultrafine Titanium Dioxide Augments Particle-dependent Microvascular Dysfunction." Second Nanotoxicology Conference. Venice, Italy, April 20, 2007

77. "Pulmonary Effects of Single-walled Carbon Nanotubes." University of Arizona, April 17, 2007

78. "Comparison of Pulmonary Responses to Single-walled vs Multi-walled Carbon Nanotubes." Society of Toxicology. Charlotte, NC, March 26, 2007

79. "Cardiovascular Effects of Pulmonary Exposure to Nanoparticles." Toxicology and Risk Assessment Conference. Cincinnati, OH, April 25, 2007

80. "Nanotechnology Research in NIOSH." Northeastern Chapter of the American Industrial Hygiene Association, Cleveland, OH, May 8, 2007

81. "Nanotoxicology Research in NIOSH." NASA Glenn. Cleveland, OH, May 8, 2007

82. "Nanotoxicology Research in NIOSH." American Industrial Hygene Conference, Philadelphia, PA, June 5, 2007

83. "Nanotoxicology Research in NIOSH." West Virginia Universitry Cancer Center, Morgantown, WV, Feb. 21, 2007

84. "Critical Toxicity Parameters for Nanoparticles vs Conventional Particles." Dept. of Occupational Medicine, West Virginia University, Aug 28, 2007

85. "Critical Toxicity Parameters for Nanoparticles vs Conventional Particles." Dept. of Physiology, West Virginia University, Aug 30, 2007

86. "Inhalation of Ultrafine Titanium Dioxide Augments Particle-dependent Microvascular Dysfunction." Center for Environmental Health, University of Montana, Sept 21, 2007

87. "What Do We Know about Exposure and Human Health Effects of Nanoparticles." 25th Annual Scientific Conference of the Occupational and Environmental Medical Association of Canada. Banff, Canada, Oct 15-16, 2007

88. "Critical Toxicology Parameters for Nanoparticles vs Conventional Particles." Bringing Toxicology to Globial Issues in Occupational and Environmental Public Health. Louisville, KY, Oct 18, 2007

89. "Biological Effects of Nanoparticles." State-of-the-Art Conference/ICOH, Vancouver, Canada, Oct 26-28, 2007

90. "NIOSH Nanomaterials Research Activities." ILSI Naonmaterials EHS Project Committee, Washington, DC, Nov 8, 2007

91. "Critical Toxicity Parameters for Nanoparticles vs Conventional Particles." 2007 Nanotechnology and Occupational Health and Safety Conference, Santa Barbara, CA, Nov 16-17, 2007

92. "NIOSH Nanotoxicology Research." European NanOSH Conference - Nanotechnologies: A Critical Area in Occupational Safety and Health. Helsinki, Finland, Dec 3-5, 2007

93. "The Nanotoxicology Research Program in NIOSH." NIST. Jan. 28, 2008

94. "Nanotoxocology Research in NIOSH." AIHA's Distance Learning Program: Nanotechnology Update for IHs. Jan 31, 2008

94. "Pulmonary Toxicity of Single Walled Carbon Nanotubes." University of Washington, Seattle, WA, Feb. 21, 2008

95. "Systemic Microvascular Effects of Pulmonary Exposure to Fine vs Ultrafine Particles." University of Connecticut, Storrs, CT, April 7, 2008

96. "Effect of Exposure to Diesel Exhaust Particles on the Susceptibility of the Lung to Infection." The Feinstein Institute for Medical Research, Manhasset, NY, April 8, 2008

97. "Intratracheal Instillation of Rats to Ultrafine T_iO_2 or Ultrafine Carbon Black." Health and Environmental Sciences Institute, Washington, DC, May 8, 2008

98. "Pharyngeal Aspiration vs Inhalation Exposure of Mice to MWCNT." Health and Environmental Sciences Institute, Washington, DC, May 8, 2008

99. "Critical Toxicity Parameters for Nanoparticles vs Conventional Particles." Northern California Industrial Hygiene Society, Palo Alto, CA, May 14, 2008

100. "NIOSH Nanotoxicology Research: Biological Activity of Single-walled Carbon Nanotubes." Am. Industrial Hygiene Conference, Minneapolis, MN, June 3, 2008

101. "NIOSH Naontoxicology Program." Am. Industrial Hygiene Conference, Minneapolis, MN, June 4, 2008

102. "Systemic Microvascular Effects of Pulmonary Exposure to Fine vs Ultrafine Particles." Johns Hopkins University, Baltimore, MD, June 10, 2008

103. "The Ability of *In Vitro* Tests to Predict Pulmonary Responses to SWCNT." Johns Hopkins University, Baltimore, MD, June 11, 2008

104. "Comparison of *In Vitro*, Pharyngeal Aspiration, and Inhalation Results for Single-walled Carbon Nanotubes." Society of Toxicology Meeting, Seattle, WA, March 20, 2008

105. "Ambient Particulates and/or Nanoparticles: Cardiovascular and Pulmonary Toxic and Morphologic Manifestations." 9th International Conference on Particles: Risks and Opportunities, Sept. 2-5, 2008

106. "Systemic Microvascular Effects of Pulmonary exposure to Particles." Harvard School of Public Health, Oct. 24, 2008

107. "Pulmonary Effects of SWCNT." Harvard School of Public Health, Oct. 23, 2008

108. "Comparison of In Vitro, Pharyngeal Aspiration and Inhalation Results for Single-walled Carbon Nanotubes." Am. Indus. Hygiene Assoc. Distance Learning Program, "Toxicology of Engineered and Incidential Nanoparticles". Jan. 27, 2009

109. "The Nanotoxicology Research Program in NIOSH." Nanotoxicology Specialty Section, SOT, Baltimore, MD, March 22, 2009

110. "The Nanotoxicology Research Program in NIOSH." EPA, Washington, DC May 27, 2009

111. "Systemic Microvascular Dysfunction following Pulmonary Exposure to Fine vs. Ultrafine T_iO_2." EPA, Washington, DC, May 27, 2009

112. "Critical Toxicity Parameters for Nanoparticles vs. Conventional Particles." Cermacs Meeting, Cleveland, OH, May 21, 2009

113. "Systemic Microvascular Dysfunction following Pulmonary Exposure to Fine vs. Ultrafine T_iO_2." WV Nano 2009, Morgantown, WV, May 11, 2009

114. "Elongated Nanoparticles – How They Resemble and Differ from Asbestos." Interagency Asbestos Working Group, Atlanta, GA, April 22, 2009

115. "Systemic Microvascular Dysfunction following Pulmonary Exposure to Fine vs. Ultrafine T_iO_2." American Industrial Hygiene Conference and Expo, Toronto, Canada, June 4, 2009.

116. "Elongated Nanoparticles – How They Resemble and Differ from Asbestos." Nanofiber 2009, Tokyo, Japan, June 19, 2009.

117. "Pulmonary Response to MWCNT Exposure." Nanofiber Extended Workshop, Nagano, Japan, June 22, 2009.

118. "NIOSH Nanotoxicology Research: Biological Activity of Single-walled Carbon Nanotubes." Toxicology Forum, Aspen, CO, July 16, 2009.

119. "Potential Pulmonary Effects of Single-walled Carbon Nanotube (SWCNT) Exposure: In Vitro Genotoxic Effects". 10th International Conference on Environmental Mutagens, Florence, Italy, Aug 20, 2009.

120. "Effect of Pulmonary Exposure to Particles on Systemic Microvascular Response". University of Roma, Aug 24, 2009.

121. "Pulmonary Response to Pharyngeal Aspiration of Multi-walled Carbon Nanotubes in Mice". 4th International Conference on Nanotechnology: Occupational and Environmental Health, Helsinki, Finland, Aug 28, 2009.

122. "Possible Health Implications of Nanotechnology". Catholic Academy of Science in the United States, Sept 26, 2009.

123. "Pulmonary Responses to MWCNT Exposure". Dept. of Environmental and Occupational Health, University of Pittsburgh, Pittsburgh, PA, Nov. 22, 2009.

124. "Systemic Microvascular Response to Pulmonary Exposure to Particles". NASA, Houston, TX, Dec 8, 2009.

125. "Pulmonary Responses to MWCNT Exposure". UCLA, Los Angeles, CA, Feb 9, 2010.

126. "Developing Risk Characterization Information to Determine and Classify Nanomaterials Based on Physical and Chemical Properties". NNI Capstone Workshop, Arlinton, VA, March 30, 2010.

127. "Hazard Assessment of Nanomaterials: Why Is It so Challenging?". CDC Public Health Grand Rounds, Atlanta, GA, April 15, 2010.

128. "Pulmonary Response to Pharyngeal Aspiration of Multi-walled Carbon Nanotubes in Mice". American Association for Cancer Research Conference, Washington, DC, April 17, 2010.

129. "Effect of Pulmonary Exposure to Particles on Systemic Microvascular Response". NTRC Workshop, Wheeling, WV, April 19, 2010.

130. "Risk Assessment Strategy for Nanoparticles: Multi-walled Carbon Nanotubes as a Test Case". Conference on Workplace Aerosols.. Karlsruhe, Germany, July 2, 2010.

131. "Pulmonary Response to Pharyngeal Aspiration of Multi-walled Carbon Nanotubes in Mice". NIST, Boulder, CO, July 20, 2010.

132. "Overview of Current Toxicological Knowledge of Engineered Nanoparticles", Nanomaterials and Worker Health: Medical Surveillance, Exposure Registries, and Epidemiologic Research Conference, Keystone, CO, July 21, 2010.

133. "Risk Assessment Strategy for Nanoparticles: Multi-walled Carbon Nanotubes as a Test Case", ORC Worldwide Occupational Safety and Health Group and Corporate Health Directors Network Meeting, Washington, DC, August 4, 2010.

134. "Overview of Current Toxicological Knowledge of Engineered Nanoparticles", 5th International Conference on the Environmental Effects of Nanoparticles and Nanomaterials: 2110, Clemson, SC, August 23, 2010.

135. "Elongated Nanoparticles: How They Resemble and Differ from Asbestos". Columbia University, New York, NY, November 4, 2010.

136. "Pulmonary Response to Pharyngeal Aspiration of Multi-walled Carbon Nanotubes in Mice. SUNY-Stony Brook, Stony Brook, NY, November 9, 2010.

137. "Pulmonary and Systemic Responses to Carbon Nanotubes". SOT Meeting, Washington, DC, March 9, 2011.

138. "The Effect of Agglomerate Structure Size on the Bioactivity of Nanoparticles". SOT Meeting, Washington, DC, March 9, 2011.

139. "Nanotechnology Research in NIOSH". US-EU Nanotoxicology Workshop, Washington, DC, March 10, 2011.

140. "Risk Assessment and Development of a Recommended Exposure Limit for Carbon Nanotubes by NIOSH". Harvard School of Public Health, Boston, MA, April 7, 2011.

141. "Overview of Current Toxicological Knowledge of Engineered Nanoparticles". NPPTL/NIOSH, Bruceton, PA, April 21, 2011.

142. "Responses to Pulmonary Exposure to Nanoparticles". Nanoparticles: Tools for Toxicology, The Toxicology Forum and the Regulatory Governance Initiative, Ottawa, Canada, May 2, 2011.

143. "Risk Assessment and Development of a Recommended Exposure Limit for Carbon Nanotubes by NIOSH". Health Canada, Ottawa, Canada, May 2, 2011.

144. "Responses to Pulmonary Exposure to Nanoparticles in NIOSH Animal Studies". Medichem: Occupational Health in a Changing World, Heidelberg, Germany, June 4, 2011.

145. "Cardiovascular Effects of Pulmonary Exposure to Nano or Fine Particles". 7th International Symposium on Modern Principles of Air Monitoring and Biomonitoring, Loen, Norway, June 20, 2011.

146. "Overview of Currect Toxicological Knowledge of Engineered Nanoparticles". 5th International Symposium on Nanotechnology, Occupational and Environmental Health. Boston, MA, August 9, 2011.

147. "Potential Pulmonary Effects of Single-walled Carbon Nanotube (SWCNT) Exposure: In Vitro Genotoxic Effects". 5th International Symposium on Nanotechnology, Occupational and Environmental Health. Boston, MA, August 10, 2011.

148. "Responses to Pulmonary Exposure to Nanoparticles in NIOSH Animal Studies". ESF Symposium: Nanocarbons 2011. Acquafredda di Maratea, Italy, September 6-11, 2011.

149. "Critical Issues for Future Research in Nanotoxicology". 2nd Naon-Symposium. Harvard School of Public Health, Boston, MA, June 13, 2012.

150. "Critical Issues for Future Research in nanotoxicology". Safe Nano Design.State University of New York at Albany, Albany, NY, Aug.15, 2012.

151. "Characterization of Responses to Carbon Nanotubes and Carbon Nanofibers". European Aerosol Conference. Granada, Spain, Sept. 3, 2012.

152. "Toxicology Challenges of Grouping Nanomaterials". Strategies for Setting Occupational Exposure Limits for Engineering Nanomaterials. Washington, DC, Sept. 10, 2012.

153. "Responses to Pulmonary Exposures to Nanoparticles in NIOSH Animal Studies". The Sustainable Nanotechnology Organization Conference. Arlington, VA, Nov. 5, 2012.

154. "Respiratory and Cardiovascular Responses to Pulmonary Exposure to Nanoparticles: Comparison of Bolus vs. Inhalation Exposure". Alternative Testing Strategies for Carbon Nanotubes and Other Modes of Nanomaterial Toxicity. Los Angeles, CA, Jan. 16-17, 2013.

155. "NIOSH Sub-Acute Inhalation Studies" NEHI/NNI, Arlington, VA, Feb. 28, 2013.

156. "Cardiovascular Responses to Particulate Matter and Nanoparticles". SOT Continuing Education Course: Recent Developments in Cardiovascular

Physiology-Based Toxicology. San Antonio, TX, March 10, 2013.

157. "Cardiovascular Responses to Pulmonary Inhalation of Nanoparticles". SOT. San Antonio, TX, March 11, 2013.

158. "Nanotechnology Research in NIOSH". SOT. San Antonio, TX, March 13, 2013.

159. "Cardiovascular Responses to Pulmonary Inhalation of Nanoparticles". Regional AAPS Meeting and Research Forum. Morgantown, WV, May 3, 2013.

160. "Physical Chemical Properties of Particles which Drive Health Effects upon Inhalation". Airborne Mineral Dust Contaminants: Impacts on Human Health and the Environment Workshop. Tucson, AZ, May 20, 2013.

161. "NIOSH Sub-Acute Inhalation Studies with MWCNT". Harvard School of Public Health. Boston, MA, June 24, 2013.

162. "NIOSH Sub-Acute Inhalation Studies with MWCNT". Inhaled Particles XI. Nottingham, England, Sept. 25, 2013.

163. "NIOSH Sub-Acute Inhalation Studies with MWCNT". 6th International Symposium on Nanotechnology Occupational and Environmental Health. Nagoya, Japan Oct.30, 2013.

164. "Nanotoxicology, Cardiovascular Toxicology, and Inhalation Toxicology Programs in NIOSH", JNIOSH, Tokyo, Japan, Nov. 1, 2013.

165. "The Nanotoxicology Program in NIOSH". 32th Conference of the Association of Chinese Professionals in West Virginia, Morgantown, WV, Nov. 16, 2013.

166. "Cardiovascular Effects of Pulmonary Exposure to Particles". Northeast Industrial Hygiene Conference, Princeton, NJ, Dec. 6, 2013.

167. "The New Science and Research Collaboration". West Virginia University Cancer Center. Morgantown, WV, Jan. 17, 2014.

168. "Categorization of Nanoparticles for Development of Rapid Screening of Bioactivity". NanoSAFE 2014. Morgantown, WV, April 26-28, 2014.

169. "Physical Chemical Properties of Particles which Drive Effects upon Inhalation". AE-SOT. Morgantown, WV, May 15, 2014.

170. "The Nanotoxicology Program in NIOSH". TechConnect World 2014. National Harbor, MD, June 16, 2014.

171. "Sub-acute Inhalation Studies with MWCNT". Harvard School of Public Health. Boston, MA, Nov. 5, 2014.

172. "Nanotechnology: What Is It and How to Make It Safe?" WVU NANOSAFE Science on Tap. Morgantown, WV, Nov. 12, 2014.

173. "Sub-acute Inhalation Studies with MWCNT". University of Pittsburgh School of Public Health. Pittsburgh, PA, Nov.19, 2014.

174. "Carbon Dioxide: Current Standards and Physiologic Responses". NASA, Houston, TX, Dec. 11, 2014.

175. Invited workshop participant: "Design of an In Vitro System to Asssess the Inhalation Toxicity of Nanomaterials". Washington, DC. Feb. 24-25, 2015.

176. "Collaborative Research to Identify Potential Nanoparticle Exposure during Consumer Use of Nano-Enabled Products". Regional Pharmacy Research Forum. Morgantown, WV, June 18-19, 2015.

177. "Characterization of an Aerosol Generated during Application of a Nano-TiO2 Enabled Antimicrobial Spray Product to a Surface: Pulmonary and Cardiovascular Responses to Inhalation Exposure in Rats". Quantifying Exposure to Engineered Nanomaterials from Manufactured Products: Addressing Environmental, Health, and Safety Implications. Arlington, VA, July7-8, 2015.

178. "Potential Nanoparticle Exposure during Consumer Use of a Nano-enabled Product". Mid-Atlantic Chapter of the Am. Physical Science Society Meeting. Morgantown, WV, Oct. 23-25, 2015.

179. "Cardiovascular Responses to Particulate Matter and Nanoparticles". Toxicology Program, Pittsburgh School of Public Health, Pittsburgh, PA, Nov. 4, 2015.

180. "Proposed Amendments to OECD Subacute and Subchronic Inhalation Test Guidelines". US-EU Workshop – Bridging NanoEHS Research. Arlington, VA, June 6-7, 2016.

181. Member of a Panel Discussion on the Past, Present, and Future of Nanotoxicology. 8th International Congress on Nanotoxicology. Boston, MA, June 1-4, 2016.

182. "Use of Electron Paramagnetic Resonance (EPR) to Elucidate Pathologic Responses". EPR2017 Conference, Morgantown, WV, July 17-21, 2017.

183. "50 Years of Laboratory-Based Research at NIOSH/Morgantown". Recognizing Accomplishments and Planning for the Future. Morgantown, WV, August 10, 2017.

184. "Recent Advances in the Knowledge Base of Nanotoxicology: Pulmonary Responses to Carbon Nanotubes". Society of Toxicology Meeting, San Antonio, TX, March 20. 2018.

185. "Recent Advances in the Knowledge Base of Nanotoxicology: Pulmonary Responses to Carbon Nanotubes". AIHceExpo, Philadelphia, PA, May 21, 2018.

186. "Cardiovascular Responses to Particulate Matter and Nanoparticles". University of Pittsburgh, Nov. 7, 2018.

187. "Recent Advances in the Knowledge Base of Nanotoxicology: Pulmonary Responses To Carbon Nanotubes". Northeastern University, Dec. 11, 2018.

188. "Recent Advances in the Knowledge Base of Nanotoxicology: Pulmonary Responses To Carbon Nanotubes". AIHce, May 22, 2019.

Session Chairmanships and Committee Memberships:

1. Co-chairman of a session on "Blood Cell Membranes" at the FASEB Meeting, 1977, in Chicago IL
2. Co-chairman of a session on "Macrophages" at the FASEB Meeting, 1982, in New Orleans, LA.
3. Editorial Committee - "New Orleans Conference on Agricultural Dust", 1984.
4. Inhalation Toxicology Awards Committee - Toxicology Society Meeting, 1985.
5. Inhalation Toxicology Awards Committee - Toxicology Society Meeting, 1987.
6. Chairman of a session on "Mobilization of Intracellular Calcium and Its Actions" at the FASEB Meeting, 1987, in Washington, DC.
7. Co-chairman of a session on "Inflammatory Lung Cells" - Toxicology Society Meeting 1988.
8. Chairman of a session on "Animal Models of Pneumoconioses" - VIIth International Conference on Pneumoconioses, Pittsburgh, PA, 1988.
9. Co-chairman of a session of "Xenobiotic-Induced Changes in Hematopoietic/Phagocytic Cells" - Society of Toxicology Meeting, 1992.
10. Animals in Research Committee, Allegheny-Erie SOT, Member 1990; Chair 1993-1997
11. Executive Council, Allegheny-Erie SOT, 1993-1998

12. Co-Chair - Oxygen Radicals & Lung Injury Conf., Morgantown, WV, 8/30-9/2/93.
13. Animals in Research Committee, Society of Toxicology, Member, 1994; Chairman, 1995-1997
14. Councilor-Inhalation Specialty Section, Society of Toxicology, 1995-1997
15. Chairman of a session on "Inhaled Toxicology"- Society of Toxicology Meeting, 1995
16. Subcommittee on Community Outreach, Society of Toxicology, Chairman, 1996-1997.
17. Chairman of a session on "Respiratory Tract Toxicology: Mechanisms" - Society of Toxicology Meeting, 1998
18. Chairman of a session on "Respiratory Tract Toxicology: Methods and Safety Evaluation" - Society of Toxicology Meeting, 1999.
19. Chairman of a session on "Nanotoxicology" – Nanotechnology Occupational and Environmental Health and Safety: Research to Practice, 2006.
20. Chairman of a session on "Nano Cerium Oxide" SOT, 2013.
21. Chair of a session on "Nanotoxicology" AE-SOT, 2015.
22. Vice President AE-SOT, 2015-2016.

Reviewer:

Grants:
1. West Virginia Senate Grants
2. West Virginia Energy Research Center Grants
3. NIOSH Grants
4. Veteran's Administration Grants
5. West Virginia Respirable Dust Center Grants
6. Alberta Lung Association
7. University of Arizona Medical Center Grants
8. University of West Virginia Health Center Grants
9. University of West Virginia Cancer Center Grants
10. Dept. of Defense Grants, 2015
11. French Science Awards, 2015
12. NIOSH Project, 2015
13. Health Canada CMP Research Monitoring & Surveillance Program
14. Dept. of Defense Discovery Grants, June, 2019
15. Dept. of Defense Peer Reviewed Medical Research Program: Respiratory Health Effects, Sept. 2019

Study Section Member:

1. Health Effects Institute, 1995
   - Effects of Ambient Urban Airborne Particles on Health
2. Mickey Leland National Urban Air Toxics Research Center, 1998
   - Contributions of Metals in Ambient Particles to Particulate Associated Health Effects
3. NIH, 1998, 1999 - Respiratory Toxicology
4. EPA, 1999 - Particulate Matter in the Air
5. EPA, 2000 - Scientific Advisory Panel on "Test Guidelines for Chronic Inhalation Toxicity and Carcinogenicity of Fibrous Particles"
6. EPA - Science Review Board
7. EPA workshop on cancer risk assessment methodology for asbestos; San Francisco, CA; Feb. 24-27, 2003
8. Peer review of the research program of the Human Studies Division, EPA; Research Triangle Park, NC; March 2-5, 2003
9. Peer review of the Center for Environmental Medicine, Asthma, and Lung Biology, University of North Carolina research program for an EPA Cooperative Agreement renewal, April, 2007

Journals:
1. American Journal of Physiology
2. Experimental Lung Research
3. Journal of Cellular Physiology
4. Biochimica et Biophysica Acta
5. Federation Proceedings
6. Journal of Applied Physiology

7. In Vitro
8. Journal of Toxicology and Applied Pharmacology
9. American Review of Respiratory Disease
10. Journal of Electrophysiological Techniques
11. Journal of Laboratory and Clinical Medicine
12. Journal of Pharmacology and Experimental Therapeutics
13. Kidney International
14. Allergy & Clinical Immunology
15. Journal of Toxicology & Environmental Health
16. American Industrial Hygiene Association Journal
17. Journal of Immunological Methods
18. Environmental Health Perspectives
19. American Journal of Industrial Medicine
20. American Journal of Respiratory Cell and Molecular Biology
21. American Journal of Physiology: Lung Cellular and Molecular Physiology
22. Toxicological Sciences
23. Molecular and Cellular Biochemistry
24. Toxicology Letters
25. ACS Nano
26. Nanotoxicology

Other:

1. External reviewer for the National Research Council report for NASA, "Safe on Mars: Precursor Measurements Necessary to Support Human Operations on the Martian Surface."
2. Reviewer for the South African Research Council
3. External reviewer for the Australian National Occupational Health and Safety Commission "National exposure standard for crystalline silica."
4. Monograph group member for the International Agency for Research on Cancer entitled "Man-made Vitreous Fibers" IARC
5. External Advisory Committee for the Center for Environmental Health Sciences, Unviersity of Montana, 2005 - 2010.
6. EPA workgroup on in vitro assays for fiber toxicity; Washington, DC; March 6-7, 2003
7. EPA workshop on fiber toxicity, Chicago, IL, June, 2003
8. International Council on Nanotechnology strategic planning workshop, Washington, DC, Jan. 8-10, 2007.
9. External Advisory Committee for the CEMALB at the University of North Carolina, 2008- .
10. Member of the Office of Economic and Cultural Development Tash Group on Integration of Alternative Methods in Mammalial Toxicity Testing for Nanoparticles, 2009 - .
11. External Advisory Committee for the Nanotoxicology Program, Harvard School of Public Health, 2010 - .
12. Co-Chair Risk Management COR, NNI US-EU Nanotechnology Cooperative Research, 2014-.
13. External Advisory Committee for Harvard School of Public Health NIEHS Nanosafety Center, 2016-2020.

Editorial Board Member:

Annals of Agricultural and Environmental Medicine, 1994-2014
Journal of Toxicology and Environmental Health, 1997-2014
Journal of Environmental Pathology, Toxicology and Oncology - Guest Editor of a special issue on "Silica Toxicity and Silicosis", 2001
Toxicology and Applied Pharmacology, 2001 - 2014
Molecular and Cellular Biochemistry - CO-Guest Editor of a special issue "Molecular Mechanisms of Metal Toxicity and Carcinogenesis" – 2001
Particle and Fibre Toxicology, 2003 – 2014
Journal of Toxicology and Environmental Health – Guest Editor of a special

issue, Part 1, 67, 2004.
Nanoethics: The Ethics of Technologies that Converge at the Nanoscale 2008 - 2014
Molecular and Cellular Biochemistry – Co-Guest Editor of a special issue "Molecular Mechanisms of Metal Toxicity and Carcinogenesis" – 2005
The Open Public Health Journal, 2007- 2014
Inhalation Toxicology, 2008- 2014
Associate Editor, Particle and Fibre Toxicology, 2008- 2014
NanoImpact, 2015

Student Committees:

Member of the Graduate Faculty in the Department of Physiology and Department of Basic Parmaceutical Sciences
Member of the Graduate Training Program in the Department of Pharmacology and Toxicology

1. Dissertation Committee - T. Sweeney - 1979
2. Prelim Committee - C. Brogan - 1979
3. Dissertation and Prelim Committee - J.R. Wright - 1981 & 1979
4. Dissertation and Prelim Committee (Chairman)- G. Jones - 1981 & 1979
5. Prelim Committee - J. Morgan - 1979
6. Dissertation Committee - M. McNulty - 1981
7. Dissertation Committee - G. Toderrude - 1984
8. Dissertation and Prelim Committee - John Schultz - 1982
9. Dissertation and Prelim Committee - Gary Pekoe - 1981
10. Dissertation Committee - Frank Gerberick - 1981
11. Dissertation Committee - Jim Morgan - 1983
12. Dissertation Committee - Douglas Learn - 1985
13. Prelim and Dissertation Committee - Jim Sherry - 1981 and 1983
14. Prelim Committee (Chairman) - M. Van Scott - 1983
15. Thesis Committee - C. Heyneman - 1983
16. Thesis Committee - D. Peden - 1984
17. Thesis Committee - L. Edinboro - 1984
18. Dissertation Committee (Chairman) - M. Van Scott - 1984
19. Dissertation Committee - L. Sauers - 1986
20 Dissertation Committee - A. M. Ardekani - 1988
21. Dissertation Committee - T. Jones
22. Dissertation Committee (Chairman) - Ji Hee Kang
23. Thesis Committee (Chairman) - M. Moore - 1988
24. Dissertation Committee - J.D. Garcia - 1991
25. Dissertation Committee - D. Thomas - 1989
26. Dissertation Committee (Chairman) - R. Reist- 1993
27. Dissertation Committee - Ken Hershman - 1993
28. Dissertation Committee - Karen Woodfork - 1993
29. Thesis Committee - J. Gutierrez - 1991
30. Dissertation Committee - Jim Antonini - 1993
31. Dissertation Committee - Meenakshi Bhat - 1996
32. Dissertation Committee - Terri Blake - 1995
33. Thesis Committee - Maria Gutierrez - 1992
34. Dissertation Committee - De Hua Chao
35. Dissertation Committee - Chan Shia Chang - 1996
36. Dissertation Committee - Tracy Shahan - 1995
37. Dissertation Committee - Tim Miley - 1999
38. Dissertation Committee - Mike DeMatio
39. Dissertation Committee - Dawn Hunter
40. Dissertation Committee - Deepa Deshpande - 1996
41. Dissertation Committee - Tim Miley - 1999
42. Thesis Committee (Chairman) - Karen Hill - 1997
43. Dissertation Committee - Jun Shao - 1997
44. Dissertation Committee - Wewen Liang - 1998
45. Thesis Committee (Chairman) - Fernando Suarez, 1999
46. Dissertation Committee - Steve Leonard
47. Dissertation Committee - Nabil Al-Humadi

48. Dissertation Committee - Suwei Wang
49. Dissertation Committee (Chairman) - Patti Zeidler - 2003
50. Dissertation Committee (Chairman) - Rania Kanj - 2004
51. Dissertation Committee - Jim Scabilloni
52. Dissertation Committee - Zhuo Zhang
53. Dissertation Committee - Xiaodong Yang
54. Dissertation Committee - Dawn Hunter
55. Dissertation Committee - Mike Taylor
56. Dissertation Committee – Ashley Murray -2006
57. Dissertation Committee – Sung Gu Han
58. Dissertation Committee – Bin Lu
60. Dissertation Committee – Andrew Beadsley
61. Dissertation Committee – Leor Zellner
62. Dissertation Committee – Dovenia Ponnoth -2008
63. Dissertation Committee (chairman) – Jenny Roberts -2006
64. Dissertation Committee – Andrew Beardley -2006
65. Dissertation Committee – Cangzhuan Dong – 2006
66. Dissertation Committee – Yulia Iossifova – 2006
67. Dissertation Committee – Neelam Azad – 2007
68. Dissertation Committee – Deepak Bahtia – 2007
69. Dissertation Committee (Chairman) – Tina Sager – 2008
70. Dissertation Committee – Djoridje Medan – 2010
71. Dissertation Committee – Kevin Beezhold 2012
72. Dissertation Committee - Anuray Mishra 2013
73. Dissertation Committee – Amruta Mankea - 2015
74. Dissertation Committee – Katie Dunnick - 2015
75. Dissertation Committee – Amy Mihalchik - 2017
76. Dissertation Committee (Co-Chair) – Emily Desperoux - 2016
77. Dissertation Committee - Valerie Minarchik - 2015
78. Dissertation Committee – Katherine Roach - 2019
79. Dissertation Committee – Tiffany Kornberg - 2019
80. Masters Committee – Lindsey Bishop - 2016
81. Dissertation Committee – Kelly Frazer - 2021
82. Dissertation Committee (Co-Chair) – Janet Thompson- 2021
83. Dissertation Committee – Brandon Law
84. Dissertation Committee – Timur Khaliulin - 2020
85. Dissertation Committee – Mariana Farcus - 2021

Departmental Committees:

Speakers Committee 1978-83
Graduate Studies Committee 1986-91
Graduate Studies Committee (Chairman) 1987-88
Graduate Studies Committee 1996-2001
Budget Committee 2003- 2008
Promotion and Tenure Committee (Dept. Pharmaceutical Sciences) 2017-
Search Committee (Dept. Physiology & Pharmacology) 2017-
Pharmaceutical Sciences Faculty Evaluation Committee 2017
Pharmaceutical Sciences Faculty Search Committee 2017
Physiology and Pharmacology Faculty Search Committee 2017
School of Pharmacy Evaluation Committee 2017
School of Pharmacy Chair Search Committee – Chair, 2018

Medical Center Committees:

Dental Academic Standards Committee 1981-2000
Dental Curriculum Committee 1981-2000
Dental Admissions Committee 1984-1993
Basic and Clinical Sciences Coordination and Correlation Committee for Dental School 1983-2000
Departmental Review Committee for Biochemistry (Chairman) - 1990
Occupational/Environmental Interdisciplinary Research Planning Group - 1994-

2008
Graduate Student Curriculum Committee – 2002
Areas of Research Excellence Committee – 2002
Research Funding Development Grant Subcommittee, WVU School of Medicine – 2006-2008
School of Pharmacy Promotion and Tenure Committee 2017-

Departmental Seminars:

1. Spring 1978 - *"Mechanism of anion transport in dog and cat red blood cells"*
2. Fall 1978 - *"Potential dependence of anion transport in dog, cat, and human red blood cells"*
3. Spring 1979 - *"Heterogeneity of dog red blood cells: Sodium and potassium transport"*
4. Spring 1980 - *"Measurements of membrane potential with a fluorescent dye"*
5. Spring 1981 - *"If you've seen one phagocyte you've seen them all or have you?"*
6. Fall 1982 - *"Ascorbate transport in isolated type II cells"*
7. Spring 1985 - *"Effects of diesel exhaust and/or coal dust on pulmonary defense mechanisms"*
8. Spring 1986 - *"Alveolar type II cells: a multifunctional pneumocyte"*
9. Fall 1988 - *"An animal model of byssinosis"*
10. Spring 1991 - *"Taurine as a possible antioxidant in the lung"*
11. Fall 1991 - *"Pulmonary response to organic dusts"*
12. Spring 1994 - *"Importance of particle characteristics in silica-related pathology"*
13. Fall 1995 - *"The influence of surface characteristics on the toxicity of silica"*
14. Spring 1998 - *"Silica-induced NO production in lung cells"*
15. Fall 2000 - *"Effect of exposure to diesel exhaust particles on the susceptibility of the lung to infection."*
16. Fall 2001 - *"Effect of inhaled crystalline silica in a rat model: time course of pulmonary reaction."*

Teaching:

1978 – 1981 - graduate cell biology
1978 - med. tech. physiology (cell physiology)
1979 - 2007 - advanced physiology (respiratory)
1979 - 2000 - dental physiology (cell and respiratory)
1979 - 1980 - graduate radiation safety
1980 - graduate environmental health
1981 - 1999 - dental physiology (course coordinator)
1987 - 1991 - chemical engineering - occupational health and safety
2000 - 2007- medical physiology (respiration)
2002 - 2003 – special topics (pulmonary)
2004 - 2008 – Graduate respiratory biology
2015 – 2018 (fall to spring) – PHAR 789
2018 (spring) – PHAR 791
2018 (fall) – PHAR 749

Administration:

1. Program Planning Workgroup on Metals for FY 81 - NIOSH
2. Program Planning Workgroup on Energy for FY 82 - NIOSH
3. Program Planning Workgroup on Non-Fibrous Minerals for FY 84 - NIOSH
4. External Review Group for the Cotton Program at USDA - 1981

5. Reviewer for NIOSH grants
6. Program Planning Workgroup on Non-Fibrous Minerals for FY 85 (alternate chairman) - NIOSH
7. Program Planning Workgroup on Organic Dust and Chemicals for FY85 (alternate chairman) - NIOSH
8. Chief of Biochemistry Section 1983 (NIOSH)
9. Technical Advisor for NIOSH Grants
10. Acting Branch Chief in Chief's absence (NIOSH)
11. NRC Post-doctoral Program Committee 1984-1986; 1994-
12. Editorial Committee - New Orleans Conference on Agricultural Dusts, 1985
13. Laboratory Investigations Branch Animal Facilities Committee 1985-
14. Peer Reviewer for NIOSH Agriculture Center Projects
15. Program Planning Workgroup on Non-Fibrous Minerals for FY 1988 (chairman) - NIOSH
16. Peer Reviewer for NIOSH Publications
17. Secretary - NIOSH Animal Care and Use Committee 1988-1990
18. Hamilton Award Committee 1987-88 (Chairman) - NIOSH
19. Chief of Pathology Section 1989-1994 (NIOSH)
20. Academic Review Committee for Biochemistry Department 1989 (Chairman) - WVU
21. NIOSH Task Force on Agricultural Safety and Health 1989
22. Chairman - NIOSH Animal Care and Use Committee, 1990-1996
23. Member - Animal Policy Board Center for Disease Control, 1990-1996
24. National Research Council Fellowship Program for DRDS Co-ordinator, 1991; 1994
25. NIOSH Grants Co-ordinator for DRDS, 1991
26. Editor "Proceedings of the Oxygen Radicals and Lung Injury Conference" in Environmental Health Perspectives, 1994
27. Member NIOSH Grant Secondary Review Committee
28. Represented the Pulmonary Toxicology Program in DRDS before the Board of Scientific Councilors
29. Chief, Pathology and Physiology Research Branch 1995 - (NIOSH)
30. Acting Director, Health Effects Laboratory Division 1996 (NIOSH)
31. Member NIOSH Policy Statement Team 1995-1996
32. Member ALOSH Local Partnership Council 1996 - 1997
33. Member NIOSH Leadership Team 1996
34. Member of the NIOSH/NTP Planning Group, 1997 -
35. HELD representative on the NIOSH Ag Committee, 1998 -
36. Chairman, National Research Council Fellowship Program - NIOSH, Morgantown Committee
37. Member - NIOSH Fibers Committee
38. National Toxicology Program Committee for NIOSH
39. Coordinator, NIOSH Nanotechnology Safety and Health Research Program
40. Nanotechnology Research Center Steering Committee

Peer-reviewed Manuscripts

1. **Castranova V** and PR Miles. Sodium permeability of dog red blood cell membranes. I. Identification of regulatory sites. J Gen Physiol. 67:563-578, 1976.

2. **Castranova V** and PR Miles. A study of amino and sulfhydryl sites in the sodium pathway in dog red blood cell membranes. J Mem Biol. 33:263-279, 1977.

3. **Castranova V**, MJ Weise, and JF Hoffman. Characteristics of anion transport in cat and dog red blood cells. J Mem Biol. 49:57-74, 1979.

4. Parker JD, **V Castranova**, and JM Goldinger. Dog red blood cells. Na and K diffusion potentials with extracellular ATP. J Gen Physiol. 69:417-430, 1977.

5. Miles PR, **V Castranova**, L Bleigh and P Lee. The effect of inorganic phosphate on sodium fluxes in dog red blood cells. Biochem Biophys Acta. 471:105-110, 1977.

6. **Castranova V**, MJ Weise, and JF Hoffman. Anion transport in dog, cat, and human

red cells: Effects of varying cell volume and Donnan ratio. J Gen Physiol. 74:314-334, 1979.

7. **Castranova V** and JF Hoffman. Heterogeneity in dog red blood cells: Na and K transport. J Gen Physiol. 73: 61-71, 1979.

8. Miles PR, **V Castranova**, and P Lee. Reactive forms of oxygen and chemiluminescence in phagocytizing alveolar macrophages. A J Physiol. 235:C103-108, 1978.

9. Reasor MJ, RA Koshut, and **V Castranova**. Biochemical characteristics of rat alveolar macrophages with chlorphentermine-induced phospholipidosis: Variations with increasing cell size. Exp and Molecular Path. 31:297-307, 1979.

10. **Castranova V**, L Bowman, and PR Miles. Ionic content and transmembrane potential of rat alveolar macrophages. J Cell Physiol. 101:471-479, 1979.

11. **Castranova V**, L Bowman, and PR Miles. Effects of heavy metal ions on oxidative metabolic processes in rat alveolar macrophages in vitro. Tox App Pharmacol. 53:14-23, 1980.

12. Miles PR, L Bowman MJ Reasor, and **V Castranova**. Toxicity of metal ions to alveolar macrophages. Am J Indus Med. 1:349-358, 1980.

13. Jones GS, K Van Dyke, and **V Castranova**. Purification of human granulocytes by centrifugal elutriation and measurement of transmembrane potential. J Cell Physiol. 104:425-431, 1980.

14. Miles PR, L Bowman, and **V Castranova**. Transmembrane potential changes during phagocytosis in rat alveolar macrophages. J Cell Physiol. 106:109-118, 1981.

15. Van Dyke K, C Van Dyke, D Peden, G Jones, **V Castranova**, E Brestel, and M Ringrose. Luminol dependent chemiluminescence analysis of human platelets. Microchem Jour. 25:514-523, 1980.

16. Jones GS, K Van Dyke, and **V Castranova**. Transmembrane potential changes associated with superoxide anion release from human granulocytes. J Cell Physiol. 106:75-83, 1981.

17. Sweeney TD, **V Castranova**, L Bowman, and PR Miles. Factors which affect superoxide anion release from rat alveolar macrophages. Exp Lung Res. 2:85-96, 1981.

18. **Castranova V**, GS Jones, RM Phillips, D Peden, and K Van Dyke. Abnormal responses of granulocytes in chronic granulomatous disease. Biochim Biophys Acta. 645:49-53, 1981.

19. **Castranova V**, L Bowman, JM Shreve, GS Jones, and PR Miles. Volcanic ash: Toxicity to isolated lung cells. J Toxicol Environ Health. 9:317-325, 1982.

20. Wright JR, **V Castranova**, HD Colby, and PR Miles. Ascorbate uptake by isolated rat lung cells. J App Physiol. 51:1477-1483, 1981.

21. Reasor MJ and **V Castranova**. Recovery from chlorphentermine-induced phospholipidosis in rat alveolar macrophages: Biochemical and cellular features. Exp Mol Path. 35:359-369, 1981.

22. Green FHY, L Bowman, **V Castranova** et al. Health implications of the Mount St. Helen's Eruption: Laboratory Investigations. Ann Occup Hyg Soc Inhaled Particles #5 ed. WH Walton, Univin. Brothers Limited, Surrey, Eng. Vol. 26, Nos 1-4, pp 921-933, 1982.

23. Jones GS, PR Miles, RC Lantz, DE Hinton, and **V Castranova**. Ionic content and regulation of cellular volume in rat alveolar type II cells. J Appl Physiol. 53:258-266, 1982.

24. Reasor MJ, CA Massey, RA Koshut, and **V Castranova**. Multinucleation in alveolar macrophages from rats treated with chlorphentermine. Lab Invest. 46:224-230, 1982.

25. Van Dyke K, D Peden, C Van Dyke, G Jones, and **V Castranova**. Inhibition by non-steroidal anti-inflammatory drugs of luminol-dependent-human-granulocyte chemiluminescence and ^{3}[H] FMLP binding. Inflam. 6:113-125, 1982.

26. Van Dyke K, G Pekoe, D Peden, H Mengoli, **V Castranova**, and D English. Multipurpose radiomatic automated flow liquid scintillation counter system for measurement of burst or delayed chemiluminescence reactions: Model-drug inhibition with lumino-dependent myeloperoxidase. Microchem J. 27:277-284, 1982.

27. **Castranova V**, JR Wright, HD Colby, and PR Miles. Ascorbate uptake by isolated rat alveolar macrophages and type II cells. J Appl Physiol. 54:208-214, 1983.

28. **Castranova V**, GS Jones, and PR Miles. Transmembrane potential of isolated rat alveolar type II cells. J Appl Physiol. 54:1511-1517, 1983.

29. Miles PR, JR Wright, L Bowman, and **V Castranova**. Incorporation of ^{3}H-palmitate into DSPC in alveolar type II cells isolated by centrifugal elutriation. Biochimica et Biophysica Acta. Vol. 753:107-118, 1983.

30. Van Dyke K, M Matamoros, C Van Dyke, and **V Castranova**. Calcium ionophore-stimulated chemiluminescence (CL) from human granulocytes: Evidence that A23187-induced chemiluminescence originates from arachidonic acid metabolism. Microchem J. 28:568-579, 1983.

31. **Castranova V**, GS Jones, JR Wright, HD Colby, L Bowman, and PR Miles. Transport properties of isolated type II alveolar epithelial cells. Am Rev Respir Dis. 127:S28-S33, 1983.

32. Peden D, K Van Dyke, G Peden, and **V Castranova**. Temporal sequence of chemiluminescence and aggregation of human neutrophils and platelets after stimulation by arachidonic acid. Microchem J. 28:91-98, 1983.

33. **Castranova V** and K Van Dyke. Analysis of oxidation of the membrane potential probe, Di-S-C_3(5), during granulocyte activation. Microchem Journal. 29:151-161, 1984.

34. **Castranova V**, L Bowman, MJ Reasor, T Lewis, J Tucker, and PR Miles. The response of rat alveolar macrophages to chronic inhalation of coal dust and/or diesel exhaust emissions. Mortality and Morbidity Weekly Report. 33:101-102, 1984.

35. Pailes WH, DJ Judy, H Resnick, and **V Castranova**. Relative effects of asbestos and wollastonite on alveolar macrophages. J Tox Environ Health 14:497-510, 1984.

36. Van Dyke K, **V Castranova**, CJ Van Dyke, J Ma, K Michaux, KW Mollison, and GW Carter. Granulocyte response to oxidized FMLP: evidence for partial inactivation of FMLP. Inflammation. 8:87-99, 1984.

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435. Roberts JR, RR Mercer, T Sager, A Kenyon, SA Bilgesu, JF Scabilloni, A Stefaniak, MS Seehra, SS Leonard, NR Fix, D Schwegler-Berry, IS Chaudhuri, A Kyrlidis, BY Farris, M Wolfarth, DW Porter, V Castranova, and A Erdely. Particle characterization and toxicological evaluation of pulmonary exposure to graphenes of different sizes. Toxicologist 144:A811, 2015.

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437. Ma J, RR Mercer, M Barger, D Schwegler-Berry, P Demokritou, and **V Castranova**. Effects of amorphous silica coating on cerium oxide nanoparticle-induced pulmonary responses. The Toxicologist 144:A2345, 2015.

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impaired left ventricular relaxation in rats. 7th International Symposium on Nanotechnology: Occupational & Environmental Health, 2015.

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443. Sisler JD, W McKinney, A Mihalchik, R Mercer, J Shaffer, ME Andrew, M Wolfarth, D Porter, L Battelli, **V Castranova**, and Yong Qian. CoO and La_2O_3 metal oxide nanoparticle-induced pulmonary response in mice after whole-body inhalation exposure. The Toxicologist, 2016.

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448. Porter DW, M Orandle, R Mercer, N Wu, B Chen, A Holian, M Wolfarth, S Friend, L Battelli, R Hamilton, Y Hagiwara, T Koyama, and **V Castranova.** Comparative lung bioactivity of vapor grown carbon nanofibers and multi-walled carbon nanotubes. 8th International Nanotoxicology Conference, June 1-4, 2016, Boston, MA, 2016.

449. Zheng W, W McKinney, M Kashon, **V Castranova**, and H Kan. Inhalation of multi-walled carbon nanotubes increases heart rate variability associated with an alteration in cardiac function in rats. 8th International Nanotoxicology Conference, June 1-4, 2016, Boston, MA, 2016.

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CE McLoughlin, T Eye, M Wolfarth, DW Porter, **V Castranova**, and A Erdely. Toxicological evaluation of graphene nanomaterials that differ in size and oxidative form following pharyngeal aspiration in mice. 8th International Nanotoxicology Conference, June 1-4, 2016, Boston, MA, 2016.

451. Tsuruoka S, H Matsumoto, and **V Castranova**. Classification of chemical reactivity of various carbon nanotubes using redox potential to estimate ROS toxicity from physicochemical properties. The Toxicologist, 2017.

452. Sisler JD, J Shaffer, T Lee, W McKinney, L Battelli, M Orandle, T Thomas , **V Castranova**, C Qi, A Echt, DW Porter, M Andrew, JS Fedan, RR Mercer, and Y Qian. In vivo toxicological assessment of sanding dust generated from micronized copper azole pressurized treated wood. The Toxicologist, 2017.

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455. Tsuruoka S, H Matsumoto, and **V Castranova**. The recent industrial applications of CNTs considering toxicological evaluations and redox potential estimating ROS toxicity. NANOEH2017, May 29-June 1, Elsinore, Denmark, 2017.

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457. Farcas MT, A Stefaniak, …, **V Castranova**, and Y Qian. Toxicological evaluation of acrylonitrile butadiene styrene (ABS) 3-D printer emissions. SOT, March, 2020.

458. Farcas, MT, A Stefaniak, W McKinney, A Knepp, L Bowers, WK Mandler, M Kashon, L Battelli, TA Stueckle, M Orandle, A Winn, SA Friend, S Jackson, C Qi, D Hammond, R LeBouf, D Burns, A Ranpara, TA Thomas, J Matheson, **V Castranova**, and Y Qian. Acrylonitrile butadiene styrene (ASB) 3D printer emission-induced in vitro and in vivo toxicity. Soc. Of Risk Analysis, December, 2020.

EXTRAMURAL GRANTS

1) Effects of by-products of coal gasification and fluidized bed combustion processes on alveolar macrophages in newborn dogs
Consultant: Ping Lee (PI), WVU
10/79 - 9/82
Department of Energy
$54,074

2) The role of platelet-activating factor in the etiology of coal or silica-induced pneumoconioses and the effects of fresh cleavage planes on this research
Co-Investigator: K. Van Dyke (PI), WVU
Bureau of Mines
10/87 - 9/92
$148,880

3) Immunological and inflammatory pulmonary mechanisms associated with chronic coal dust inhalation in coal miners
Co-Investigator: N.L. Lapp (PI), WVU
Bureau of Mines
10/88 - 9/92
$156,100

4) Role of macrophage growth factors in fibroblast activation after coal dust exposure
Co-Investigator: R.D. Dey (PI), WVU
Bureau of Mines
10/89 - 9/92
$222,695

5) Targeted delivery of tetrandrine to alveolar macrophages for treatment of silicosis
Co-Investigator: J.K.H. Ma (PI), WVU
Bureau of Mines
10/89 - 9/92
$175,294

6) Cellular and molecular mechanisms of silicosis and coal workers' pneumoconiosis
Co-Investigator: R.D. Dey (PI), WVU
Bureau of Mines
10/92 - 9/94
$105,000

7) Pulmonary immunological and inflammatory mechanisms in surface and underground coal miners exposed to silica
Co-Investigator: N.L. Lapp (PI), WVU
Bureau of Mines
10/92 - 9/94
$120,000

8) Effect of diesel exhaust on pulmonary antimycobacterial defense
Co-Investigator: Dr. JKH Ma (PI), WVU
Bureau of Mines
10/94-9/96

9) The role of neural mediators in airway responses to coal dust and silica
Co-Investigator: Dr. R.D. Dey (PI), WVU
10/94-9/97
Bureau of Mines
$267,667

10) Pulmonary and Immunologic Mechanisms in Coal Miners with Accelerated Declines in Lung Function:
Co-Investigator: Dr. H Abrons (PI), WVU
10/95-9/96
Bureau of Mines
$90,000

11) Role of Cytokines and Mineral Particle Profile on the Development of

Coal Workers' Pneumoconiosis as Assessed by Bronchoalveolar Lavage:
Co-Investigator: Dr. L Lapp (PI), WVU
10/95-9/96
Bureau of Mines
$78,500

12) Regulation of Fas-mediated Lung Cell Apoptosis:
Co-investigator: Dr. Rojanasakul (PI), WVU
4/1/06-3/31/10
NIH
$252,586/yr

13) Microvascular Dysfunction from Pulmonary Exposure to Fine vs Ultrafine Titanium
Dioxide:
Co-investigator: Dr. T. Nurkiewicz (PI), WVU
7/05-6/08
Health Effects Institute
$79,959/yr

14) Oxidant Stress Induced by Nanomaterials:
Co-investigator: Dr. V. Kagan (PI), Univer.of Pittsburgh
7/05-6/08
NIOSH
$126,000/yr

15) Remote Microvascular Dysfunction after Particulate Matter Exposure:
Co-investigator: Dr. Tim Nurkiewicz (PI), WVU
9/1/07-8/31/12
NIEHS
$486,955/yr

16) A Novel Computational Framework for Individualized Clinical Discision Making:
Co-Investigator: Dr. Nancy Lan Guo (PI), WVU
6/ 2008-6/2012
NCI

17) Microvascular Health and Nanoparticle Exposure:
Co-Investigator: Dr. Tim Nurliewicz (PI), WVU
7/2009-6/2011
NIEHS
$400,000/yr

18) Use of Predictive Toxicology Paradigms to Establish Inhalation Toxicology Methods:
Co-Investigator: Dr. Andre Nel (PI), UCLA
7/2009-6/2011
NIEHS
$500.000/yr

19) Molecular Network Approaches to Lung Cancer Prognosis:
Co-Investigator: Dr. Nancy Lan Guo (PI), WVU
2009-2011
NIH
$1,000,000/yr

20) Effects of Exposure to Nanoparticles of Tungsten Carbide/Cobalt:
Co-Investigator: Dr. Jiang (PI), WVU
8/2009-7/2011
NIH
$431,222/yr

21) Risk Assessment of Engineered Nanoparticles:
Co-Investigator: Dr. Lang Tran (PI), Institute of Occup. Med., Scotland

4/2008-3/2012
7th EU Framework
$1,000,000/yr

22) National Children's Study:
Co-investigator: Dr. Lesley Cottrell (PI), WVU
2008-2011
NIH
$250,000/yr

23) Tissue Injury Defense Research Center:
Co-Investigator: Dr Jihee Lee Kang (PI), Ewha Womens University, Korea
8/2010-10/2014
Korean Institute for Science
$1,000,000/yr

24) Cobre for Signal Transduction and Cancer: NCRR ARRA Supplement-Translation:
Co-Investigator: Dr. Gibson and Dr. Guo (PIs), WVU
7/2009-09/2011
NIH

25) ENM Physicochemical Properties Define the Biological Injury Pathways that Lead to Pulmonary Fibrosis:
Co-Investigator: Dr. Nel (PI), UCLA
9/2010-8/2014
NIEHS

26) Prediction and Mechanism of Carbon Nanotube-Induced Fibrosis:
Co-Investigator: Dr. Rojanasakul (PI), WVU
7/2010-6/2014
NIH

27) Systemic Assessment of Multi-Walled Carbon Nanotubes in Pulmonary Disease:
Co-Investigator: Dr. Guo (PI), WVU
7/2012-6/2017
NCI

28) A Novel Computational Framework for Individualized Clinical Decision-Making:
Co-Investigator: Dr. Guo (PI), WVU
9/2013-9/2017
NCI

29) Maternal Nanomaterial Exposures: Fetal Microvascular Endpoints and Programming:
Co-Investigator: Dr. Nurkiewicz (PI), WVU
8/16/13-8/15/18
NIEHS

30) Vascular Consequences of Multi-Walled Carbon Nanotube Exposure:
Co-Investigator: Dr. Stapleton (PI), WVU
4/2013-4/2016
NIEHS

31) Induction of Neoplastic Transformation and Cancer Stem Cells by Carbon Nanotubes:
Co-Investigator: Dr. Rojanasakul (PI), WVU
4/2014-3/2019
NIEHS

32) IGERT:REN@WVU-Research and Education in Nanotoxicology at WVU:
PI
8/2012-8/2018

NFS

33) Carbon Nanomaterial-induced Malignant Transformation and Lung Carcinogenesis
Co-Investigator: Dr. Rojanasakul (PI), WVU
10/2014-9/2017
NSF

34) Nanoparticle Fibrogenicity and Fibroblast Stem-like Cells
Co-Investigator: Dr. Rojanasakul (PI), WVU
2/1/16-1/31/20
NIH

35) Maternal Nanomaterial Exposures: Fetal Microvascular Endpoints and Programming
Co-Investigator: Dr. Nurkiewicz (PI), WVU
12/2017 – 12/2022
NIEHS

36) West Virginia Clinical and Translational Science Institute: Improving Health through Partnership and Transformative Research
Co-Investigator: Dr. Hodder (PI), WVU
7/2017-6/2022

Biography

Vincent Castranova, Ph.D., is the Chief of the Pathology and Physiology Research Branch in the Health Effects Laboratory Division of the National Institute for Occupational Safety and Health, Morgantown, West Virginia. He holds the grade of a CDC Distinguished Consultant. He received the Shepard Lifetime Scientific Achievement Award from CDC in 2008, the Stokinger Outstanding Achievement in Industrial Toxicology Award from ACGIH in 2009, the ATS Assembly on Environmental & Occupational Health Val Vallyathan Senior Investigator Award in 2012, and the Inhalation and Respiratory Specialty Section/SOT Career Achievement Award in 2013. He is also a professor in the Department of Pharmaceutical Sciences at West Virginia University, Morgantown, West Virginia, an adjunct professor in the Department of Environmental and Occupational Health at the University of Pittsburgh, and a visiting scientist in the Harvard TH Chan School of Public Health.

Dr. Castranova received a B.S in biology from Mount Saint Mary’s College, Emmitsburg, Maryland in 1970, graduating magna cum laude. He received a Ph.D. in physiology and biophysics in 1974 from West Virginia University, Morgantown, West Virginia before becoming an NIH fellow and research faculty member in the Department of Physiology at Yale University, New Haven, Connecticut. In 1977, Dr. Castranova received a research staff position at the National Institute for Occupational Safety and Health and an adjunct faculty position at West Virginia University, Morgantown, West Virginia. He has served at these institutions since that time.

Dr. Castranova’s research interests have been concentrated in pulmonary toxicology and occupational lung disease. He was coordinator of the Nanotoxicology Program in NIOSH since its inception in 2005 until his retirement from NIOSH in 2014. He has been a co-author of four books, has given over 170 invited presentations, and has co-authored over 600 manuscripts and book chapters.

Curriculum Vitae
John M. Connors, Ph.D.

Date: September 20, 2021

Home Address: 1998 Felts Parkway, Fort Mill, SC 29715

Office Address:

Phone: 304 685 2500

FAX:

E-mail: jconnors@hsc.wvu.edu

Date of Birth: February 27, 1949

Place of Birth: Springfield, OH, USA

Citizenship: USA

Current Position: Associate Professor Emeritus

Education

Degree	School	Years
BA	Cornell University	1971
Ph.D.	University of Illinois	1977

Postgraduate/Postdoctoral Training

Degree	School	Years
Postdoc	University of Arizona	1976-77
Postdoc	West Virginia Univ.	1977-81

Board Certification (if applicable)

Licensure (if applicable)

Current Academic Positions and Appointments

Appointment	Years
Associate Professor	1992-Present

Previous Administrative Appointments

Appointment	Years

Previous Academic Appointments

Appointment	Years
Assistant Professor	1986-1992
Associate Professor	1992-2019
Emeritus Associate Professor	2020-present

Other Appointments

Appointment	Years

Hospital Appointments (if applicable)

Position	Hospital	Years

Awards and Honors

Award	Years

Nominated for the School of Medicine Distinguished Teacher Award, a student-driven award, in 2011.

Professional Societies

Role	Society	Years
Member	Society for Neuroscience	1997-present
Member	American Physiological Society	1978-2000
Member	American Thyroid Association	1980-1992
Member	Soc. for the Study of Reproduction	1996-2005
Member	The Endocrine Society	1980-1997

International Committees

Role	Committee	Years

National Committees

Role	Committee	Years
Member	National Institute of Occupational Safety and Health (NIOSH) Animal Care and Use Committee, 1988-1992	

State Committees

Role	Committee	Years

Institutional Committees

Role	Committee	Years
Senator	WVU Faculty Senate	
Chair	WVU Faculty Senate Faculty Welfare Committee	
Chair	WVU Faculty Senate Research Integrity Committee, 2018-2019	
Member	WVU Faculty Senate Research Integrity Committee, 2019-2020	
Member	WVU Cell and integrative Physiology Graduate Advisory Committee, 2016-19	

Member	WVU-Animal Care and Use Committee, 1986-89; 1997-present
Member	School of Medicine Admissions Committee, 2001 to 2015
Member	School of Medicine Promotion and Tenure Committee, 2006 to present
Member	School of Dentistry Biomedical Sciences Curriculum Committee, 2002-present
Chair	WVU Faculty Senate Community Engagement Grant Committee, 2014
Member	WVU Academic Review Committee for the Reproductive Physiology Program, 2000
Member	WVU School of Medicine Search Committee for Chair of Community Medicine, 1996 and 1997
Member	WVU School of Medicine Pediatric Clerkship Review Subcommittee, 1996
Member	WVU Health Sciences Center High Quality Water Committee, 1987-96
Member	School of Medicine Curriculum Committee, 1995-1999
Member	WVU Department of Physiology Graduate Studies Committee, 1993-2000; Chairman 1999-2000
Member	Mary Babb Randolph Cancer Center and WVU health Sciences Center Monoclonal antibody and protein analysis facility (MAPAF) Advisory Committee, 1988-89
Member	WVU Academic Review Committee for Orthopedic Surgery, 1986

Editorial Boards

Position	Journal Title	Years
Board Member	Endocrinology	1986-89
Board Member	Am. J. Physiology: Endocr. and Metab.	1988-1995

Ad hoc Reviewer

Journal Title	Years
Endocrinology	1990-2007
Neuroendocrinology	1989-2009
J. Clin. Endocrinol. Metab.	1992
Life Sciences	1988
Academic Medicine	1992-2011

Reviews and Study Sections

Position	Entity	Year
Ad hoc reviewer	NSF	2000
Ad hoc reviewer	USDA	1998

Grants and Contracts (PI unless otherwise stated)

Current Grants and Contracts

Grant/Source/Amount	Year

Previously Funded Grants and Contracts

Grant/Source/Amount	Years

Mode of salt intake and the development of hypertension in the Dahl slat-sensitive rat/American Heart Assoc./$14,830

Clinical Responsibilities (if applicable)

Undergraduate Medical Education
List name of course, topic of presentation, and audience

Human Function CCMD730 for First Year Medical Students
Physiology of the Gastrointestinal System , the Thyroid, the Adrenal Cortex, and Temperature Regulation

Physiology PSIO 760 for Medical Students
Physiology of the Gastrointestinal System , the Thyroid, the Adrenal Cortex, and Temperature Regulation

Physiology PSIO 770 for Medical Students
Physiology of the Gastrointestinal System , the Thyroid, the Adrenal Cortex, and Temperature Regulation

Medical Pharmacology PCOL 761 for Second Year Medical Students
Drugs affecting mineral metabolism and bone
Drugs affecting the hypothalamus and pituitary gland
Drugs used to treat hypothyroidism and hyperthyroidism
Drugs used to treat peptic ulcer disease and GERD
Drugs used to treat inflammatory bowel disease
Drugs used to treat constipation and diarrhea

Medical Pharmacology PCOL 770 for Second Year Medical Students
Drugs affecting mineral metabolism and bone
Drugs affecting the hypothalamus and pituitary gland
Drugs used to treat hypothyroidism and hyperthyroidism
Drugs used to treat peptic ulcer disease and GERD
Drugs used to treat inflammatory bowel disease
Drugs used to treat constipation and diarrhea

Graduate Medical Education
List name of course, topic of presentation, and audience

Graduate Student Education
List name of course, topic of presentation, and audience

Graduate Physiology/Pharmacology 1 (PSIO750)
Introduction to Physiology
Homeostasis
Plasma membrane function

Principles of neural communication

Graduate Physiology/Pharmacology 1 (PSIO750)
Physiology of the thyroid, adrenal cortex, endocrine pancreas and maintenance of body energy stores

Health Professions Education
List name of course, topic of presentation, and audience

Fundamentals of Physiology 743 for First Year Dental, Physician Assistants, Pharmacy, and Exercise Physiology Students
Introduction to Physiology
Cell Physiology
Membrane Transport
Membrane Potential
Action Potential
Nerve Conduction and Synapse
Gastrointestinal Physiology

Pharmacology for Second Year Dental Students
Drugs used to treat hypothyroidism and hyperthyroidism

Postgraduate Courses and Workshops Directed
List name of course, topic of presentation, and audience

Invited Lectures and Presentations: International
List authors, title, conference, and date

Human Function for Medical Students at the Oman Medical College, Sohar, Oman, 2005 to 2015.
Gastrointestinal and Endocrine Physiology (26 lectures)

Invited Lectures and Presentations: National
List authors, title, conference, and date

Invited Lectures and Presentations: Local and Institutional
List authors, title, conference, and date

Bibliography (Publications must be listed under the appropriate title)
Abstracts Presented

1. Martin, L., J. Connors, T. Doubt, J.J. McGrath and G. Wertenberger. Effect of Aging on Right Ventricular Anoxic Tolerance. Proc. International Study Group for Research in Cardiac Metabolism. (Abstract No. 69), Freiburg, West Germany, 1973.

2. Martin, L.G., J.M. Connors, T.J. Doubt, J.J. McGrath and G.E. Wertenberger. Effects of Aging and Altitude Acclimation on Thyroid Function. The Physiologist 16: 390, 1973.

3. Connors, J.M. and L.G. Martin. Thyroidal Changes with Aging. Clin. Res. 22: 662A, 1974.

4. Connors, J.M., L.G. Martin and P.L. Hawley. Effect of Stimulated Altitude on Thyroid Function and Myocardial Anoxic Resistance of the Rat and the Thirteen-lined Ground Squirrel. Fed. Proc. 35: 238, 1976.

5. Connors, J.M., M.R. Brown and G.A. Hedge. Feedback Inhibition of TSH Secretion by Thyroxine Under Physiological Conditions. 59th Meeting of the Endocrine Society: 127, 1977.

6. Connors, J.M. and G.A. Hedge. Feedback Effectiveness of Periodic Versus Constant Triiodothyronine (T3) Replacement. 54th Meeting of the American Thyroid Association: T-10, 1978.

7. Judd, A.M., R.L. Craig, K.C. Wright, J.M. Connors and G.A. Hedge. Superfusion of Dispersed Pituitary Cells for the Study of TSH Secretory Dynamics. Fed. Proc. 38: 1026, 1979.

8. Connors, J.M., K.C. Wright, R.L. Craig, C.M. Liu, A.M. Judd and G.A. Hedge. TSH Secretory Dynamics of Superfused Dispersed Rat Anterior Pituitary Cells. 61st Meeting of the Endocrine Society: 93, 1979.

9. Connors, J.M. and G.A. Hedge. TSH Secretion by Superfused Rat Anterior Pituitary Fragments and Dispersed Rat Anterior Pituitary Cells. VIII International Thyroid Congress: 149, 1980.

10. Connors, J.M. and G.A. Hedge. Effects of Triiodothyronine (T3) on Thyrotropin-Releasing Hormone (TRH)-Induced Secretion of Thyroid Stimulating Hormone (TSH) in Superfused Rat Pituitary Fragments and Dispersed Cells. Fed. Proc. 39: 982, 1980.

11. Connors, J.M. and G.A. Hedge. Effects of Starvation on the Plasma Concentrations of Thyroxine (T4), Triiodothyronine (T3), Thyrotropin (TSH) and Corticosterone (B) and the Thyrotropin Response to Thyrotropin-Releasing Hormone (TRH) in Rats. 57th Meeting of the American Thyroid Association: T42, 1981.

12. Connors, J.M. and G.A. Hedge. Changes in the Plasma Concentrations of Thyroxine (T4), Triiodothyronine (T3), Thyrotropin (TSH), and Corticosterone (B) and the Response to Thyrotropin-Releasing Hormone (TRH) in Female rats during Fasting. Fed. Proc. 41: 996, 1982.

13. Connors, J.M., W.J. DeVito and G.A. Hedge. Effects of Duration and Degree of Hypothyroidism on the Pituitary TSH Response to TRH. 58th Meeting of the American Thyroid Association: T16, 1982.

14. Connors, J.M., W.J. DeVito and G.A. Hedge. Effect of Duration of Severe Hypothyroidism and Aging on the Pituitary Thyrotropin (TSH) Response to Thyrotropin-Releasing Hormone (TRH) and the TSH Metabolic Clearance Rate (MCR) in the Rat. Fed. Proc. 42: 973, 1983

15. DeVito, W.J., J.M. Connors and G.A. Hedge. Distribution and Modulation of Immunoreactive Thyroid Stimulating Hormone (IR-TSH) in the Rat Hypothalamus. Fed. Proc. 42: 973, 1983.

16. Gladfelter, W.E. and J.M. Connors. Effect of Electrolytic and Kainic Acids Lesions in the Lateral Hypothalamus on Wheel Running Activity and Plasma TSH Levels. Fed. Proc. 42: 754, 1983.

17. DeVito, W.J., J.M. Connors and G.A. Hedge. Differential Effects of Continuous Infusion of T3 or T4 on Pituitary Thyrotropin (TSH) Content and TSH Response to Thyrotropin-Releasing Hormone (TRH) in the Hypothyroid Rat. 65th Meeting of the Endocrine Society: p. 501, 1983.

18. Hedge, G., J. Connors, W. DeVito. Thyroxine (T4), but not Triiodothyronine (T3), Enhances the Pituitary Response to Thyrotropin-Releasing Hormone (TRH) During Hypothyroidism. Annales d'Endocrinologie: p90A, 1983.

19. Hedge, G.A., W.J. DeVito, and J.M. Connors. Immunoreactive Thyroid Stimulating Hormone (IR-TSH) Detected in Brain is not Dependent on the Presence of Pituitary Thyrotropes. XIV ACTA Endocrinologica Congress: p. 92, 1983.

20. Connors, J.M., W.J. DeVito, and G.A. Hedge. Total, but not Partial, Food Deprivation Alters the Pituitary TSH Response to Exogenous TRH in Rats. Fed. Proc. 45: 177, 1986.

21. Hedge, G.A., L.J. Huffman and J.M. Connors. Vasoactive Intestinal Peptide (VIP) Increases Thyroid Blood Flow (BF), but not T3 or T4 levels in the rat. Proc. Int'l Union Physiol. Sci. XVI: 554, 1986.

22. Huffman, L.J., J.M. Connors, and G.A. Hedge. Effect of Homologs of Vasoactive Intestinal Peptide on Rat Thyroid Vascular Conductance and Circulating Thyroid Hormone Levels. 68th Meeting of the Endocrine Society: 272, 1986.

23. Connors, J.M. A Reverse Hemolytic Plaque Assay for Microscopic Visualization of Thyrotropin Release from Individual Rat Thyrotrophs. 68th Meeting of the Endocrine Society: 228, 1986.

24. Hedge, G.A., L.J. Huffman, and J.M. Connors. Functional Significance of Peptidergic Thyroid Nerves. _lst Int'1 Congress of Neuroendocrinology: 54, 1986.

25. Connors, J.M., L.J. Huffman, and G.A. Hedge. Characterization of TSH Effects on Thyroidal Blood Flow. 61st Meeting of the American Thyroid Assoc.: T16, 1986.

26. Connors, J.M., L.J. Huffman, and G.A. Hedge. Effects of hypophysectomy and bovine TSH treatment on thyroid vascular conductance. 69th Meet. Endo. Soc.: 75, 1987.

27. Michalkiewicz, M., J.M. Connors, L.J. Huffman, and G.A. Hedge. Temporal patterns of compensation following subtotal thyroidectomy (STTX). 62nd Meet. Amer. Thyroid Assoc.: T50, 1987.

28. Michalkiewicz, M., L.J. Huffman, J.M. Connors, and G.A. Hedge. Measurement of thyroidal VIP content by RIA under hyper- and hypothyroid conditions. 17th Meet. Soc. For Neurosci.: 1311, 1987.

29. Michalkiewicz, M., L.J. Huffman, J.M. Connors, and G.A. Hedge. Early adaption to iodine deficiency includes a TSH-independent increase in thyroid blood flow. 8th Int'l. Congress of Endocrinology, Kyoto, Japan, 298, 1988.

30. Connors, J.M., Huffman, L.J., Michalkiewicz, M., Hedge, G.A. Thyroid blood flow: Differential effects of elevated plasma TSH produced by PTU or TRH treatment. 63rd Meeting of the American Thyroid Assoc., T55, 1988.

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32. Hedge, G.A., Michalkiewicz, M., Connors, J.M., Huffman, L.J. The role of TSH in mediating compensatory changes in the remaining thyroid lobe after hemithyroidectomy. International Thyroid Symposium, Tokyo, Japan, 103, 1988.

33. Michalkiewicz, M., J.M. Connors, L.J. Huffman, and G.A. Hedge. Anterior pituitary 8asoactive intestinal peptide immunoreactivity (VIP-IR) is increased in hypothyroid rats. 71st Annual Meeting of the Endocrine Society: 65, 1989.

34. Michalkiewicz, M., J.M. Connors, Z. Pietrzyk, L.J. Huffman, and G.A. Hedge. Acute iodide administration causes biphasic changes in thyroid blood flow in iodine deficient rats. 64th Meeting of the American Thyroid Association: T50, 1989.

35. Huffman, L.J., M. Michalkiewicz, J.M. Connors, Z. Pietrzyk, and G.A. Hedge. Functional Significance of Cholinergic and VIP-ergic Effects at the Thyroid Gland. 19th Meet. Soc. For Neurosci.: 973, 1989.

36. Hedge, G., J. Connors, L. Huffman, and M. Michalkiewicz. PTU- But not TRH-Induced TSH Raises Thyroid Blood Flow. Proc. Int'1. Union Physiol. Sci.: 286, 1989.

37. Michalkiewicz, M., J.M. Connors, L.J. Huffman, Z. Pietrzyk, and G.A. Hedge. Is Thyroid Blood Flow a Limiting Factor for Thyroid Iodine Supply? Intl. Symp. Thyroid Gland, Environment, and Autoimmuni10, 1989.

38. Hedge, G., J. Connors, L. Huffman and M. Michalkiewicz. Propylthiouracil alters the sensitivity of the thyroid gland to TSH-induced increases in blood flow. 10th International Thyroid Congress 1990.

39. Huffman, L.J., M.A. Boegehold, J.M. Connors, and G.A. Hedge. Effect of dietary salt on thyroid function in the Dahl rat. The Physiologist 34 (4):251, 1991.

40. Anderson G.M., J.M. Connors, S.L. Hardy, M. Valent, and R.L. Goodman. Seasonal changes in LH pulsatility in the ovariectomized ewe are not abolished by thyroidectomy. Annual Meeting of Society for Study of Reproduction, 1999.

41. Goodman R.L., G.M. Anderson, J.M. Connors, S.H. Hardy, M. Valent, and N.M. Lehman. Endogenous opioid peptides (EOP) act via –receptors in the ovine mediobasal hypothalamus

(MBH) to inhibit LH pulse frequency during the luteal phase. Annual Meeting of Society for Study of Reproduction, 1999.

42. Anderson G.M., J.M. Connors, S.L. Hardy, M. Valent, and R.L. Goodman. A site of action of estradiol suppression of LH secretion via dopaminergic neurons in the anestrous ewe. Annual Meeting of Society for Study of Reproduction, 2000.

43. Billings H.J., J.M. Connors, R.L. Goodman, F.J. Karsch, C. Viguie, and G.M. Anderson. Thyroid hormones and seasonal reproduction: Temporal aspects of thyroid hormone action and mode of interaction with a circannual rhythm. Annual Meeting of Society for Study of Reproduction, 2000.

44. Anderson G.M., H.J. Billings, J.M. Connors, R.L. Goodman, and F.J. Karsch. Thyroid hormones are required for the day-night rhythm of fos expression in the premammillary hypothalamic area (PMH) of the ewe. Annual Meeting of Society for Neuroscience, 2000.

45. Hardy S.L., G.A. Anderson, M. Valent, J.M. Connors, and R.L. Goodman. Does estradiol act via - estrogen receptors in the ovine retrochiasmatic area to inhibit LH secretion in anestrus? Annual Meeting of Society for Neuroscience, 2000.

46. Adams, V.L., Salm, A., Connors, J.M., Coolen, L.M., and Goodman, R.L. Seasonal plasticity of A15 dopaminergic neurons in the ewe. Annual Meeting of the Society for Neuroscience, 2001

47. Hardy, S.L., Anderson, G.M., Valent, M., Billings, H.J., Connors, J.M., Goodman, R.L. Evidence that thyroid hormones (T4) act in the pre-mammillary region (PMR) to allow seasonal anestrus in the ewe. Annual Meeting of the Society for Neuroscience, 2001.

48. Hardy, S.L., Valent, M., Connors, J.M., Goodman, R.L. Seasonal variation in the response to local administration of estradiol to the ovine retrochiasmatic area. Annual Meeting of Society for the Study of Reproduction, 2001.

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51. Goodman, R.L., Anderson, G.M., Adams, V.L., Hardy, S.L., Connors, J.M., Valent, M., and Lehman, M.N. Neuroendocrine mechanisms underlying seasonal breeding in the ewe. Annual meeting of the Animal Science Society, Quebec, Canada, 2002.

52. McManus, C.J., Hardy, S.L., Valent, M., Connors, J.M., and Goodman, R.L. Inhibition of nitric oxide synthase in the ventromedial preoptic area increases luteinizing hormone pulse frequency in the anestrous ewe. Annual Meeting of the Society for Neuroscience, 2002.

53. Billings, H.J., Connors, J.M., Goodman, R.L., and Lehman M.N. A subset of GnRH neurons contacting cerebrospinal fluid in the ewe. Annual Meeting of the Society for Neuroscience, 2002.

54. McManus, C.J., Goodman, R.L., Llanza, N.V., Valent, M., Dobbins, A.B., Connors, J.M., and Hileman, S.M. Intrahypothalamic administration of estradiol suppresses LH in food restricted castrate sheep. Annual Meeting of the Society for Neuroscience, 2003.

55. Lehman, M.N., Billings, H.J., Foradori, C.D., Amstalden, M., Coolen, L.M., Anderson, G.M., Hardy, S.L., Connors, J.M., and Goodman, R.L. The sheep as a model for the study of neuroendocrine circuitry. Annual Meeting of the Society for the Study of Reproduction, 2004.

56. McManus, C.J., Goodman, R.L., Llanza, N.V., Valent, M., Dobbins, A.B., Connors, J.M., and Hileman, S.M. Administration of dihydrotestosterone (DHT) to the ventromedial hypothalamus does not suppress LH in food restricted castrate sheep. Annual Meeting of the Society for the Study of Reproduction, 2004.

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59. Goodman, R.L., McManus, C.J., Valent, M., Connors, J.M., Hileman, S.H., and Lehman, M.N. Evidence that □-amino butyric acid (GABA) is part of the neural circuit mediating estradiol negative feedback in anestrous ewes. Annual Meeting of the Society for Neuroscience, 2004.

60. McManus, C.J., Valent, M., Connors, J.M., Lehman, M.N., Goodman, R. A neurokinin-B stimulates LT secretion in follicular, but not luteal phase ewes. Annual Meeting of the Society for Neuroscience, 2005.

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65. Nestor CC, Billings HJ, Hileman SM, Connors JM, Valent M, Salm AK, Lehman MN, Goodman RL 2009 Orphanin FQ acts primarily at the hypothalamus to inhibit pulsatile LH secretion in sheep. Annual Meeting of Society for Neuroscience, 2009

66. Lehman MN, Ladha Z, Coolen LM, Connors JM, Hileman SM, Goodman RL 2010 Neuronal plasticity and seasona reproduction in sheep. 7th International Congress of Neuroendocrinology: Plasticity of Neuroendocrine Systems, 2010

67. Goodman RL, Holaskova I, Nestor C, Hileman MN, Connors JM, Billings HJ, Valent M, Lehman MN 2010 Evidence that dynorphin neurons in the arcuate nucleus mediate the negative feedback actions of progesterone in the ewe. 7th International Congress of Neuroendocrinology, 2010

68. Smith DJ, Chandy SJ, Bindu SV, Connors JM 2010 An audience response system enhances learning and problem-solving skills at the Oman Medical College. 14th Annual Meeting of the International Association of Medical Science Educators, 2010, Abstract ID 10-182

69. Nestor CC, Seebaugh AM, Valent M, Connors JM, Goodman RL, Hileman SM 2010 Evaluation of neurokinin B and kisspeptin expression before and after puberty in sheep. Annual Meeting of the Society for Neuroscience 2010.

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73. Coolen LM, Smith TG, Lehman MN, Hileman SM, Connors JM, Goodman RL 2013 Arcuate KNDy neurons receive afferent projections from the retrochiasmatic area of the brain. Annual Meeting of the Society for Neuroscience 2013.

74. Grachev P, McCosh RB, Lopez JA, Nesselrod GL, Valent M, Hardy SL, Connors JM, Hileman SM, Goodman RL 2014 The stimulatory effect of Neuromedin U on pulsatile LH secretion: Insights from a seasonal . Annual Meeting of the Society for Neuroscience 2014.

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dependent on melanocortin type 4 receptor signaling. Annual Meeting of the Society for Neuroscience, Abstr 339.05

76. Goodman RL, Lopez JA, Bedenbaugh MN, Connors JM, Hardy SL, Hileman SM, Coolen LM and Lehman MN. 2018 Evidence that the LH surge in ewes involves neurokinin B-dependent and independent actions of kisspeptin. Annual Meeting of the Society for Neuroscience

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Original Published Peer-Reviewed Articles

List complete citation: authors, title, journal, and date of publication

1. Martin, L.G., J.M. Connors, J.J. McGrath and J. Freeman. Altitude-Induced Erythrocytic 2,3-DPG and Hemoglobin Changes in Rats of Various Ages. J. Appl. Physiol. 39: 258-261, 1975.

2. Connors, J.M. and G.A. Hedge. Feedback Effectiveness of Periodic Versus Constant Triiodothyronine (T3) Replacement. Endocrinology 106: 911-917, 1980.

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4. Connors, J.M. and G.A. Hedge. Effects of Continuous T4 Administration on TSH Secretion In Thyroidectomized Rats. Endocrinology 108: 2098-2102, 1981.

5. Connors, J.M. and L.G. Martin. Altitude-Induced Changes in Plasma Thyroxine, 3,5,3'-Triiodothyronine and Thyrotropin in Rats. J. Appl. Physiol. 53: 313-315, 1982.

6. Connors, J.M., W.J. DeVito and G.A. Hedge. The Effects of the Duration of Severe Hypothyroidism and Agining on the Metabolic Clearance Rate (MCR) of Thyrotropin (TSH) and the Pituitary TSH Response to Thyrotropin-Releasing Hormone (TRH) in the Rat. Endocrinology 114: 1930-1937, 1984.

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12. DeVito, W.J., J.M. Connors, and G.A. Hedge. Immunoreactive Prolactin in the Rat Hypothalamus: In Vitro Release and Subcellular Localization. Neuroendocrinology 46: 155-161, 1987.

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14. Connors, J.M., L.J. Huffman, and G.A. Hedge. Effects of thyroid stimulating hormone on the vascular conductance of the thyroid gland. Endocrinology 122: 921-929, 1988.

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Original Peer-Reviewed Articles in Press
List complete citation: authors, title, journal, and date that it will be published

Books
List authors, title, status, publisher, and publication date

Book Chapters
List authors, title, status, publisher, and publication date

1. Martin, L.G., J.J. McGrath and J.M. Connors. Effect of Aging on Right Ventricular Anoxic Resistance. In: Recent Advances in Studies on Cardiac Structure and Metabolism, Volume VII, P. Harris and A Fleckstein (eds.), p. 267, University Park Press, Baltimore, 1975.

2. Connors, J.M. and G.A. Hedge. TSH Secretion by Superfused Rat Anterior Pituitary Fragments and Dispersed Pituitary Cells. In: Thyroid Research VIII, J.R. Stockigt and S. Nagataki (eds.), p. 47-50, Australian Acad. Sci., Canberra, 1980.

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14. Connors, J.M.: Nausea. xPharm; Executive Editors: S.J. Enna and David B. Bylund; Publisher, Elsevier, Inc., New York, 2004.

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Technical Reports and Conference Proceedings

Invited Publications (Non peer-reviewed)
List complete citation: authors, title, journal, and date of publication

Editorials
List authors, title, conference, and date

Letters
List authors, title, conference, and date

Book Reviews
List authors, title, publisher, and date

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Mary E. Davis, Ph.D.
Curriculum Vitae

Date: November 3, 2015

Office Address: 3049 HSN

Phone: 304 293 3414

FAX: 304 293 3850

E-mail: mdavis@hsc.wvu.edu

Date of Birth: January 22, 1952

Place of Birth: Bethesda, Maryland

Citizenship: United States

Current Position: Professor

Education

Ph.D.	Michigan State University	1973-1977
B.S.	University of California, Davis	1969-1973

Postgraduate/Postdoctoral Training

Postdoc	University of Mississippi Medical Center	1977-1980

Current Academic Positions and Appointments

Professor of Physiology and Pharmacology	2001-present
Professor of Basic Pharmaceutical Sciences	1991-present

Previous Academic Appointments

Professor, Dept. of Pharmacology and Toxicology	1991-2001
Associate Professor of Pharmacology and Toxicology	1985-1991
Assistant Professor of Pharmacology and Toxicology	1980-1985

Professional Societies

Treasurer	Society of Toxicology	1995-1997
Treasurer-Elect	Society of Toxicology	1994-1995
Member	Finance Committee, Society of Toxicology	1987-1989, 1994-1997
Trustee	Toxicology Education Foundation (1995-1999)	
President-Elect	Allegheny-Erie Regional Chapter of the Society of Toxicology	1990-1991
President	Allegheny-Erie Regional Chapter of the Society of Toxicology	1991-1992
Past-President	Allegheny-Erie Regional Chapter of Society of Toxicology	1992-1993

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National Committees

Member Safe Drinking Water Subcommittee on Health Effects of Disinfectants and their Byproducts, National Academy of Sciences National Research Council (1985-1986)

Member Safe Drinking Water Committee Subcommittee on Pharmacokinetics; National Academy of Sciences, National Research Council (1986-1987)

Member Drinking Water Committee of the Science Advisory Board, Environmental Protection Agency 1998-2004

Member Committee for Assessing Human Health Risks of Trichloroethylene, National Academy of Sciences National Research Council 2005-2006

Member Committee on Tetrachloroethylene, National Academy of Sciences National Research Council 2008-2009

Member Committee on Toxicology, National Academy of Sciences National Research Council 2011-2014

Member Committee to Review Studies of Possible Toxic Effects from Past Environmental Contamination at Fort Detrick, National Academy of Sciences National Research Council 2011-2012

Member National Academy of Sciences, National Research Council Committee on Arsenic 2013-2015

Member Institute of Medicine of the National Academies, Committee to Review Clinical Guidance for the Care of Health Conditions Identified by the Camp Lejeune Legislation, 2014-2015

State Committees

Member Ad Hoc Subcommittee on Health Effects, Agent Orange Assistance Program, West Virginia State Board of Health 1982-1984

Member West Virginia State Board of Health, Technical Assistance/Review Panel, Environmental Risk Assessment Panel 1984-1986

Member National Institute for Chemical Studies Advisory Committee, EPA/Harvard University Kanawha Valley Health Effects Study 1986-1990

Member Ground Water Policy and Technical Advisory Committee, Department of Natural Resources 1986-1987

Member Commercial Hazardous Waste Management Facility Siting Board 1989-2015

Institutional Committees

Member	Academic Review Committee; Community Medicine	1982
Member	Institutional Biohazard Committee	1984-1986
Member	Academic Computing Advisory Committee	1984-1985; 1989-present
Member	Medical Center Implementation of Two-Track System Task Force	1984-1985
Member	Medical Center Libraty Advisory Committee	1984-1989
Member	Basic Sciences Computer Task Force	1985
Member	Biomedical Research Support Committee	1985-1988
Member	Research Computing Advisory Committee	1985-1988
Member	Co-Organizer, "WV Ground Water '87: Status and Future Directions"	
Member	Water Research Institute Research Committee	1988-1991
Member	Animal Care and Use Committee	1987-1993
Chair	Animal Care and Use Committee	1990-1993
Organizer	Medical Center Microcomputer Laboratory proposal	
Member	Computer-Based Learning Center Advisory Committee	1991-1993

Member	School of Pharmacy Schoolwide Faculty Evaluation Committee	1994-2003
Member	Institutional Review Board	2008-2009

Editorial Boards

Member	*Toxicology and Applied Pharmacology*	1989-2005
Member	*Toxicology*	1992-2002

Ad hoc Reviewer

Biochemical Pharmacology, Envirnomental Health Perspectives, Fundamental and Applied Toxicology now *Toxicological Sciences, Journal of Toxicology and Environmental Health, Journal of Pharmacology and Experimental Therapeutics, Food and Cosmetics Toxicology*

Reviews and Study Sections

Reviewer	Environmental Protection Agency Health Effects Research Divison (contract to Research and Evaluation Consultants, Inc.	1992
Reviewer	Air Force Office of Scientific Research	1991, 1993, 1997, 2004
Reviewer	National Institutes of Health	1999, 2001, 2005
Reviewer	Veteran's Administration	1999
Reviewer	Agency for Toxic Substances Disease Registry (ATSDR)	2006
Reviewer	Environmental Protection Agency	2006-2008

Grants and Contracts (PI unless otherwise stated)

Current Grants and Contracts

WEST VIRGINIA IDEA NETWORK OF BIOMEDICAL RESEARCH EXCELLENCE (WV-INBRE), Co-I and Bioinformatics Core Director, NIH, funded for 2014-2019. The budget year is changed for the current 5 year award, there have been several no cost extensions as NIH/NIGMS struggles to complete the award process. The request for the current year $1,848,775 to WVU (Direct costs $1,553,344, F&A $295,775) and for the five years of the grant the total direct costs to WVU is $9,311,147 (of which $295,431 is subcontract to an undergraduate institution).

Previously Funded Grants and Contracts

see previous annual reports

Undergraduate Medical Education

Pharmacology course: pharmacokinetics, diuretics and toxicology of solvents and pesticides (see previous annual reports for details and dates). Active Learning Exercise facilitator.

Graduate Medical Education

none

Graduate Student Education

Occupational Toxicology for Occupational Health and Safety Engineering MS students. Toxicokinetics (absorbtion, distribution, metabolism and elimination), liver, kidney and nervous system toxicology, toxicology of solvents, pesticides, combustion-by products, environmental toxicology Spring 1981-Spring 2011

Health Professions Education

Pharmacology for Pharmacy Students lecturer since ~1985 to present (metabolism, absorption, distribution, excretion, metabolism, toxicology, diuretics) and course coordinator since at least 1992

(maybe earlier—I don't have paper files of old activity reports or bubble sheets for reporting grades) as one semester course and now coordinator of first semester of two semester series.

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Abstracts Presented

Davis, M.E. Akera, T. and Brody, T.M.: Saturable binding of morphine to rat brainstem slices and the effect of chronic morphine treatment. *Pharmacologist* 17: 176 (1975).

Davis, M.E., Akera, T. and Brody, T.M.: Effects of morphine treatment on cooperativity of saturable naloxone binding to rat brain slices. *Fed. Proc.* 36: 933 (1977).

Davis, M.E., Brody, T.M. and Akera, T.: Reduction of $(d\text{-ala})_2$-methionine enkephalinamide (DALA) binding in morphine tolerant rats and differences of receptor binding between DALA and opiate alkaloids. *Fed. Proc.* 37: 237, 1978.

Davis, M.E. and Mehendale, H.M.: Uptake of morphine by isolated perfused rabbit lung. *Pharmacologist* 20: 197, 1978.

Davis, M.E. and Mehendale, H.M.: Potentiation of carbon tetrachloride hepatotoxicity by chlordecone. *J. Miss. Acad. Sci.* 24 (Suppl.): 68: 1979.

Davis, M.E., Berndt, W.O. and Mehendale, H.M.: Digoxin excretion in hepatic and renal toxicity. *Toxicol. Appl. Pharmacol.* 48 (pt. 2) A191, 1979.

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Davis, M.E., Berndt, W.O. and Mehendale, H.M.: Hexachloro-(1,3)-butadiene (HCBD) effects on hepatic and renal function. *Pharmacologist* 21: 143, 1979.

Berndt, W.O., Davis, M.E. and Hayes, A.W.: Effects of fungal toxins on renal glutathione content and the relationship of this effect to nephrotoxicity. *Pharmacologist* 21: 215, 1979.

Davis, M.E., Berndt, W.O. and Mehendale, H.M.: Excretion and binding of hexachloro-1,3-butadiene (HCBD), *Society of Toxicology Meeting,* 1980, Abstract # 395.

Davis, M.E., Berndt, W.O. and Mehendale, H.M.: Effects of hexachloro-1,3-butadiene (HCBD) on renal hemodynamics. *Fed. Proc.* 39: 998, 1980.

Davis, M.E., Berndt. W.O. and Mehendale, H.M.: In vivo metabolism of hexachlorobutadiene in male rats. *Pharmacologist* 22: 223, 1980.

Davis, M.E., Berndt, W.O. and Mehendale, H.M.: Diethylmaleate or cysteine pretreatment modifies hexachlorobutadiene nephrotoxicity. *Toxicologist* 1: 9, 1981.

Davis, M.E.: Hexachlorobutadiene nephrotoxicity in piperonyl butoxide treated rats. *Toxicologist* 2: 145, 1982.

Davis, M.E.: Cobaltous chloride effects on hexachlorobutadiene (HCBD) nephrotoxicity. *Fed. Proc.* 41: 1053, 1982.

Davis, M.E.: Buthionine sulfoximine does not protect against hexachlorobutadiene nephrotoxicity. *Fed. Proc.* 42: 871, 1983.

Davis, M.E.: AT-125 (Acivicin) does not prevent hexachlorobutadiene (HCBD) nephrotoxicity. *Toxicologist* 4: 32, 1984.

Reasor, M.J. and Davis, M.E.: Phenobarbital prevention of chlorphentermine-induced pulmonary phospholipidosis. *Fed. Proc.* 43: 360, 1984.

Davis, M.E.: Cysteine effects on renal function and toxicity in conscious rats. *Pharmacologist* 26: 233, 1984.

Davis, M.E.: Cobalt chloride effects on renal function. *Toxicologist* 5: 54, 1985.

Davis, M.E.: Role of atrial natriuretic factor (ANF) in cysteine-induced oliguria. *Fed. Proc.* 44: 1730, 1985.

Davis, M.E.: Comparisons of subacute toxicities of dichloroacetate and trichloroacetate in female rats. *Toxicologist* 6: 161, 1986.

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Davis, M.E. and Berndt, W.O.: Acute toxicity of monochloroacetate in male and female rats. *Fed. Proc.* 46: 435, 1987.

Berndt, W.O., Davis, M.E., and Christenson, W.R.: Interaction of dichloromaleic acid (DCMA) with the hepatotoxin carbon tetrachloride (CCl_4). *Toxicologist* 8: 189, 1988.

Christenson, W.R., Davis, M.E., and Berndt, W.O.: Interaction of dichloromaleic acid (DCMA) with the nephrotoxin maleic acid (MA). *Toxicologist* 8: 188, 1988.

Davis, M.E. and Berndt, W.O.: Monochloroacetate (MCA) increases chloroform ($CHCl_3$) and vinylidene chloride (VDC) toxicities. *Toxicologist* 8: 97, 1988.

Droy, B.F., Davis, M.E., and Hinton, D.E.: Hepatotoxicity of allyl formate and effect on trout liver glutathione. *Toxicologist* 8: 111, 1988.

Holliday, T.L., Davis, M.E., and Hinton, D.E.: Comparison of uptake and distribution of diethylnitrosamine (DENA) in Oryzias latipes and Pimephales promelas. *Toxicologist* 8: 55, 1988.

Davis, M.E. and Berndt, W.O.: Monochloroacetate (MCA) increases toxicity of carbon tetrachloride ($CHCl_3$) and hexachlorobutadiene (HCBD). *Toxicologist* 9: 249, 1989.

Davis, M.E. and Berndt, W.O.: Monochloroacetate (MCA) does not enhance vinylidene chloride (VDC) toxicity in female rats. *FASEB Journal* 3: A1038, 1989.

Berndt, W.O., Christensen, W.R. and Davis, M.E.: Glutathione (GSH) depletion and the toxicity of dichloromaleate (DCMA) and maleate (MA). *FASEB Journal* 3: A417, 1989.

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Wijeweera, J.B., Davis, M.E. and Berndt, W.O.: Monochloroacetate (MCA) does not decrease vinylidene chloride (VDC) toxicity by inhibiting cytochrome P450. *Toxicologist*, 10: 86, 1990.

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Yang, H.M., Davis, M.E. and Berndt, W.O.: Dichloroacetic acid potentiates chloroform hepatotoxicity by increasing $CHCl_3$ bioactivation. *FASEB J.* 5: A1564, 1991.

Wijeweera, J. B. and Davis, M.E.: Effects of monochloroacetate (MCA) pretreatment on vinylidene chloride (VDC) hepatotoxicity: A histological study. *Toxicologist* 12: 240, 1992.

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Santanam, N.; Davis, M.; Denvir, J.; Boskovic,G.; Primerano, D.; Cook, C. and Adams, C. Expression Profiling of miRNA and its Targets in Epicardial Fat From Patients with Coronary Artery Disease. National IDeA Symposium of Biomedical Research Excellence, Washington, DC, June 16-18, 2014.

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Davis, M.E., Akera, T. and Brody, T.M.: Saturable binding of morphine to rat brainstem slices and the effect of chronic morphine treatment. *Res. Comm. Chem. Path. Pharmacol.* 12: 409-418, 1975.

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Davis, M.E., Akera, T. and Brody, T.M.: Reduction of opiate binding to brain-stem slices associated with the development of tolerance to morphine in rats. *J. Pharmacol. Exp. Ther.* 211: 112-119, 1979.

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Davis, M.E., Berndt, W.O. and Mehendale, H.M.: Disposition and nephrotoxicity of hexachloro-1,3-butadiene. *Toxicology* 16: 179-191, 1980.

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Reasor, M.J. and Davis, M.E.: Prevention of chlorphentermine-induced pulmonary phospholipidosis in rats by phenobarbital. *Drug Metab Disp.* 13: 192-196, 1985.

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Davis, Mary E.: Effect of chloroacetic acids on the kidneys. *Environmental Health Perspectives* 69: 209-214 (1986)

Davis, M.E.: Effects of AT-125 on the nephrotoxicity of hexachloro-1,3- butadiene in rats. *Toxicol. Appl. Pharmacol.*, 95: 44-52, 1988.

Droy, B.F., Davis, M.E. and Hinton, D.E.: Mechanism of allyl formate-induced hepatotoxicity in rainbow trout. *Toxicol. Appl. Pharmacol*, 98: 313-324, 1989.

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Christenson, W.R., Davis, M.E. and Berndt, W.O.: The effect of combined treatment with potassium dichromate and maleic acid on renal function in the rat. *Toxicol. Let.* 49: 21-27, 1989.

Davis, M.E.: Introduction to modeling. *Biological Data for Pharmacokinetic Modeling in Risk Assessment* EPA/600/3-90/019 pp. B7-B9, August, 1989.

Davis, M.E.: Subacute toxicity of trichloroacetic acid in male and female rats. *Toxicology*, 63: 63-72, 1990.

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Yang, H.M., Houser, W.H. and Davis,M.E.: Dichloroacetic acid treatment increases hepatic P4502E1 in male and female rats. *Toxicol. Appl. Pharmacol.***141**: 382-388, 1996.

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Todd A. Stueckle, Yongju Lu, Mary E. Davis, Liying Wang, Bing-Hua Jiang, Ida Holaskova, Rosana Schafer, John B. Barnett, and Yon Rojanasakul: Chronic arsenic exposure induces carcinogenic gene signaling networks and neoplastic transformation in lung epithelial cells. Toxicology and Applied Pharmacology 261(2):204-16 (2012) available online: 13-APR-2012 DOI information: 10.1016/j.taap.2012.04.003

Medan, D., Luanpitpong, S., Azad, N., Wang, L., Jiang, B-H., Davis, M.E., Barnett, J.B.m Guo, L. and Rojanasakul, Y.: Multifunctional Role of Bcl-2 in Malignant Transformation and Tumorigenesis of Cr(VI)-Transformed Lung Cells. PLoS ONE, 7(5): e37045, 2012. available online at http://dx.plos.org/10.1371/journal.pone.0037045

Teng, B.; Smith, J.; Rosenfeld, M.J.; Robinet, P.; Davis, M.E. ; Morrison, R.R.; Mustafa, S.J. A1 Adenosine Receptor Deficiency or Inhibition Reduces Atherosclerotic lesions in Apolipoprotein E deficient mice. doi: 10.1093/cvr/cvu033 *Cardiovasc Res* 102(1): 157-165, 2014.

Zhang, Y.; Li, J.; Davis, M.E.; Pei, M. Delineation of in vitro chondrogenesis of human synovial stem cells following preconditioning using decellularized matrix. *Acta Biomaterialia.* 20:39-50, 2015 Available online 8 April 2015 doi:10.1016/j.actbio.2015.04.001 PMID: 25861949; PMCID: PMC4428941

Lin, Y-C.; Huang, J.; Hileman, S.; Martin, K.; Hull, R.; Davis, M.; Yu, H. Leptin Decreases Heart Rate and Increases QT Interval via Its Receptor. A*JP-Heart/Circulatory Physiology* 10.1152/ajpheart.00623.2015, September, 2015 PMID- 25861949

Pizzute, T.; Li, J.; Zhang, Y.; Davis, M.E.; Pei, M.P. Fibroblast growth factor ligand dependent proliferation and chondrogrenic differentiation of synovium-derived stem cells and concomitant adaptation of Wnt/Mitogen-Activated Protein Kinase Signals. *Tissue Engineering Part A* 22: 1036-1046, 2016. DOI: 10.1089/ten.tea.2016.0102. PMID: 27411850; PMCID: PMC4991611

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List authors, title, status, publisher, and publication date

Davis, Mary E. and Reasor, Mark J.: Principles of Toxicology. in *Modern Pharmacology,* Second edition, edited by C.R. Craig and R.E. Stitzel, 1986.

Davis, Mary E. and Reasor, Mark J.: Principles of Toxicology. in *Modern Pharmacology,* Third edition, edited by C.R. Craig and R.E. Stitzel, 1990.

Reasor, Mark J. and Davis, Mary E.: Principles of Toxicology. in *Modern Pharmacology,* Fourth edition, edited by C.R. Craig and R.E. Stitzel, 1994.

Reasor, Mark J. and Davis, Mary E.: Principles of Toxicology. in *Modern Pharmacology,* Fifth edition, edited by C.R. Craig and R.E. Stitzel, 1997.

Davis, Mary E. and Reasor, Mark J.: Principles of Toxicology. in *Modern Pharmacology,* Sixth edition, edited by C.R. Craig and R.E. Stitzel, 2004.

Berndt, William O. and Davis, Mary E.: Renal Methods in Toxicology. in *Principles and Methods of Toxicology,* 2nd edition, edited by A. Wallace Hayes, 1989.

Davis, Mary E. and Berndt, W.O.: Renal Methods in Toxicology. in *Principles and Methods of Toxicology,* 3rd edition, edited by A. Wallace Hayes, 1994.

Davis, Mary E. and Berndt, W.O.: Renal Methods in Toxicology. in *Principles and Methods of Toxicology,* 4th edition, edited by A. Wallace Hayes, 2001.

Davis, Mary E. and Berndt, William O.: Drug-Induced Kidney Disease. in *Textbook of Basic and Clinical Pharmacology*, editor-in-chief Paul L. Munson., 1995.

Technical Reports and Conference Proceedings

National Research Council. *Assessing Human Health Risks of Trichloroethylene: Key Scientific Issues.* Washington, DC: National Academies Press, 2006.

National Research Council. *Review of the Environmental Protection Agency's Draft IRIS Assessment of Tetrachloroethylene.* Washington, DC: National Academies Press, 2010.

National Research Council. *Critical Aspects of EPA's IRIS Assessment of Inorganic Arsenic (Interim Report).* Washington, DC: National Academies Press, 2013.

CURRICULUM VITAE

Judy M. Muller-Delp

PRESENT POSITION AND ADDRESS:

Position: Associate Professor

Office: Department of Physiology and Pharmacology
Center for Interdisciplinary Research in Cardiovascular Sciences
Robert C. Byrd Health Sciences Center
Morgantown, West Virginia, 26506

Phone: (304) 293-2485
Fax: (304) 293-5513
Email: jdelp@hsc.wvu.edu

Home: 939 Camp Mountaineer Rd
Morgantown, WV 26508
Phone: (304) 291-0622

PERSONAL DATA:

Birthdate: January 14, 1965
Place of Birth: Kansas City, Missouri
Social Security #:

EDUCATION AND TRAINING

Degree/Training	Institution	Field	Dates
B.S.	Rockhurst College	Biology/French	May 1987
Ph.D.	University of Missouri	Physiology	December 1992
Postdoctoral	Texas A&M University	Physiology	1992-1996
Postdoctoral	University of Missouri	Physiology	1996-1997

PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS

1987-88: Laboratory Technician, Community Blood Center, Kansas City, Missouri
1988-90: Graduate Teaching Assistant, University of Missouri, Columbia, Missouri
1990-92 Graduate Research Assistant, University of Missouri, Columbia, Missouri
1992-93 Research Associate, Texas A&M University, College Station, Texas
1993-96 Postdoctoral Fellow, Texas A&M University, College Station, Texas
1996-97 Postdoctoral Fellow, University of Missouri, Columbia, Missouri
1997-1999 Assistant Professor, Sam Houston State University, Huntsville, Texas

1999-2000	Associate Research Scientist, Texas A&M University, College Station Texas
2000-2004	Assistant Professor, Texas A&M University, College Station Texas
2004-2005	Associate Professor, Texas A&M University. College Station, Texas
2005-present	Associate Professor, West Virginia University, Morgantown, West Virginia

GRANTS AND FELLOWSHIPS

1990-1992 NIH Training Grant Research Assistantship

1993-1996 NIH Individual National Research Service Award

1998-2000 Principal Investigator, Beginning Grant-In-Aid, Texas Affiliate of the American Heart Association (30% Effort)
Title: Aging-Induced Adaptation in Vasoreactive Properties of Skeletal Muscle Arterioles
Amount: $82,744

1999-2002 Co-Investigator: NASA Grant (25% Effort)
Title:Adaptations of Visceral and Cerebral Resistance Arteries to Simulated Microgravity,
Project P.I.: Michael Delp
Amount: $446,214

2000-2005 Co-Investigator, NIH R01 (40% Effort)
Title: Chronic Coronary Occlusion, Exercise Training and NO
Project P.I.: Janet L. Parker
Amount: $1,800,000

2001-2002 Principal Investigator, Grayson-Jockey Club Research Foundation
Title: Mares with Delayed Uterine Clearance: Is nitric oxide involved?
Amount: $94,358

2001-2002 Principal Investigator, Texas A&M College of Education
Title: Effects of Age and Gender on Reactivity of Coronary Resistance Arterioles
Amount: $4,000

2001-2003 Principal Investigator, NIH R21 (25% Effort)
Title: Aging and Endothelial Function of Muscle Arterioles
Amount: $410,440

2001-2007 Co-Investigator, NASA grant (15% Effort)
Title: Arterial Remodeling and Functional Vascular Adaptations Induced by Microgravity,
Project P.I.: Michael Delp
Amount: $1,126,693

2002-2004 Principal Investigator, American Heart Association, Texas Affiliate (25% Effort)
Title: Mechanisms of Aging-Induced Impaired Myogenicity of Rat Skeletal Muscle Arterioles
Amount: $124,000

2005-2009 Principal Investigator, NIH R01 (35% Effort)
Title: Aging, Estrogen, and Coronary Endothelial Function
Amount: $1,818,750

2006-2007 Co-Investigator, NASA (25% Effort)
Title: Adaptations of Cerebral Arteries to Simulated Microgravity
Project PI: Michael Delp
Amount: $152,570

2007-2012 Investigator, NIH R01 (5% Effort)
Title: Remote Microvascular Dysfunction after Particulate Matter Exposure
Project PI: Tim Nurkiewicz
Amount: $2,082,095

PENDING GRANTS

2008-2013 Principal Investigator, NIH R01 (25% Effort)
Title: Microvascular Aging and eNOS Uncoupling
Amount: $1,842,088

SOCIETY MEMBERSHIPS

American Physiological Society
American Microcirculatory Society
American Heart Association

SOCIETY SERVICE

American Microcirculatory Society Membership Committee
American Microcirculatory Society; Programming Committee Chair

REVIEW ACTIVITIES

Journal Reviews
American Journal of Physiology: Heart and Circulatory Physiology
American Journal of Physiology: Gastrointestinal and Liver Physiology
Cardiovascular Research
Circulation
Journal of Applied Physiology

Journal of Physiology
Microcirculation
Immunopharmacology
Medicine in Science Sports and Exercise
International Journal of Biometeorology
Mechanisms of Ageing and Development
The Journal of Clinical Endocrinology & Metabolism

Grant Reviews
American Heart Association: Western States Consortium Committee 2B (2002-2004)
Amercian Heart Association: Vascular Biology and Blood Pressure/ Regulation (2004-present)
Veterans Administration Merit Review Subcommittee for Cardiovascular Programs (2007-present)

AWARDS AND HONORS

1987:	Graduation with honors, Cum Laude, Rockhurst College
1991:	Third Place Presentation, Research and Creative Activities Forum, University of Missouri-Columbia
1992:	Third Place Presentation, Research and Creative Activities Forum, University of Missouri, Columbia
1996:	Microcirculatory Society August Krogh Young Investigator Award
1997:	XXXIII International Congress of Physiological Sciences Travel Award
2002:	College of Education, Texas A&M University, Development Council Outstanding New Faculty Award
2005:	Texas Chapter of the American College of Sports Medicine Spring Lecture Tour
2007:	Fellow, American Physiological Society, Cardiovascular Section

STUDENT ADVISEES

Name	Date	Degree	Current Status
Stacy A. Wunsch	1998-2000	M.A.	Corporate Fitness
Katheryn E. Nichol	2000-2003	Ph.D.	Postdoc, University of California, Irvine
Robert D.Shipley	2000-2003	Ph.D.	Research Scientist, Boston Scientific
Se Jeong Kim	2002-2005	M.S.	
Amanda Jo LeBlanc	2004-present	Ph.D.	
Amy Sindler	2006-present	Ph.D.	
Lori Kang	2006-present	Ph.D.	
Casey McCroskey	2006-2007	Undergraduate Summer Internship	

POSTDOCTORAL ADVISEES:

Name	Date	Current Status
Rafael Reyes	2006-present	

STUDENT ADVISEE AWARDS

2001:	American College of Sports Medicine Foundation Research Award: Awarded to Robert Shipley
2002:	First Place Presentation, Life Sciences Division, Graduate Sudent Research Week, Texas A&M University: Awarded to Kathryn Nichol
2003:	Texas Chapter American College of Sports Medicine, Third Place Student Manuscript Research Award, Doctoral Category: Awarded to Kathryn Nichol
2003:	Texas Chapter American College of Sports Medicine, First Place Student Poster Presentation Award, Undergraduate Category: Awarded to Melissa Clark
2004:	American College of Sports Medicine Foundation Research Award: Awarded to Patrick Dougherty
2007:	Zweifach Travel Award of the American Microcirculatory Society: Awarded to Lori Kang
2007:	APS David Bruce Award for Excellence in Undergraduate Research: Awarded to Casey McCroskey
2007:	APS Cardiovascular Section Research Recognition Award: Awarded to Amanda Jo LeBlanc
2007:	Travel Award of the American Microcirculatory Society: Awarded to Amanda Jo LeBlanc

TEACHING EXPERIENCE (* graduate level)

Course Title	Institution	Credit Hr	Contact Hr	Dates
Elements of Physiology	UMC	5	6 hrs/wk	1988-92
*Medical Physiology	Texas A&M	9	1 hr lecture	1994
*Physiology of the Heart	Texas A&M	2	6 hrs	1994
Biomechanics	Sam Houston State	3	6 hrs/wk	1997-98
Fitness for Living	Sam Houston State	2	2 hrs/wk	1997-98
*Research Seminar	Sam Houston State	3	3 hrs/wk	1997
Study of Human Disease	Sam Houston State	3	3hrs/wk	1998
*Advanced Physiology of Exercise	Sam Houston State	3	3hrs/wk	1999
Tests and Measurement	Texas A&M	3	3hrs/wk	2000-03
*Seminar in Exercise Physiology	Texas A&M	1	2hrs/wk	2001
Exercise in Health	Texas A&M	3	3hrs/wk	2003-05
*Applied Exercise Physiology	Texas A&M	3	3hrs/wk	2004-05
*Advanced Cardiovascular Physiology	West Virginia Univ.	3	3hrs/wk	2005-07
Human Function	West Virginia Univ	10	5 lectures	2007

BIBLIOGRAPHY

Refereed Research Papers:

Myers PR, Muller JM, and Tanner MA: Effects of oxygen tension on endothelium-dependent responses in canine coronary microvessels. *Cardiovasc. Res.* 25: 885-894, 1991.

Muller JM, Laughlin MH, and Myers PR: Vasoactivity of isolated coronary arterial microvessels: influence of albumin. *Microvasc. Res.* 46: 107-115, 1993.

Muller JM, Myers PR, and Laughlin MH: Exercise training alters myogenic responses in porcine coronary resistance arteries. *J. Appl. Physiol.* 75(6): 2677-2682, 1993.

Parker JL, Oltman CL, Muller JM, Myers PR, Adams HR, and Laughlin MH: Effects of exercise training on regulation of tone in coronary arteries and arterioles. *Med. Sci. Sports Exercise* 26: 1252-1261, 1994.

Muller JM, Myers PR, and Laughlin MH. Vasodilator responses of coronary resistance arteries of exercise trained pigs. *Circulation* 89: 2308-2314, 1994.

Muller JM, Davis MJ, and Chilian WM. Coronary arteriolar flow-induced vasodilation signals through tyrosine kinase. *Am. J. Physiol Heart Circ Physiol.* 270: H1878-H1884, 1996.

Muller JM, Chilian WM, and Davis MJ. Integrin signaling transduces shear stress-dependent vasodilation of coronary arterioles. *Circ. Res.* 80: 320-326, 1997.

Woodman CR, Muller JM, Laughlin MH, and Price EM. Induction of nitric oxide synthase mRNA in coronary resistance arteries isolated from exercise trained pigs. *Am. J. Physiol Heart Circ Physiol.* 273: H2575-H2579, 1997.

Laughlin, MH, and Muller JM. Vasoconstrictor responses of coronary resistance arteries of exercise trained pigs. *J. Appl. Physiol.* 84(3): 884-889, 1998.

Woodman CR, Muller JM, Laughlin MH, and Price EM. Flow regulation of ecNOS and Cu/Zn SOD mRNA expression in porcine coronary arterioles. *Am. J. Physiol Heart Circ Physiol.* 276: H1058-H1063, 1999.

Muller JM, Davis MJ, Kuo L, and Chilian WM. Changes in endothelial Ca++ during shear stress- and agonist-induced vasodilation. *Am. J. Physiol Heart Circ Physiol.* 276: H1706-H1714, 1999.

Wilkerson MK, Muller-Delp JM, Colleran PN, and Delp MD. Effects of hindlimb unloading on cerebral, splenic, and mesenteric resistance artery morphology. *J. Appl. Physiol.* 87: 2115-2121, 1999.

Delp MD, Colleran PN, Wilkerson MK, McCurdy MR, and Muller-Delp JM. Structural and functional remodeling of skeletal muscle microvasculature is induced by simulated microgravity. *Am. J. Physiol Heart Circ Physiol.* 278: H1866-H1873, 2000.

McCurdy, MR, Colleran PN, Muller-Delp JM, and Delp MD. Effects of fiber composition and hindlimb unloading on the vasodilator properties of skeletal muscle arterioles. *J. Appl. Physiol.* 89: 398-405, 2000.

Wunsch SA, Muller-Delp JM, and Delp MD. Time course of vasodilation in resistance arterioles from muscle composed of different fiber types. *Am. J. Physiol Heart Circ Physiol.* 279: H1715-1723, 2000.

Miller TA, Lesniewski LA, Muller-Delp JM, Majors AK, Scalise D, and Delp MD. Hindlimb unloading induces a collagen isoform shift in the soleus muscle of the rat. *Am. J. Physiol Regulatory, Integrative, Comparative Physiol.* 281: R1710-R1717, 2001.

Muller-Delp JM, Spier SA, Ramsey MW, Lesniewski L, Papadopoulos A, Humphrey JD, and Delp MD. Effects of aging on vasoconstrictor and mechanical properties of rat skeletal muscle arterioles. *Am. J. Physiol Heart Circ Physiol.* 282: H1843-H1854, 2002.

Muller-Delp JM, Spier SA, Ramsey MW, and Delp MD. Aging impairs endothelium-dependent vasodilation in rat skeletal muscle arterioles. *Am. J. Physiol Heart Circ Physiol.* 283: H1662-H1672, 2002.

Muller-Delp JM, Lubahn DB, Nichol KE, Phillips BJ, Price EM and Laughlin MH. Regulation of nitric oxide-dependent vasodilation in coronary arteries of estrogen receptor-α deficient mice. *Am. J. Physiol Heart Circ Physiol* .285: H2150-H2157, 2003.

Fogarty JA, Muller-Delp JM, Delp MD, Mattox ML, Laughlin MH, and Parker JL. Exercise training enhances vasodilation responses to $VEGF_{165}$ in porcine coronary arterioles exposed to chronic coronary occlusion. *Circulation* 109: 664-670, 2004.

Spier SA, Delp MD, Meininger CJ, Donato AJ, Ramsey MW, and Muller-Delp JM. Effects of ageing and exercise training on endothelium-dependent vasodilatation and structure of rat skeletal muscle arterioles. *J Physiol.*556.3: 947-958, 2004.

Shipley RD and Muller-Delp JM. Time course of flow-induced vasodilation: Contributions of dilator and constrictor mechanisms. *Am. J. Physiol Heart Circ Physiol.* 288: 1499 – 1507, 2005.

Shipley RD and Muller-Delp JM. Aging decreases vasoconstrictor responses of coronary resistance arterioles through endothelium-dependent mechanisms. *Cardiovasc. Res.* 66(2): 374-83, 2005.

Korzick DH, Muller-Delp JM, Dougherty PJ, Heaps CL, Bowles DK and Krick KK. Exaggerated coronary vasoreactivity to endothelin-1 in aged Rats: role of protein kinase C. *Cardiovasc. Res.* 66(2): 384-92, 2005.

Spier SA, Delp MD, Stallone JN, Dominguez JM II, and Muller-Delp JM. Exercise Training Enhances Flow-Induced Vasodilation in Skeletal Muscle Resistance Arteries of Aged rats: Role of PGI_2 and NO. *Am. J. Physiol Heart Circ Physiol.* 292: H3119-H3127, 2007.

Delp MD, Behnke BJ, Spier SA, Wu G, and Muller-Delp JM. Aging diminishes endothelium-dependent vasodilation and tetrahydrobiopterin content in rat skeletal muscle arterioles. *J Physiol. in press,* 2007.

Prisby RD, Muller-Delp JM, Delp MD, and Nurkiewicz TR. Age, Gender and Hormonal Status Modulate the Vascular Toxicity of the Diesel Exhaust Extract Phenanthraquinone. *Journal of Toxicology and Environmental Health. Part A, in press,* 2008.

LeBlanc AJ, Shipley RD, and Muller-Delp JM. Aging decreases vasodilation in coronary arterioles through impairments in nitric oxide signaling. *Cardiovasc. Res. submitted*, 2007.

Nichol K, Shipley RM, Reyes R, Dougherty PJ, Prisby R, and Muller-Delp JM. Exercise training enhancement of nitric oxide-dependent dilation of cerebral resistance arteries is age specific. *J. Physiol. submitted*, 2007.

Invited Papers:

Laughlin MH, Oltman CL, Muller JM, Myers PR, and Parker JL. Adaptation of the coronary circulation to exercise training. In AHA Monograph, Cardiovascular Response to Exercise. New York: Futura Publishing Company, Inc., 1993.

Davis MJ, Kuo L, Chilian WM, and Muller JM. Methods for the study of isolated, perfused microvessels. In Clinically Applied Microcirculation Research. New York: CRC Press, 1995.

Muller JM, Davis MJ, and Chilian WM. Integrated regulation of pressure and flow in the coronary microcirculation. *Cardiovascular Res.* 32: 668-678, 1996.

Davis MJ, Muller JM, Sharma N, Kuo L, and Chilian WM. Mechanisms of shear stress-induced production of nitric oxide from coronary endothelium. In International Proceedings of the 20th European Conference on Microcirculation. Bologna, Italy: Monduzzi Editore, 1998.

Muller-Delp JM. Aging-induced adaptations of microvascular reactivity. *Microcirculation* 13(4):301-14, 2006.

Abstracts:

Muller JM, Myers PR, Tanner MA, and Laughlin MH: The effect of exercise training on sensitivity of porcine resistance arterioles to bradykinin. *FASEB J.* 5: A658, 1991.

Gute DC, Muller JM, McAllister RM, and Laughlin MH. Effects of exercise training on femoral arterial muscle in miniature swine. *Med. Sci. Sports Exercise* 23: S88, 1991.

Muller JM, Myers PR, Tanner MA, and Laughlin MH. Responsiveness of porcine coronary arterioles to vasodilator agents is not influenced by the presence of albumin in the bathing medium. *Proc. Fifth World Congress for Microcirculation* 1: 77, 1991.

Muller JM, Myers PR, Tanner MA, and Laughlin MH. Myogenic responses of coronary arterioles from exercise trained pigs. *Faseb J.* 6: A2080, 1992.

Muller JM, Myers PR, Tanner MA, and Laughlin MH. Adenosine-induced vasodilator responses in

coronary resistance arteries from exercise trained pigs. Med. Sci. Sports Exercise 24: S116, 1992.

Laughlin MH, Muller JM, Thorne PK, and Huxley VH. Flow-induced vasodilation in coronary resistance arteries from exercise trained pigs. *FASEB J.* 7: A891, 1993.

Muller JM, Myers PR, and Laughlin MH. Inhibition of nitric oxide synthase suppresses enhanced bradykinin-induced relaxation in coronary resistance arteries of trained pigs. *FASEB J.* 7: A896, 1993.

Muller JM, Davis MJ, Davidson JA, and Chilian WM. Blockade of tyrosine kinase inhibits flow-induced vasodilation of coronary arterioles. *Circulation* 90: I429, 1994.

Muller JM, Davidson JA, Chilian WM, and Davis MJ. Agonist- and flow-induced alterations in endothelial [Ca++]i of isolated coronary arterioles. *FASEB J.* 9: A32, 1995.

Muller JM, Davis MJ, and Chilian WM. Blockade of tyrosine kinase hinders flow-induced vasodilation of coronary arterioles. *Microcirculation* 2: 81, 1995.

Muller JM, Chilian WM, Davidson JA, and Davis MJ. Integrin signaling transduces flow-dependent vasodilation of coronary arterioles. *Microcirculation* 3: 99, 1996.

Muller JM and Price EM. Molecular approaches for identification of exercise-induced alterations in vascular gene expression. *FASEB J.* 11: A291, 1997.

Wilkerson, MK., Delp JM, Colleran PN, and Delp MD. Effects of 14-day hindlimb unloading on rat cerebral, splenic, and mesenteric arterial morphology. Grav. Space Biol. Bull. 12: 22, 1998.

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Spier, SA, Delp MD, and Muller-Delp J. Effects of aging on endothelium-dependent vasodilation in skeletal muscle arterioles. *J. Aging Phys. Activ.* 8: 290, 2000.

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Spier SA, Delp MD, and Muller-Delp, J. Exercise training enhances flow-induced vasodilation of skeletal muscle arterioles from aged rats. *FASEB J.* 15: LB13, 2001.

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Colleran, PN, Muller-Delp J, and Delp MD. Vascular responsiveness of renal arterioles is not altered by hindlimb unloading. *Med. Sci. Sports Exerc.* 33: S19, 2001.

Wilkerson, MK, Muller-Delp J, Golding EM , Bryan RM and Delp MD. Head-down tail-suspension alters vasomotor responses of middle cerebral arteries. *FASEB J.* 16: A48, 2002.

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Shipley RD, and Muller-Delp JM. Time course and role of nitric oxide in flow-induced vasodilation in rat skeletal muscle arterioles. *FASEB J.* 16: A766, 2002.

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Nichol KE, and Muller-Delp JM. Exercise reverses aging effect in cerebral arterioles. *Stroke* 35 (1): 308, 2004.

Dougherty PJ, and Muller-Delp JM. Voltage-gated Ca^{2+} channels in skeletal muscle arterioles: Effects of aging. *FASEB J.* 18: A252, 2004.

Kim SJ, and Muller-Delp JM. Activity of voltage-gated potassium channels in skeletal muscle arterioles: Effects of age and fiber type. *FASEB J.* 18: A253, 2004.

Spier SA, Muller-Delp JM, Meininger CJ, Donato AJ, Ramsey MW, and Delp MD. Effects of aging and exercise training on endothelium-dependent vasodilation and structure of skeletal muscle arterioles. *FASEB J.* 18: A94, 2004.

Muller-Delp JM, Stallone JN, Sellers MM, Spier SA, and Delp MD. Cyclooxygenase expression and activity in skeletal muscle arterioles: Effects of age and exercise training. *The Physiologist* 47: 285, 2004.

Dougherty PJ, Shipley RS, and Muller-Delp JM. Effect of aging and exercise training on thromboxane-induced vasoconstriction in coronary arterioles. *The Physiologist* 47: 291, 2004.

Muller-Delp JM, Nichol KE, and Clark M. Age and exercise training alter endothelial phenotype in cerebral resistance arteries. *Circulation (Suppl)* 110: III-484, 2004.

Dougherty PJ, Shipley RD, Clark MJ, and Muller-Delp JM. Aging decreases ETA receptor-mediated vasoconstriction in coronary arterioles. *FASEB J* 19: A688, 2005.

LeBlanc AJ, Shipley RD, and Muller-Delp JM. Effect of aging on nitric oxide signaling in coronary arterioles: Role of phosphoinositol 3-kinase. *FASEB J* 20: A1397, 2006.

LeBlanc AJ, Nichol KE, Woodman CR, Shipley RD, Prisby RD, and Muller-Delp JM. NOS expression and activity in cerebral resistance arteries: Effects of aging and exercise training. *FASEB J* 20: A813, 2006.

Sindler AL, Morgan S, Reyes RA, Peterson JM, Frisbee JC, Muller-Delp J, Bryner RW, and Hileman SM. Chronic Exercise Training Increases Insulin Sensitivity in Obese Zucker Rats Potentially Via Hypothalamic Adiponectin Receptor 1. *Med Sci Sports Exercise* 38(11) Suppl 1:S39, 2006.

LeBlanc AJ, Behnke BJ, Wu G, Muller-Delp JM, and Delp MD. Aging Decreases NOS Regulatory Mechanisms in Skeletal Muscle Resistance Arteries. *Med Sci Sports Exercise* 38(11) Suppl 1:S3, 2006.

Reyes RA, Nichol KE, Spier SA, LeBlanc AJ, and Muller-Delp, JM. Effects of Age and Exercise Training on Nitric Oxide Bioavailability in Cerebral Resistance Arteries. *Med Sci Sports Exercise* 38(11) Suppl 1:S4, 2006.

Frisbee SJ, Muller-Delp JM, Goodwill A, and Frisbee JC. Influences of age and gender on cardiovascular disease risk factor associated inflammation. *Circulation* 115: e214 - e301: P-117, 2007.

Kang LS, LeBlanc AJ, Dougherty PJ, Shipley RD, and Muller-Delp JM. Aging and gender alter thromboxane-induced vasoconstriction and thromboxane receptor expression in coronary microvasculature. *FASEB J* 21: A844, 2007.

Reyes RA, LeBlanc AJ, and Muller-Delp JM. Thromboxane induced-vasoconstriction in coronary resistance arteries: Effects of age and ovarian hormone status
FASEB J 21: A845.

LeBlanc AJ, Reyes RA, and Muller-Delp JM. Beyond Venus and Mars: The effect of gender and age on endothelial dysfunction in coronary arterioles. *FASEB J* 21: A1227, 2007.

Prisby RD, Muller-Delp J, and Nurkiewicz TR. Affects of age, gender, and estrogen on endothelium-dependent vasodilation subsequent to phenanthraquinone exposure. *FASEB J* 21: A1234, 2007.

McCroskey C, Reyes RA, LeBlanc AJ, and Muller-Delp JM. Endothelial-dependent and -independent vasodilation in cerebral resistance arteries: Effects of age and estrogen Status. *FASEB J* 21: A1238, 2007.

LeBlanc AJ, Reyes RA, and Muller-Delp JM. At the heart of the matter: Gender- and age-related alterations in NO-mediated endothelium-dependent vasodilation in coronary arterioles. *Microcirculation* 14: 526, 2007.

Morgan, SM, Kang LS, Sindler AL, and Muller-Delp JM. Voltage-gated potassium channel regulation of myogenic activity increases with age in soleus muscle arterioles. *Microcirculation* 14: 547, 2007.

Reyes RA, LeBlanc AJ, McCroskey C, Kang LS, and Muller-Delp JM. NO contribution to flow-induced vasodilation in cerebral resistance arteries: effects of age and estrogen status. *Microcirculation* 14: 549, 2007.

SYMPOSIUM PRESENTATIONS

October 1992
Annual Meeting of American College of Sports Medicine: Central States Chapter, Stillwater, OK
Title: Effects of exercise training on vasomotor responses of porcine coronary arterioles

November 1994
Japanese-American Workshop on the Coronary Circulation, San Francisco, CA
Title: Flow-induced regulation of coronary arteriolar tone

April 1995
North American Vascular Biology Organization Session on the Microcirculation, Atlanta, GA
Title: Agonist- and flow-induced alterations in endothelial [Ca++]i of isolated coronary arterioles

June 1997
International Congress of Physiological Sciences, St. Petersburg, Russia
Title: The role of calcium in regulation of nitric oxide production in coronary microvessels

February 1998
First Annual Endothelome Conference, Kurashiki, Japan
Title: Flow-induced regulation of coronary arterioles: Acute and long-term responses

May 2003
Annual Meeting of American College of Sports Medicine, San Francisco, CA
Title: Effects of Age and Exercise on Endothelium-Dependent Function of Skeletal Muscle Arterioles

April 2004
National Experimental Biology Meeting
Title: Aging, Exercise Training, and Skeletal Muscle Resistance Vasculature

August 2007
Eighth World Congress for Microcirculation
Title: Coronary microvascular endothelial function: effects of age and gender

INVITED SEMINARS

June 1992
Seminar, Department of Physiology, Louisiana State University Medical Center, Shreveport, LA
Title: Effects of exercise training on vasomotor reactivity of porcine coronary arterioles

July 1992
Seminar, Department of Medical Physiology, Texas A&M University Health Sciences Center, College Station, TX
Title: Effects of exercise training on vasomotor reactivity of porcine coronary arterioles

September 1995
Seminar, Department of Veterinary Biomedical Sciences, University of Missouri, Columbia, MO
Title: Mechanisms of coronary arteriolar flow-induced vasodilation

January 1996
Seminar, Department of Health and Kinesiology, Texas A&M University, College Station, TX
Title: Exercise training-induced adaptations of the coronary resistance vasculature

January 1998
Seminar, DeBakey Heart Center, Baylor College of Medicine, Houston, TX
Title: Flow-induced regulation of coronary arterioles: Acute and long-term responses

November 1999
Seminar, Department of Integrative Physiology, University of North Texas Health Sciences Center
Title: Aging-induced alterations of the vasoreactivity of skeletal muscle arterioles

December 2002
Seminar, Biology of Exercise Program, University of California Davis
Title: Aging, exercise training, and muscle arteriolar function

April 2004
Seminar, Department of Integrative Physiology, University of Colorado
Title: Effects of age and exercise in skeletal muscle resistance vasculature

December 2004
Seminar, Department of Exercise and Sports Science, East Carolina University
Title: Effects of Age and Exercise on Cerebral Resistance Arteries

January 2005
Seminar, Department of Physiology and Pharmacology, West Virginia University
Title: Age-Induced Adaptations of the Coronary Microcirculation

March 2005
Texas Chapter of the American College of Sports Medicine, Spring Lecture Tour
Title: Aging, Exercise Training, and Skeletal Muscle Resistance Vasculature
Presented to: Department of Kinesiology, University of Texas – Permian Basin

Texas Chapter of the American College of Sports Medicine, Spring Lecture Tour
Title: Vascular Function in the Aging Heart
Presented to: Department of Physiology, University of Texas Health Sciences Center - San Antonio

Department of Integrative Physiology, University of North Texas Health Sciences Center
Department of Health and Kinesiology, University of Texas – Tyler
Institute for Exercise and Environmental Medicine, Dallas, Texas

September 2006
Seminar, Noll Laboratory, Penn State University
Title: Gender-Specific Effects of Aging in the Coronary Resistance Vasculature

August 2007
Seminar, Hypertension Center, University of Florida
Title: Coronary microvascular endothelial function: effects of age and gender

CURRICULUM VITAE
Aaron D. Erdely

Personal

Home Address:	1010 Joshua Way Morgantown, WV 26508
Work Address:	National Institute for Occupational Safety and Health 1095 Willowdale Rd. MS L2015 Morgantown WV, 26505-2888
Work Phone:	(304) 285-5903
E-mail:	efi4@cdc.gov

Education/Positions

- **2014-present** Research Biologist, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health (CDC-NIOSH), Health Effects Laboratory Division, Pathology and Physiology Research Branch, Morgantown, WV.
- **2022-present** Adjunct Professor, Department of Physiology and Pharmacology, School of Medicine, West Virginia University, Morgantown, WV.
- **2016-2022** Adjunct Associate Professor, Department of Physiology and Pharmacology, School of Medicine, West Virginia University, Morgantown, WV.
- **2011-2016** Adjunct Assistant Professor, Department of Physiology and Pharmacology, School of Medicine, West Virginia University, Morgantown, WV.
- **2013-2014** Senior Service Fellow, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health (CDC-NIOSH), Health Effects Laboratory Division, Pathology and Physiology Research Branch, Morgantown, WV.
- **2005-2013** Associate Service Fellow, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health (CDC-NIOSH), Health Effects Laboratory Division, Toxicology and Molecular Biology Branch, Morgantown, WV. *Advisor Dr. Petia Simeonova from 2005-2009. Independent laboratory beginning 2010 in Pathology and Physiology Research Branch.*
- **2003-2005** Postdoctoral Fellow, Department of Molecular Genetics and Biochemistry, University of Pittsburgh, Pittsburgh, PA. *Advisor Dr. Sidney Morris Jr.*
- **2002-2003** Postdoctoral Fellow, Dept. of Physiology and Pharmacology, WVU, Morgantown, WV. *Advisor Dr. Chris Baylis.*
- **1998-2002** Doctor of Philosophy West Virginia University, Department of Physiology and Pharmacology, Morgantown, WV, PhD.
  Dissertation: Progression of Chronic Renal Disease in Several Animal Models; Possible role of decreased renal nitric oxide production as a primary causative factor. Advisor: Dr. Chris Baylis.
- **1994-1998** California University of Pennsylvania, California, PA. *Bachelor of Science in Biology.*

Awards and Honors

2001 1st place E.J. Van Liere Research Award: Competitive award for outstanding abstract and oral presentation among all graduate students of all years in the WVU School of Medicine.

2001 1st place Julie Betschart Research Award: Competitive award for outstanding abstract/poster presented at a national meeting in the Department of Physiology and Pharmacology.
2002 1st place E.J. Van Liere Research Award
2008 Award for "Best Overall Poster" by the Allegheny-Erie Chapter of the Society of Toxicology
2009 Charles C. Shepard Science Award nominee which recognizes excellence in science at CDC/ATSDR
2009, 2014, 2015, 2018 (2 papers), 2019, 2021, 2022 – Alice Hamilton Award Finalist for Excellence in Occupational Safety and Health
2014 Alice Hamilton Award – Honorable Mention for Excellence in Occupational Safety and Health in the Methods and Laboratory Science Category
2016 Young Investigator Award – Inhalation and Respiratory Specialty Section Society of Toxicology
2018 Alice Hamilton Award Winner for Excellence in Occupational Safety and Health in the Methods and Laboratory Science Category
2018 Impact Award in the Cardiovascular Specialty Section of the Society of Toxicology
2018 Paper of the Year Award for the Nanotoxicology Specialty Section of the Society of Toxicology
2018 Paper of the Year Award for the Inhalation and Respiratory Specialty Section of the Society of Toxicology
2019 Charles C. Shepard Science Award nominee which recognizes excellence in science at CDC/ATSDR
2019 Alice Hamilton Award Winner for Excellence in Occupational Safety and Health in the Epidemiology & Surveillance Category
2020 Paper of the Year Award for the Nanoscience and Advanced Materials Specialty Section of the Society of Toxicology
2021 Particle and Fibre Toxicology Best Paper Award
2022 Alice Hamilton Award – Honorable Mention for Excellence in Occupational Safety and Health in the Methods and Laboratory Science Category

Meetings/Societies

2000, 2002, 2003, 2007 – Experimental Biology
2000-2004 – American Society of Nephrology Conference
2004 – 12th International Congress of Immunology
2005, 2010 – American Thoracic Society
2005 – Health Effects of Welding Conference, NIOSH, Morgantown, WV
2005 – Application of Systems Biology Methodologies to Environmental Research
2005 – NanoAerosols Meeting
2006-2019 – Society of Toxicology (Member since 2010)
2006, 2008, 2010, 2012-2018 – Allegheny-Erie Society of Toxicology
2010 – Nanomaterials and Worker Health Conference
2010, 2012, 2014, 2016, 2018 – Nanotechnology Research Center Meeting
2015 – Composites and Advanced Materials EXPO (CAMX)
2016 – 8th International Nanotoxicology Congress (Boston)

2017 – 8th International Symposium on Nanotechnology, Occupational and Environmental Health, Denmark 2017
2018 – 9th International Nanotoxicology Congress (Germany)
2018 – 2nd Quantifying Exposure to Engineered Nanomaterials Conference

Committees/Offices/Appointments - Current

- Associate member of the graduate faculty of Physiology and Pharmacology, West Virginia University, 2011-present (Currently an Adjunct Professor)
- Coordinator of the Cardiovascular Pathophysiology Team of the Pathology and Physiology Research Branch; 2018-present
- Coordinator of the NIOSH Life Cycle Toxicity Team; 2018-present
- Deputy Director of the Center for Inhalation Toxicology (iTOX) at West Virginia University; 2019-present
- NIOSH Animal Care and Use Committee; 2019-present
- Editor-in-Chief of *Particle and Fibre Toxicology*; 2021-present

Committees/Offices/Appointments - Past

- Presidential Cycle of Allegheny-Erie Society of Toxicology; May 2012-April 2015
- Councilor Allegheny-Erie Society of Toxicology; May 2015-April 2016
- Vice-President Allegheny-Erie Society of Toxicology; May 2016-April 2017
- Presidential Cycle of Nanotoxicology Specialty Section of the Society of Toxicology; May 2016-present.
- NIOSH representative to the CDC Workforce Task Force, Laboratory Workforce Working Group; 2019
- Associate member of the graduate faculty of Chemical and Biomedical Engineering, West Virginia University; 2019-2020

Journal Review (Highlighted)

Circulation Research, Environmental Toxicology, Inhalation Toxicology, Nanotoxicology, Particle and Fibre Toxicology, PLOS ONE, Toxicological Sciences, Toxicology, Toxicology and Applied Pharmacology, Critical Reviews in Toxicology.

Research Support

Current:

- Project Title: Health risk evaluation of nano-enabled materials in construction (NIOSH/NORA 9390G1X: 10/01/2020-09/30/2025)
    - Co-PI-Aaron Erdely; Co-PI Emily Lee
- Project Title: Impact of particle and ozone inhalation co-exposure on alveolar epithelial regeneration (NIH/NIEHS ES031253: 05/012020-02/28/2025)
    - PI – Salik Hussain; Co-I Aaron Erdely
- Project Title: Toxicity along the life cycle of a MWCNT-reinforced construction composite (NIOSH/NTRC 9390BN6: 10/01/2019-09/30/2022)
    - PI – Vamsi Kodali; Co-I Aaron Erdely (I mentor Dr. Kodali)

- Project Title: Maternal Nanomaterial Exposures: Fetal Microvascular Endpoints and Programming (NIH R01 ES015022: 2017-2022)
    - PI – Timothy Nurkiewicz; Co-I Aaron Erdely
- Project Title: Genotoxicity and tumorigenic potential of carbon nanotubes and fibers (NIOSH/NORA 9390HTV: 10/01/2021-09/30/2025)
    - Co-PI's Vamsi Kodali/Patti Zeidler-Erdely; Co-I Aaron Erdely

Pending:

- None

Completed:

- Project Title: Tiered pulmonary risk assessment of organomodified nanoclay composites (10/01/2017-09/30/2020)
    - PI – Todd Stueckle; Co-I Aaron Erdely
- Project Title: Systemic Health Implications of Occupational Nanomaterial Exposure (1R01OH010828-01: 9/30/2015-9/29/2020)
    - PIs – Matthew Campen and Andrew Ottens; Co-I Aaron Erdely
- Project Title: Toxicological evaluation of pulmonary exposure to boron nitride nanotubes (10/01/2016-09/30/2020)
    - Co-PI – Aaron Erdely; Co-PI's Jenny R. Roberts and Dale Porter
- Project Title: Evaluation of welding fume as a lung carcinogen in mice exposed by inhalation (10/01/2014 – 9/30/2019)
    - PI – Patti Zeidler-Erdely; Co-I Aaron Erdely
- Project Title: Structure-based Computational Models to Predict Nanotoxicity (10/01/2015 – 9/30/2019)
    - PI – Naveena Yanamala; Co-I Aaron Erdely
- Project Title: Generation & Characterization of Aerosols from Nanocomposites (10/01/2016 – 09/30/2019)
    - PI – Lorenzo Cena/Eun Gyung (Emily) Lee; Co-I Aaron Erdely
- Project Title: Toxicity assessment of CNT and CNF from U.S. facilities (10/01/2015-09/30/2019).
    - PI – Aaron Erdely
- Project Title: Occupational and environmental co-exposures: prospects of novel lung pathologies and susceptibilities. WVCTSI:CTR IDeA (09/07/2018-06/30/2019)
    - Co-PI's – Aaron Erdely and Salik Hussain
- Project Title: Epidemiology Study of US Carbon Nanotube & Nanofiber Workers (10/01/2012-09/30/2015). **Renewed for 10/01/2015-09/30/2018.
    - Co-PI's – Mary Schubauer-Berigan and Matthew Dahm; Co-I – Aaron Erdely
- Project Title: Characterizing the exposome using a tiered, longitudinal and translational exposure assessment model (10/01/2014 – 9/30/2018)
    - PI – James Antonini; Co-I Aaron Erdely
- Project Title: A translational *in vitro* approach to assess cardiovascular risk (10/01/2013 – 9/30/2017)
    - PI – Aaron Erdely
- Project Title: Toxicity associated with the life-cycle of CNT (10/01/2013 – 9/30/2016)
    - PI – Aaron Erdely
- Project Title: Toxicological Evaluation of Pulmonary Exposure to Graphenes (10/2012-09/2016)

    - Co-PI's Vincent Castranova and Jenny Roberts. Co-I – Aaron Erdely
- Project Title: Endothelial Cells as Biosensors for Occupational Cardiovascular Risk (2013-2015) R21 OH010495
    - PI – Matthew Campen; Co-I – Aaron Erdely
- Project Title: Workplace Exposure, Inflammation, and Cardiovascular Toxicity (10/01/2009 – 09/30/2014)
    - PI – Aaron Erdely
    - This project was funded by the NIOSH Health Effects Laboratory Division.
- Project Title: A translational *in vitro* approach to assess cardiovascular risk (10/2012 – 9/30/2013)
    - PI – Aaron Erdely
    - This project was funded as a pilot by the NIOSH Nanotechnology Research Center (NTRC).
- Project Title: Industrywide Exposure Assessment Study of Workers Exposed to Carbon Nanotubes and Carbon Nanofibers (2013 – 2014). CDC IAA #12-NS12-07 NIEHS AES 12029-001-00000
    - PI – Matthew Dahm; Co-I Aaron Erdely
- Project Title: Cardiovascular Toxicity Assessment of Subchronic Inhalation Exposure to Fullerene C60 (10/01/08-09/30/10). CDC IAA #09-02 NIEHS Y1-ES-9001-01
    - Co-PI's – Aaron Erdely and Petia Simeonova
- Project Title: Osteopontin and Carbon Nanotubes (03/01/2009-09/30/2009)
    - Co-PI's – Aaron Erdely and Petia Simeonova

Under Review:

- None

Publications (Articles)

1. Xiao S, **Erdely A**, Wagner L, Baylis C [2001]. Uremic levels of BUN do not cause nitric oxide deficiency in rats with normal renal function. *Am J Physiol Renal Physiol* 280:F996-F1000.
2. Wagner L, Hoey JG, **Erdely A**, Boegehold MA, Baylis C [2001]. The nitric oxide pathway is amplified in venular vs arteriolar cultured rat mesenteric endothelial cells. *Microvasc Res* 62:401-409.
3. Bloch J, Qui C, **Erdely A**, Baylis C [2002]. Inhibition of inducible nitric oxide synthase during high dietary salt intake. *Am J Hypertens* 15:230-235.
4. Wagner L, Riggleman A, **Erdely A**, Couser W, Baylis C [2002]. Reduced nitric oxide synthase activity in rats with chronic renal disease due to glomerulonephritis. *Kidney Int* 62:532-536.
5. **Erdely A**, Greenfeld Z, Wagner L, Baylis C [2003]. Sexual dimorphism in the aging kidney; effects on injury and nitric oxide system. *Kidney Int* 63:1021-1026.
6. **Erdely A**, Wagner L, Muller V, Szabo A, Baylis C [2003]. Protection of Wistar Furth rat from chronic renal disease is associated with maintained renal nitric oxide synthase. *J Am Soc Nephrol* 14:2526-2533.
7. Szabo A, Wagner L, **Erdely A**, Lau K, Baylis C [2003]. Renal neuronal nitric oxide synthase protein expression as a marker of renal injury. *Kidney Int* 64:1765-1771.

8. **Erdely A**, Freshour G, Smith C, Engels K, Olson JL, Baylis C [2004]. Protection against puromycin aminonucleoside (PAN) induced chronic renal disease in the Wistar Furth rat. *Am J Physiol Renal Physiol* 287:F81-89.
9. **Erdely A**, Freshour G, Maddox D, Olson J, Baylis C [2004]. Renal disease in rats with type 2 diabetes is associated with decreased renal nitric oxide production. *Diabetologia* 47:1672-1676.
10. **Erdely A**, Freshour G, Baylis C [2006]. Resistance to renal damage by chronic nitric oxide synthase inhibition in the Wistar Furth. *Am J Physiol Regul Integr Comp Physiol* 290:R66-72.
11. **Erdely A**, Kepka-Lenhart D, Clark M, Zeidler-Erdely P, Poljakovic M, Calhoun WJ, Morris SM Jr [2006]. Inhibition of Phosphodiesterase 4 amplifies cytokine-dependent induction of arginase I in macrophages. *Am J Physiol Lung Cell Mol Physiol* 290:L534-539.
12. **Erdely A**, Freshour G, Tain Y-L, Engels K, Baylis C [2007]. DOCA/NaCl induced chronic kidney disease: a comparison of renal nitric oxide production in resistant and susceptible rat strains. *Am J Physiol Renal Physiol* 292:F192-196.
13. Tain Y-L, Muller V, Szabo AJ, **Erdely A**, Smith C, Baylis C [2008]. Renal cortex neuronal nitric oxide synthase in response to rapamycin in kidney transplantation. *Nitric Oxide* 18:80-86.
14. Young S-H, Antonini JM, Roberts JR, **Erdely A**, Zeidler-Erdely PC [2008]. Performance evaluation of cytometric bead assays for the measurement of lung cytokines in two rodent models. *J Immunol Methods* 331: 59-68.
15. Muller V, Szabo AJ, **Erdely A**, Tain Y-L, Baylis C [2008]. Sex differences in response to cyclosporin immunosuppression in experimental kidney transplantation. C*lin Exp Pharmacol Physiol*. 35: 574-579.
16. Szabo AJ, Muller V, Chen G-F, Samsell LJ, **Erdely A**, Baylis C [2008]. Nephron number determines susceptibility to renal mass reduction-induced CKD in Lewis and Fisher 344 rats: Implications for development of experimentally induced chronic allograft nephropathy. *Nephrol Dial Transplant.* 23: 2492-2495.
17. Zeidler-Erdely PC, Kashon ML, Batelli LA, Young SH, **Erdely A**, Roberts JR, Reynolds SH, Antonini JM [2008]. Pulmonary Inflammation and Tumor Induction in Lung Tumor Susceptible A/J and Resistant C57BL/6J Mice Exposed to Welding Fume. *Particle and Fibre Toxicology.* 5:12.
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119. Zeidler-Erdely P, Trainor T, Leonard S, Stefaniak A, Bowers L, Andrews R, Keane M, Antonini J, Erdely A, Kodali V [2020]. *In Vitro* Toxicity Comparison of Surrogate Metal Oxides found in Welding Fumes. Toxicologist *174*(1):42.
120. Fraser K, Yanamala N, Boots T, Siegrist K, Eye T, Foster S, Hubczak J, Lowry D, Friend S, Bishop L, Stefaniak A, Dahm M, Schubauer-Berigan M, Birch M, Evans D, Lersch T, Casuccio G, Bunker K, Orandle M, Hubbs A, Bauer A, Sargent L, Kodali V, Erdely A [2020]. Understanding the variable drivers of toxicity for the broad class of carbon nanotubes and nanofibers from U.S. facilities. Toxicologist *174*(1):263.
121. Majumder N, Williams X, Goldsmith T, Ross M, Kodali V, Hubczak J, Nurkiewicz T, Erdely A, Kelley E, Hussain S [2020]. Inhalation Co-Exposure to Ultrafine Carbon and Ozone Leads to Significant Pulmonary and Systemic Oxidative Stress. Toxicologist *174*(1):367.
122. Young T, Herbert G, Lucas S, Ottens A, Erdely A, Wang T, Campen M [2020]. The role of matrix metalloproteinases in multiwalled carbon nanotube-induced inflammation in C57BL/6 mice. Toxicologist *174*(1):46.
123. Shoeb M, Meighan T, Kodali V, Kashon M, Roach K, Boyce G, Stone S, Mckinney W, Roberts J, Erdely A, Antonini J [2021]. Alleviated Trf1-Trf2 and Elevated Telomeric DNA Damage Foci after a High-Fat Diet and Welding Fume Exposure in Rat Liver Tissue. abstract, 5th Annual CDC Laboratory Science Symposium, January 29.
124. Boyce G, Shoeb M, Kodali V, Meighan T, Roach K, Mckinney W, Stone S, Powell M, Roberts J, Erdely P, Erdely A, Antonini J.Welding Fume Inhalation Exposure and High-Fat Diet Change Lipid Homeostasis in Rat Liver. abstract, 2021 Society of Toxicology Annual Meeting and ToxExpo , Virtual
125. Majumder N, Velayutham M, Kodali V, Dimitrios B, Mazumder HH, Erdely A, Nurkiewicz T, Demokritou P, Kelley EE, Hussain S [2022]. Macrophage-endothelial cell cross talk in ozone-oxidized carbon black nanoparticle exposure. Toxicologist *XXX*(X):XXX

126. Afshari A, Mckinney W, Cumpston J, Leonard H, Cumpston J, Jackson M, Friend S, Meighan T, Erdely A, Antonini J [2022]. Characterization of different aerosols using a novel thermal spray coating and inhalation exposure system. International Particulate Toxicology Conference, Santa Fe, New Mexico
127. Roberts J, Xing X, Roach K, Jakubinek M, Kim K, Bowers L, Wolfarth M, Leonard S, Porter D, Friend S, Erdely A, Kodali V [2022]. In vivo Lung Toxicity associated with Boron Nitride Nanotubes with Different Purities. International Particulate Toxicology Conference, Santa Fe, NM
128. Fraser K, Yanamala N, Eye T, Friend S, Sefaniak A, Dahm M, Schubauer-Berigan M, Casuccio G, Bunker K, Lersch T, Hubbs A, Kodali V, Erdely A [2022]. Physicochemical Drivers of Primary Toxicologic Outcomes induced by Carbon Nanotubes and Nanofibers from U.S. Facilities. International Particulate Toxicology Conference, Santa Fe, NM
129. Kodali V, Afshari A, Meighan T, Mckinney W, Hasan Mazumder H, Majumder N, Cumpston J, Leonard H, Cumpston J, Friend S, Leonard S, Erdely A, Erdely P, Hussain S, Gyung Lee E, Antonini J [2022]. In vivo and in vitro toxicity of a stainless-steel areosol generated during thermal spray coating. International Particulate Toxicology Conference, Santa Fe, NM
130. Roach K, Kodali V, Shoeb M, Meighan T, Mckinney W, Erdely A, Erdely P, Roberts J, Antonini J [2022]. Examination of the exposome in an animal model: the impact of high fat diet and rat strain on local and systemic immune markers following occupational welding fume exposure. International Particulate Toxicology Conference, Santa Fe, NM
131. Kodali V, Hussain S, Roach K, Kashon M, Boots T, shoeb M, Boyce G, Meighan T, Eye T, Roberts J, Erdely P, Antonini J, Erdely A [2022]. Understanding the Lung-Gut Axis by Modeling the Influence of Genetic Diversity, Welding Fume Inhalation Exposure, and Lifestyle on the Profile of Gut Microbiome. International Particulate Toxicology Conference, Santa Fe, NM, August 28
132.

Invited Oral Presentations/Organized Meeting Sessions

1. Dept. of Physiology seminar, West Virginia University, 2001. "Protection of the Wistar Furth (WF) Rat From Renal Ablation Induced Chronic Renal Disease (CRD), is Associated With an Elevated Renal Nitric Oxide (NO) System vs the Sprague Dawley (SD)"
2. Research in Progress Dept. of Molecular Genetics and Biochemistry, University of Pittsburgh, 2003. "Protection against puromycin aminonucleoside (PAN) induced chronic renal disease in the Wistar Furth (WF) rat"
3. Renal Research Seminar, University of Pittsburgh, 2003. "Nitric Oxide Deficiency in Animal Models of Chronic Renal Disease"
4. Invited Lecture, NIOSH, Morgantown, WV, 2005. "Nitric Oxide Deficiency in Animal Models of Chronic Renal Disease"
5. Research in Progress Dept of Toxicology and Molecular Biology, NIOSH, 2007. "Pulmonary and systemic outcomes following exposure to dispersed single walled carbon nanotubes"
6. "Systemic changes in arginase and arginine metabolism in a model of atherosclerosis: a comparison of apoE-/- and C57 mice." Presented at Experimental Biology (FASEB) 2007 in the section – Role of l-Arginine Metabolism in Cardiovascular/Renal Disease

7. Research in Progress Dept of Toxicology and Molecular Biology, NIOSH, 2008. "Acute systemic effects following carbon nanotube exposure and potential cardiovascular implications"
8. "Systemic effects following exposure to carbon nanotubes." Presented at the Society of Toxicology (SOT) meeting in 2009 in the section – Cardiopulmonary Toxicity of Inhaled Particles and Nanoparticles
9. Research in Progress Dept of Toxicology and Molecular Biology, NIOSH, 2010. "Occupational Exposures and Cardiovascular Toxicology: Role of Systemic Inflammation"
10. "Systemic markers of pulmonary exposure to nanoparticles." Invited speaker at the Nanomaterials and Worker Health Conference in Keystone, CO 2010.
11. "Induction of type I interferon and pattern recognition receptor signaling following occupational particulate matter inhalation." PPRB seminar series 2011.
12. "Utilization of multi-compartment expression analysis to determine pulmonary-derived systemic signaling." Allegheny-Erie Society of Toxicology Meeting, Pittsburgh, PA 2012.
13. "Multi-compartment expression analysis to identify pulmonary-derived systemic signaling following particulate matter inhalation." Presented at the Society of Toxicology (SOT) meeting, 2013
14. "Usefulness of *in vivo* genomics for *in vitro* screening in nanotoxicity." Presented at the Society of Toxicology (SOT) meeting, 2013
15. "Multi-compartment expression analysis to identify pulmonary-derived systemic signaling following particulate matter inhalation" Keynote speaker in a webinar hosted by Ingenuity Systems, 2013.
16. "Integrating epidemiology and field studies with *in vivo* nanomaterial toxicology, Part II" NIOSH Science Forum, June 2013
17. "Utilizing microarray analysis to complement or predict functional outcomes in toxicology studies." Presented at the Society of Toxicology (SOT) meeting, 2014
18. "Induction of Serum Inflammatory Potential by Pulmonary Exposure to Carbon-Based Nanomaterials." Presented at the Society of Toxicology (SOT) meeting, 2014
19. "Carbon nanotubes are toxic in experimental models: what's next, who's being exposed, and should we be concerned?" Symposium at the Society of Toxicology (SOT) meeting, 2014. Chaired session and presented introduction.
20. "Pulmonary toxicity of graphene nanomaterials: an emerging concern in manufacturing and applications?" Workshop session at the Society of Toxicology (SOT) meeting, 2015. Chaired session and presented introduction.
21. "Occupational Exposures along the Graphene Product Value Chain: Production, Formulation, and Use." Presented at the Society of Toxicology (SOT) meeting, 2015.
22. "Understanding the occupational relevance of carbon nanotube toxicity." Presented at the University of New Mexico School of Pharmacy Seminar Series, 2015
23. "Understanding the occupational relevance of carbon nanotube toxicity." Presented at the Allegheny-Erie Society of Toxicology meeting in Morgantown, WV, 2015.
24. "Understanding the health implications of exposure to carbon nanotubes: bridging the gap between real-world scenarios and inhalation toxicology." Invited speaker for WVU Department of Physiology and Pharmacology Seminar series, Morgantown, WV, 2015.
25. "Toxicity of carbon-based nanomaterials." Presented at The Composites and Advanced Materials Expo (CAMX) meeting in Dallas, TX, 2015.

26. “Health and environmental hazard assessments of nanomaterials along their lifecycle” Symposium at the Society of Toxicology (SOT) meeting, 2016. Chaired session.
27. “Toxicological evaluation of carbon nanotubes from a lifecycle perspective” Presented at the Society of Toxicology (SOT) meeting, 2016
28. “A life cycle approach” Presented at the 2016 Nanotechnology Research Meeting.
29. “Bridging the gap between exposure and toxicity assessments” Presented at Cabot Corporation 2016.
30. “A life cycle approach to nanomaterial toxicity to provide context to potential health effects” Presented at Evening of Science, West Virginia University, 2016.
31. “Evidence for mechanistic specificity driving pulmonary particulate exposure-induced cardiovascular dysfunction” Presented at the Society of Toxicology (SOT) meeting, 2017
32. “Characterization of pulmonary toxicity following acute exposure to a boron nitride nanotube suspension” Presented at the 8th International Symposium on Nanotechnology, Occupational and Environmental Health, Denmark 2017.
33. “Effect of age, diet, rat strain, and particle exposure on lung and peripheral blood mononuclear cell (PBMC) telomere regulation and length” Presented at the 8th International Symposium on Nanotechnology, Occupational and Environmental Health, Denmark 2017.
34. “Nanotoxicology, State of the Science and the Path Forward” Session Co-chair. Society of Toxicology. San Antonio, TX 2018.
35. “Nanotechnology Applications: What are the Concerns for Health and Safety?” EEI: Edison Electric Institute Meeting, Miami, FL 2018.
36. “Graphene and other 2-D materials” Session Co-chair. 9th International Conference on Nanotoxicology, Neuss, Germany 2018.
37. “Toxicological Evaluation of Pulmonary Exposure to Different Graphene Nanomaterials *In Vivo*” 9th International Conference on Nanotoxicology, Neuss, Germany 2018.
38. “Integrating exposure and toxicity assessments of nanomaterials at different stages of the life cycle” Session Chair. QEEN II: 2nd Quantifying Exposure to Engineered Nanomaterials from Manufactured Products Workshop, Washington DC 2018.
39. “Understanding the changing exposure and toxicity profile of engineered nanomaterials from production to application.” Invited talk, Society of Toxicology, Baltimore, MD 2019.
40. “Association of occupational exposures with ex vivo functional immune response in workers handling carbon nanotubes and nanofibers.” EU NanoSafety Cluster 2020
41. “Understanding the changing exposure and toxicity profile of engineered nanomaterials from production to application.” National Nanotechnology Initiative (NNI) Nanotechnology Environmental and Health Implications (NEHI) Working Group, November 2020.
42. “Characterization, toxicity, and modeling of the broad class of carbon nanotubes and nanofibers used or produced in U.S. facilities.” National Nanotechnology Initiative (NNI) Nanotechnology Environmental and Health Implications (NEHI) Working Group, January 2021.
43. “What We Know About NanoEHS: Human Exposure. An Integrated Approach.” Presented and was a panelist for National Nanotechnology Initiative (NNI) Public NanoEHS Webinar "What We Know About NanoEHS: Human Exposure," which was part of the NanoEHS webinar series. Panelists shared their perspectives on key findings in quantifying and assessing the effects of human exposure to nanomaterials. March 2021.
44. “Controlled exposure and toxicity assessments for nanomaterial use in construction.” Invited speaker in an Educational Session titled “Exposures, Toxicity, and Hazard Communication

of Nanomaterials in Construction" for the American Industrial Hygiene Conference and Expo, May 2021.

45. "A NIOSH perspective of working with the WVU HSC." An invited talk for the West Virginia University Evening of Science, May 2021.
46. Presented our invited external case study for the high aspect ratio nanomaterial integrated approaches to testing and assessment (IATA) framework to members of the GRACIOUS project. GRACIOUS Case Study Workshop, May 2021.
47. Presented our results, conclusions, and recommendations as part of an external case study for the GRACIOUS integrated approaches to testing and assessment (IATA) framework. GRACIOUS Impacts Forum. Final stakeholder engagement and training workshop, September 2021.
48. Presented an overview of toxicology research in government for the trainee day at the International Particle Toxicology Conference, August 2022.
49. "The road traveled for predicting potential human health effects of carbon nanotubes and nanofibers." An invited talk for the International Particle Toxicology Conference, August 2022.

Undergraduate, Doctoral/Masters Candidate, and Postdoctoral Advisor

- Undergraduate
    - Sarah Foster (Allegheny College) 2017
        - Her summer work was awarded second place in the Health Sciences research category

- Masters
    - Lindsey Bishop 2014-2016
        - First place basic science poster presentation – WVU E. J. Van Liere Research Day
        - Best graduate student poster – Allegheny-Erie Society of Toxicology
        - Best Methodology – Allegheny-Erie Society of Toxicology
        - Carl del Signore Foundation Fellowship – West Virginia University
        - First place - Julie Betschart Research Award WVU Department of Physiology and Pharmacology
        - WIREs Nanomedicine and Nanobiotechnology poster award at 8th International Nanotoxicology Congress

- Doctoral
    - Kelly Smith 2015-2021
        - Awarded National Science Foundation Fellow - Interdisciplinary Graduate Education and Research Training Fellowship (2016-2018)
        - Van Liere first place poster 2018
        - Outstanding Graduate Student Award from the Nanotoxicology Specialty Section of the Society of Toxicology 2018.

        - Awarded the Toxicology Working Group Travel award to attend the Society of Toxicology Meeting 2018.
        - Allegheny-Erie Society of Toxicology Graduate Student Travel Award 2018
        - Van Liere first place presentation for all senior Ph.D. students 2019
        - Van Liere selection for a flash talk, a competitive selection and award
        - Awarded the Toxicology Working Group Travel award to attend the Society of Toxicology Meeting 2019
        - Robert E. Stitzel Graduate Student Award - West Virginia University School of Pharmacy 2019
        - Best Graduate Student Poster Presentation - Allegheny Erie Society of Toxicology 2019
        - Awarded the Toxicology Working Group Travel award to attend the Society of Toxicology Meeting 2020
        - Society of Toxicology Graduate Student Travel Award 2020
        - Society of Toxicology - Inhalation and Respiratory Specialty Section- 2nd Place Student Award 2020
        - Society of Toxicology- Biological Modeling Specialty Section- Best Trainee Abstract Finalist 2020
    - John Hubczak 2017-2020 (left program during COVID)
        - Awarded IGERT Fellowship
        - Awarded the Toxicology Working Group Travel award to attend the Society of Toxicology Meeting 2019

- Post-Doctoral
    - Vamsi Kodali 2015-present
        - Best overall postdoctoral poster – Allegheny-Erie Society of Toxicology
        - Bergeson and Campbell Poster Award (2nd overall) at 8th International Nanotoxicology Congress
        - Awarded pilot project funding from the NTRC
        - Awarded full proposal funding from the NTRC
        - Awarded full proposal funding from NORA

Doctoral/Masters Candidate Committees

Cody Nichols 2010-2016 (WVU)
Mario Aragon 2011-2015 (UNM)
Alaeddin Abukabda 2015-2018 (WVU)

Teaching

Year	Course Description	Role	Student Profile	Lecture Hours
1999	Human Function	Small group facilitator	12 medical students	15
2000	Human Physiology	Renal Physiology Instructor	~200 professional students	2

2001	Human Function	Small group facilitator	12 medical students	6
2001	Human Physiology	Renal Physiology Instructor	~200 professional students	4
2005	Human Function	Renal Physiology Instructor	34 Medical Students	16 (including tutorials)
The above teaching (2005 Human Function) was done at the Oman Medical College in Sohar, Oman in association with West Virginia University. These students were the first class of students of the newly developed medical school in Sohar.				
2013-2016	Problem-Based Learning	Instructor	Medical Students	25 / yr

CURRICULUM VITAE

Patti Christine (Zeidler) Erdely

Contact Information

Work Address:	National Institute for Occupational Safety and Health (NIOSH) Health Effects Laboratory Division Pathology and Physiology Research Branch 1000 Frederick Lane MS L2015 Morgantown, WV 26508
Work Phone:	(304) 285-5881
Fax:	(304)285-5938
E-mail:	paz9@cdc.gov

Education

Washington and Jefferson College (1997)	Department: Biology Degree Conferred: B.A.
West Virginia University (2003)	School: Medicine Department: Physiology Degree Conferred: Ph.D.

Academic & Professional Appointments/History

2003–2004	University of Pittsburgh	Post-Doctoral Fellow Division of Pulmonary, Allergy, and CCM Sponsor: Dr. William Calhoun, M.D.
2004–2007	CDC/NIOSH	Regular Fellow Health Effects Laboratory Division
2007–2013	West Virginia University	Adjunct Assistant Professor School of Medicine
2007–2013	CDC/NIOSH	Associate Service Fellow Health Effects Laboratory Division
2013–2014	CDC/NIOSH	Senior Service Fellow Health Effects Laboratory Division
2013– present	West Virginia University	Adjunct Associate Professor School of Medicine
2014–present	CDC/NIOSH	Research Biologist Health Effects Laboratory Division

2022–present West Virginia University Adjunct Full Professor
School of Medicine

Research Interests and Activities

- Role of xenobiotic particle exposure in lung carcinogenesis (occupational exposure toxicology and nanotoxicology)

- Role of xenobiotic particle exposure in lung inflammation (environmental and occupational exposure toxicology and nanotoxicology)

- Systemic transcriptomic changes and molecular pathways induced by xenobiotic particle exposures

Research Support-Current

- Health Effects of Mixed Metals. 10/1/2019-9/30/2023
  Role: PI
  National Occupational Research Agenda of NIOSH

- Genotoxicity and tumorigenic potential of carbon nanotubes and fibers with varying geometry. 10/1/2021-9/30/2025
  Role: Co-PI
  National Occupational Research Agenda of NIOSH

Research Support-Past

- NASA Interagency Agreement (CDC #09-26): Toxicity of moon dusts in rats and mice. 10/1/2008-9/30/2011
  Role: PI
  National Aeronautics and Space Administration

- FDA Interagency Agreement 224-13-3011 (CDC #13-NS13-04): Safety of inhaled nanoparticles of titanium dioxide or zinc oxide in commercial spray sunscreen. 10/1/2013-TBD
  Role: PI
  Food and Drug Administration

- Evaluation of welding fume as a lung carcinogen in mice exposed by inhalation. 10/01/2014-9/30/2019
  Role: PI
  CDC/NIOSH

- Toxicity associated with the life-cycle of carbon nanotubes. 10/01/2013 – 9/30/2016
  Role: Co-I

Nanotechnology Research Center of NIOSH

- Characterizing the exposome using a tiered, longitudinal and translational exposure assessment model. 10/01/2014-9/30-2018
  Role: Co-I
  National Occupational Research Agenda of NIOSH

- Occupational and environmental co-exposures: prospects of novel lung pathologies and susceptibilities. 09/07/2018-06/30/2019
  Role: Co-I
  West Virginia Clinical and Translational Science Institute

Awards/Honors

- 2002: Maryanne Stock Graduate Student Research Award from the Allegheny-Erie Society of Toxicology
- 2002: 1st place WVU Department of Physiology and Pharmacology Julie Betschart Research Competition
- 2002**:** 3rd place WVU Health Sciences E.J. Van Liere Research Competition
- 2003: 1st place WVU Health Sciences E.J. Van Liere Research Competition
- 2003**:** 1st place - WVU Department of Physiology and Pharmacology Julie Betschart Research Competition
- 2008: Best overall poster Allegheny-Erie Society of Toxicology
- 2009**:** Charles C. Shepherd award nominee for paper "Cross-talk between lung and systemic circulation during carbon nanotube respiratory exposure."
- 2014: Alice Hamilton award honorable mention for paper "Carbon nanotube dosimetry: from workplace exposure assessment to inhalation toxicology."
- 2015: Alice Hamilton award nominee for paper "Oxidative stress and reduced responsiveness of challenged circulating leukocytes following pulmonary instillation of metal-rich particulate matter in rats."
- 2018: Best paper at Society of Toxicology meeting in both the Inhalation and Respiratory Specialty Section and Nanotoxicology Specialty Section
- 2018: Alice Hamilton Winner for paper "An In-Vivo Toxicity Assessment of Occupational Components of the Carbon Nanotube Life Cycle to Provide Context to Potential Health Effects."
- 2018: Alice Hamilton award nominee for paper "Inhalation of gas metal arc-stainless steel welding promotes lung tumorigenesis in A/J mice."
- 2019: Charles C. Shepard Award Nominee in Laboratory Science for paper "Inhalation of iron-abundant gas metal arc welding-mild steel fume promotes lung tumors in mice."
- 2020: Society of Toxicology Nanoscience and Advanced Materials Specialty Section Paper of the Year

Doctoral Students Trained

- Lauryn Falcone Cellular and Integrated Physiology (2015–2018)

Current position: PGY-1 University of Pittsburgh Medical Center
Awards: Society for Investigative Dermatology Student Travel (2018), WVU Van Liere Research Day: Best graduate student poster (2017) and Best MD/PhD student poster (2018), Society of Toxicology Student Travel Award (2017), Allegheny-Erie Society of Toxicology Annual Regional Meeting Best graduate student poster (2016)

Non-Degree Graduate Students

- Taylor Trainor Biomedical Sciences (2018–2020)

Other Trainees/Rotations

- Abby Harold Ivey WVU Cancer Cell Biology MD/PhD student (2018)

Positions/Service

Institutional

- 2013–2020: Respiratory Health cross-sector member, National Occupational Research Agenda, NIOSH
- 2013–2014: Expert team member, revised Formaldehyde NIOSH criteria document
- 2015–present: Approving Official, Health Effects Laboratory Division
- 2017–present: NIOSH liaison, PFAS NCEH/ATSDR Multi-Federal Agency, Department, Commissions Meeting-PFAS Activities
- 2018–present: Coordinator, Pulmonary Pathophysiology Team, Pathology and Physiology Research Branch, NIOSH

State/National/International

- 2002–2003: Student representative, Allegheny-Erie Society of Toxicology
- 2002–2003: Student representative**,** Allegheny-Erie Society of Toxicology student advisory committee
- 2010: Dale Carnegie "Effective Communications and Human Relations" Course
- 2011–2012: Inhalation and Respiratory Specialty Section Post-doctoral representative
- 2013–2014: President-elect, Allegheny-Erie Society of Toxicology
- 2014–2015: President, Allegheny-Erie Society of Toxicology
- 2015–2016: Past-President, Allegheny-Erie Society of Toxicology
- 2015-2016: Councilor, Allegheny-Erie Society of Toxicology
- 2015–2017: Councilor, Inhalation and Respiratory Specialty Section, Society of Toxicology
- 2016–2017: Invited expert, International Agency for Research on Cancer (Lyon, France), "Welding, Welding Fume and some Related Chemicals."
- 2017: Chair, "Cancer in Experimental Animals" subgroup, IARC Monograph Working Group

Academic

- 2002–2003: **S**tudent representative, WVU Physiology and Pharmacology graduate studies committee
- 2007–present: Associate member, Graduate Faculty WVU Physiology and Pharmacology
- 2007: Judge, Julie Betschart Research Symposium
- 2007–2012: Facilitator, WVU School of Medicine Patient Based Learning
- 2012–2014: WVU Xenobiotic Toxicology Working Group Member
- 2014: Collaborator, R01 grant application, "The epigenetic mechanism of hexavalent chromium carcinogenesis", Michigan State University
- 2015: Co-organizer, First joint regional chapter reception, Allegheny-Erie and Michigan Chapters of the Society of Toxicology
- 2015–2019: Graduate Advisory Council Member, WVU Cellular and Integrative Physiology
- 2016: Invited member, Carcinogenesis team, WVU Cancer Institute "Evening of Science"
- 2017: WVU Physiology and Pharmacology Faculty Search Committee Member
- 2019: WVU Physiology and Pharmacology Work in Progress Committee Member
- 2019–present: WVU Center for Inhalation Toxicology Executive Committee Member
- 2020 WVU Physiology and Pharmacology Faculty Search Committee Member
- 2020: Co-I, R01 Grant application, "Dysregulation of functional RNA modifications and hexavalent chromium lung carcinogenesis", University of Kentucky
- 2021:Co-I, R01 Grant application," Mechanism of hexavalent chromium lung carcinogenesis—Role of PTEN down-regulation and autophagy/mitophagy deficiency", Case Western Reserve University

Invited Research Seminars

1. NIOSH, Pathology and Physiology Research Branch, Inflammation Interest Group (2006): "Comparative Inflammatory lung response in A/J and C57BL/6J mice exposed to stainless steel welding fumes."
2. 4th Conference on Molecular Mechanisms of Metal Toxicity and Carcinogenesis, Morgantown, WV (2006): "Comparative Inflammatory lung response in A/J and C57BL/6J mice exposed to stainless steel welding fumes."
3. 5th Conference on Molecular Mechanisms of Metal Toxicity and Carcinogenesis, Morgantown, WV (2008): "A preliminary assessment of the carcinogenicity of welding fumes: insights from animal models."
4. NIOSH, Pathology and Physiology Research Branch, Inflammation Interest Group (2008): "A preliminary assessment of the carcinogenicity of welding fumes: insights from animal models."
5. NIOSH, Pathology and Physiology Research Branch (2009): "An update on welding fume exposure and lung carcinogenesis."
6. 27th Annual Allegheny-Erie Society of Toxicology Regional Chapter Meeting, Morgantown, WV (2013): "Lung tumor promotion of chromium-containing stainless steel welding fume in mice."
7. WVU Cancer Institute, Lung Cancer Interest Group (2018): "Understanding the toxicities associated with welding fume exposure."
8. Edison Electric Institute, Portland, OR (2017): "Welding Fumes"

9. University of Kentucky, Department of Toxicology and Cancer Biology (2017): "Understanding the toxicities associated with welding fume exposure."
10. NIOSH, Pathology and Physiology Research Branch (2019): "Understanding the toxicities associated with welding fume exposure."
11. NIOSH, Manufacturing Mondays Rapid Fire Presentation (2021): "Health Effects of Mixed Metal Exposures."
12. NIOSH, Pathology and Physiology Branch (2021): "Preliminary assessment of an alternative welding fume: Copper-Nickel."
13. WVU, Department of Physiology and Pharmacology (2021): "Inflammation and carcinogenicity of welding fumes: historical and current research at NIOSH."

Professional Journal Activities

Ad-hoc Reviewer

- Particle and Fibre Toxicology
- Inhalation Toxicology
- Journal of Toxicology and Environmental Health
- Toxicology Letters
- Journal of Pharmacy and Pharmacology
- Regulatory Toxicology and Pharmacology
- Saudi Medical Journal
- Neurotoxicology and Teratology
- Environment International
- Environmental Engineering and Management Journal
- Basic and Clinical Pharmacology and Toxicology
- Chemical Research in Toxicology
- Biochemistry and Biophysics Reports
- Occupational and Environmental Medicine
- Cardiovascular Toxicology

Participation in National and International Scientific Meetings

- Society of Toxicology Annual Meeting (2001–2019)
- Allegheny-Erie Society of Toxicology Regional Chapter Meeting (2001–2022)
- Asbestos Health Effects Conference, San Francisco, CA (2001)
- 3rd International Conference on Oxygen/Nitrogen Radicals: Cell Injury and Disease, Morgantown, WV(2002)
- 2nd Annual Pittsburgh International Lung Conference, Farmington, PA (2004)
- American Academy of Allergy, Asthma & Immunology, San Francisco, CA (2004)
- Health Effects of Welding (2005)
- The Application of Systems Biology Methodologies to Environmental Research, Morgantown, WV (2005)
- 4th Conference on Molecular Mechanisms of Metal Toxicity and Carcinogenesis, Morgantown, WV (2006)
- 5th Conference on Molecular Mechanisms of Metal Toxicity and Carcinogenesis, Morgantown, WV (2008)

- Nanotechnology Research Center Science Meeting, Cincinnati, OH (2014)
- Nanotechnology Research Center Science Meeting, Morgantown, WV (2016)
- 9th Conference on Metal Toxicity and Carcinogenesis, Lexington, KY (2016)
- IARC Monograph Working Group Volume 118, Lyon, France (2017)

Memberships

Allegheny-Erie Regional Chapter of the Society of Toxicology (2001-present)

Society of Toxicology (2001–present)

- Inhalation and Respiratory Specialty Section
- Occupational and Public Health Society of Toxicology

Publications

Peer-Reviewed Manuscripts

1. Ye J, **Zeidler P**, Young S, Martinez A, Robinson VA, Jones W, Baron P, Shi X, Castranova V [2001]. Activation of mitogen-activated protein kinase p38 and extracellular signal-regulated kinase is involved in glass fiber-induced tumor necrosis factor-α production in macrophages. *J Biol Chem,* 276:5360-5367.
2. Young S, Robinson VA, Barger M, **Zeidler P**, Porter DW, Frazer FG, Castranova V [2002]. Modified endotoxin responses in rats pretreated with 1→3-β-glucan (zymosan a). *Toxicol Appl Pharmacol,* 178:172-179.
3. **Zeidler PC**, Chen F, Butterworth L, Andrew ME, Roberts JR, Robinson VA, Porter DW, Castranova V [2003]. Response of alveolar macrophages from inducible nitric oxide synthase knockout or wild type mice to an in vitro lipopolysaccharide or silica exposure. *J Toxicol Environ Health, Part A,* 66:995-1013
4. **Zeidler PC,** Millecchia LM, Castranova V [2004]. Role of inducible nitric oxide synthase-derived nitric oxide in lipopolysaccharide plus interferon-γ-induced pulmonary inflammation. *Toxicol Appl Pharmacol,* 95:45-54.
5. **Zeidler PC,** Hubbs A, Battelli L, Castranova V [2004]. Role of inducible nitric oxide synthase-derived nitric oxide in silica-induced pulmonary inflammation and fibrosis. *J Toxicol Environ Health, Part A,* 67:1-25.
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38. **Zeidler-Erdely PC**, Shah S, Tugendreich S, Bilgesu S, Hulderman T, Cumpston J, Frazer DG, McKinney W, Chen B, Castranova V, Erdely A [2014]. Molecular responses to MWCNT pulmonary exposure at relevant workplace exposure levels. *The Toxicologist* 138(1):603d.
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40. Afshari A, Chen BT, Jackson M, McKinney W, Schwegler-Berry D, Cumpston J, Cumpston A, Leonard D, **Zeidler-Erdely PC**, Frazer DG, Antonini JM [2015]. Development of an Inhalation Exposure System for Resistance Spot Welding using an Anti-Spatter Spray. *The Toxicologist* 144(1):338.
41. Erdely A, Antonini JM, Tugendreich S, Shah S, Nichols C, Hollander J, Salmen RS, Liston AL, Eye TJ, Simeonova PP, Kashon ML, Li S, Stone S, Chen BT, Frazer DG, **Zeidler-Erdely PC** [2015]. Temporal evaluation of multi-compartment molecular signaling following an inhalation exposure to metal-rich particulate matter. *The Toxicologist* 144(1):341.
42. Seeley EH, Boyce G, Bishop L, Salmen R, **Zeidler-Erdely PC**, Antonini JM, Kilby GW, Erdely A [2015]. Pathology-Directed Mass Spectrometry Determines Proteomic Differences Associated with Carbon Nanotube Exposure in the Lung. *The Toxicologist* 144(1):268.
43. Nichols CE, Thapa D, Shepherd DL, Knuckles TL, Erdely A, **Zeidler-Erdely PC**, Nurkiewicz TR, Hollander JM [2015]. Mitochondrial micro-RNA Dysregulation Contributes to Acute Cardiac Dysfunction following Mountaintop Mining Particulate Matter Pulmonary Exposure. *The Toxicologist* 144:1596.
44. **Zeidler-Erdely PC**, Erdely A, Meighan TG, Young S-H, Eye T, Antonini JM [2015]. A Comparison of Cell Counting Methods in Rodent Pulmonary Inhalation Toxicity Studies. *The Toxicologist* 144(1):35.
45. Antonini JM, Afshari A, McKinney W, Meighan TG, Jackson M, Chen BT, Schwegler-Berry D, Thompson JA, Fedan JS, **Zeidler-Erdely PC** [2015]. Effect of Metal Composition and the Use of Adhesive and Anti-Spatter Chemicals on Lung Injury and Inflammation in Rats after Inhalation during Spot Welding. *The Toxicologist* 144(1):338.
46. Erdely A, Tugendreich S, Sohela S, Kashon ML, Mercer RR, **Zeidler-Erdely PC** [2015]. Evaluation of molecular responses following workplace-relevant inhalation exposure to MWCNT. Toxicology Letters 238(2):S203.

47. Fedan JS, Thompson JA, Meighan TG, **Erdely PC**, Antonini JM [2016]. Altered Ion Transport in Normal Human Bronchial Epithelial (NHBE) Cells Following Exposure to Metal Welding Particles. *Experimental Biology*.
48. Shoeb M, Kodali V, Erdely A, Meighan TG, Salmen R, Eye T, **Zeidler-Erdely PC**, Farris BY, Roberts JR, Antonini JM [2016]. Reactive oxygen species-induced DNA effects of peripheral blood mononuclear cells isolated from rats after pulmonary exposure to welding fume. *The Toxicologist* 150(1):68
49. Bishop LM, Orandle M, Cena1 L, Kodali V, Dahm M, Schubauer-Berigan M, Sager T, Scabilloni J, Schwegler-Berry D, Eye T, Battelli L, Kang J, Casuccio G, Bunker K, Stefaniak A, **Zeidler-Erdely PC**, Sargent L, Mercer RR, Erdely A [2016]. The occupational life cycle of MWCNT: toxicity evaluation from as-produced to post-production modifications and composites. *The Toxicologist* 150(1):584.
50. Kodali V, **Zeidler Erdely PC**, Eye T, Bilgesu SA, Bishop L, Tugendreich S, Shah S, Campen M, Aragon M, Kashon ML, Gu J, Battelli L, Cumpston J, Cumpston A, McKinney W, Frazer DG, Chen BT, Castranova V, Mercer RR, Erdely A [2016]. Functional and molecular responses to inhalation of MWCNT from the perspective of occupationally-relevant depositions. *The Toxicologist* 150(1):583.
51. Shoeb M, Kodali VK, Meighan TG, Salmen R, Bishop LM, Eye TJ, Farris BY, Roberts J, **Zeidler-Erdely PC**, Erdely AD [2016]. Mechanistic evaluation of oxidant generation and the development of inflammation after pulmonary exposure to metal-rich welding nanoparticles. *Nanotox 2016 Conference proceedings for the 8th International Nanotoxicology Congress* 258(223).
52. Bishop L, Cena L, Orandle M, Kodali V, Dahm M, Schubauer-Berigan M, Sager T, Scabilloni J, Schwegler-Berry D, Eye T, Battelli L, Kang J, Casuccio G, Bunker K, Stefaniak A, **Zeidler-Erdely PC**, Sargent L, Mercer R, Erdely A [2016]. Toxicities associated with the occupational life cycle of MWCNT. *Nanotox 2016 Conference proceedings for the 8th International Nanotoxicology Congress* 53(17).
53. Yanamala N, Bishop L, Kodali V, **Zeidler-Erdely PC**, Erdely A [2016]. Machine learning techniques predict and characterize toxicity between different multi-walled carbon nanotubes. *7th ACM Conference on Bioinformatics, Computational Biology, and Health Informatics (ACM BCB)*.
54. Afshari A, **Zeidler-Erdely PC**, Meighan TG, McKinney W, Jackson M, Schwegler-Berry, Burns DA, LeBouf RF, Chen BT, Antonini JM [2017]. Aerosol characterization and pulmonary responses after short-term inhalation of fumes generated during resistance spot welding of galvanized steel. *The Toxicologist* 150:2395. .
55. Shoeb M, Kodali VK, Meighan TG, Salmen R, **Zeidler-Erdely PC**, Erdely A, Antonini JM [2017]. Effect of age, diet, and rat strain on telomere length in recovered peripheral blood mononuclear cells (PBMCs). *The Toxicologist* 150:2299. .
56. Smith K, Eye T, Salmen R, Liston A, **Zeidler PC**, Mercer RR, Erdely A [2017]. Investigation of the role of osteopontin in pulmonary granuloma formation and fibrosis following carbon nanotube exposure. *The Toxicologist* 150:2721.
57. Erdely A, Bishop L, Orandle M, Yanamala Y, Dahm MM, Birch ME, Evans DE, Kodali V, Eye T, Battelli L, **Zeidler-Erdely PC**, Casuccio G, Bunker K, Stefaniak AB, Sager T, Afshari A, Schwegler-Berry D, Kang J, Siegrist KJ, Mitchell CA, Lowry DT, Kashon ML, Mercer RR, Geraci CL, Schubauer-Berigan MK, Sargent LM, Cena L [2017]. A life cycle

approach to engineered nanomaterial toxicity to provide context to potential health effects. *The Toxicologist* 150:2901.

58. Falcone LM, Erdely A, Meighan TG, Battelli LA, Salmen R, McKinney W, Stone S, Cumpston A, Cumpston J, Andrews RN, Kashon M, Antonini JM, **Zeidler-Erdely PC** [2017]. Inhalation of gas metal arc-stainless steel welding fume promotes lung tumorigenesis in A/J mice. *The Toxicologist* 150:2391.
59. **Zeidler-Erdely PC**, Salmen R, Erdely A, Keane M, Kodali VK, Antonini J, Falcone LM [2017]. Pulmonary toxicity of gas metal arc-stainless steel welding fume its component metals. *The Toxicologist* 150:2125.
60. Shoeb M, Erdely A, Roberts J, Kodali V, Joseph P, Mustafa G, Farris B, Umbright C, **Zeidler-Erdely P**, Antonini J [2017]. Effect of age, diet, rat strain, and particle exposure on lung and peripheral blood mononuclear cell (PBMC) telomere regulation and length. NANOEH.
61. Falcone LM, Erdely A, Meighan TG, Battelli LA, Salmen R, McKinney W, Stone S, Cumpston A, Cumpston J, Andrews RN, Kashon M, Antonini JM, **Zeidler-Erdely PC** [2018]. Welding Fumes: A new Group 1 carcinogen. *The Toxicologist*.
62. Antonini JM, Kodali V, Boyce G, Meighan T, Salmen R, Kashon M, Boots T, Roberts JR, **Zeidler-Erdely PC**, Erdely A, Shoeb M [2019]. Effect of diet and occupational exposure in different rat strains on serum biomarkers and peripheral blood mononuclear cell telomere length: development of an animal model to examine the exposome. *The Toxicologist* 168(1):2013.
63. Kodali V, Roach KA, Kashon M, Boots T, Shoeb M, Boyce G, Meighan T, Eye T, **Zeidler-Erdely PC**, Roberts JR, Antonini JM, Erdely A [2019]. Understanding the lung-gut axis by evaluating the influence of occupational pulmonary exposure and lifestyle on the profile of gut microbiome and systemic immune cells. *The Toxicologist* 168(1):240.
64. Zeidler-Erdely PC, Erdely A, Salmen R, Battelli LA, Dodd T, Keane M, McKinney W, Stone S, Donlin M, Leonard HD, Cumpston JL, Cumpston JB, Mercer RR, Chen BT, Andrews RN, Kashon M, Antonini JM, Falcone LM [2019]. Lack of lung tumor promotion after inhalation of a copper-nickel welding fume in A/J mice. *The Toxicologist* 168(1).
65. Schubauer-Berigan MK, Dahm MM, Beard JD, Kodali V, Zeidler-Erdely PC, Erdely A [2019]. Association of occupational exposures with *ex vivo* functional immune response in workers handling carbon nanotubes and nanofibers. EpiCOH.
66. Zeidler-Erdely PC, Trainor T, Leonard SS, Stefaniak AB, Bowers L, Andrews RN, Keane M, Antonini JM, Erdely A, Kodali V [2020]. In Vitro Toxicity Comparison of Surrogate Metal Oxides found in Welding Fumes. *The Toxicologist* 174(1).
67. Antonini JM, Kodali V, Shoeb M, Kashon M, Roach KA, Boyce G, Meighan T, Stone S, McKinney W, Boots T, Roberts JR, Zeidler-Erdely PC, Erdely A [2020]. Effect of a high fat diet and occupational exposure in different rat strains on lung and systemic responses: development of an animal model to examine the exposome. *The Toxicologist* 174(1):39.
68. Roach KA, Kodali V, Shoeb M, Meighan T, Kashon M, McKinney W, Erdely A, Zeidler-Erdely PC, Roberts JR, Antonini JM [2022]. Examination of the exposome in an animal model: the impact of high fat diet and rat strain on local and systemic immune markers following occupational welding fume exposure. *13th International Particle Toxicology Conference.*
69. Kodali V, Afshari A, Meighan T, McKinney W, Mazumder MHH, Majumder N, Cumpston JL, Leonard HD, Cumpston JB, Friend S, Leonard SS, Erdely A, Zeidler-Erdely PC, Hussain

S, Lee EG, Antonini JM [2022]. In vivo and in vitro toxicity of a stainless-steel aerosol generated during thermal spray coating. *13th International Particle Toxicology Conference.*

70. Kodali V, Hussain S, Roach KA, Kashon M, Boots T, Shoeb M, Boyce G, Meighan T, Eye T, Roberts JR, Zeidler-Erdely PC, Antonini JM, Erdely A [2022]. Understanding the Lung-Gut Axis by Modeling the Influence of Genetic Diversity, Welding Fume Inhalation Exposure, and Lifestyle on the Profile of Gut Microbiome. *13th International Particle Toxicology Conference.*

Teaching activities

Course	Role	Students
Problem Based Learning	Facilitator	7-8
Human Function	Small Group Facilitator	12
Human Physiology	Lecturer	~200

1/23/23

CURRICULUM VITAE

Name: Jeffrey Stephen Fedan

Residence: 110 Sturgiss School Road
Masontown, WV 26542
Telephone: 304-864-0105
E-mail: intothewoods@atlanticbb.net

Present Positions and Addresses:
Senior Scientist (GS 0413-15)
Health Effects Laboratory Division (HELD)
National Institute for Occupational Safety and Health (NIOSH)
Centers for Disease Control and Prevention
1000 Frederick Lane
Morgantown WV 26508
Telephone: 304-285-5766
FAX: 304-285-5938
E-mail: jsf2@cdc.gov
and
Adjunct Professor
Department of Physiology and Pharmacology
School of Medicine
Box 9229, Health Sciences Center
West Virginia University
Morgantown, WV 26506
Telephone: 304-293-4991
E-mail: jfedan@hsc.wvu.edu
and
Adjunct Professor
Department of Pharmaceutical Sciences
School of Pharmacy
Box 9500, Health Sciences Center
West Virginia University
Morgantown, WV 26506
Telephone: 304-293-5101
E-mail: jfedan@hsc.wvu.edu

Education:

1967	B.A. (Biology), Case Western Reserve University, Cleveland, OH
1967-1968	University of Alabama (Biology), Tuscaloosa, AL
1974	Ph.D. (Pharmacology), University of Alabama at Birmingham, Birmingham, AL

Honors and Awards:

1975-1976	Postdoctoral Fellowship, American Heart Association-West Virginia Affiliate (AHA-WVA)

1976-1977	National Research Service Award, Postdoctoral Fellowship, National Institute for Neurological and Communicative Disorders and Stroke
1986, 1990	Outstanding Research Volunteer Award, AHA-WVA
1987, 2006	Invention Award; NIOSH
1990	Nomination, Honor Award for Research, Centers for Disease Control and Prevention (CDC)
1991	Group Award; NIOSH
1994	Professional Education Award, AHA-WVA
1994	Josephine Fultz Outstanding Volunteer of the Year Award, AHA-WVA
1994	Elizabeth Campbell Outstanding National Volunteer Award, National Friends of Public Television
1995	Grassroots Advocacy Award, America's Public Television Stations
1995	Volunteer of the Year Award, Public Television Station WNPB, Morgantown, WV
1983, 1989-1996, 1998-2018	Outstanding/Exceptional Performance Award, NIOSH
1998, 2006	"On the Spot" Award, NIOSH
1998, 2013	Alice Hamilton Award for Excellence in Occupational Safety and Health, NIOSH
2005	Nomination for the MacLachlan Award, WVU School of Medicine. This award is chosen annually by the second year students "in recognition of that faculty member in basic medical sciences who has demonstrated unusual teaching ability and a sincere interest in the progress of the entire class."
2008	Bullard-Sherwood Award for Research-to-Practice, Knowledge Category, NIOSH
2016, 2017	Shepherd Award Nomination, CDC
2017, 2021	Honorable Mention, Alice Hamilton Award for Excellence in Occupational Safety and Health, CDC
2021	CDC/ATSDR Honor Award for Excellence in Laboratory Research

Appointments:

1974-1975	Postdoctoral Fellow, Department of Pharmacology and Toxicology, WVU Medical School, Morgantown, WV
1975-1976	Postdoctoral Fellow, AHA-WVA, at Department of Pharmacology and Toxicology, WVU, Morgantown, WV

1976-1977	Postdoctoral Fellow, National Institute for Neurological and Communicative Disorders and Stroke, at Department of Pharmacology and Toxicology, WVU Medical School, Morgantown, WV
1977-1982	Adjunct Assistant Professor, Department of Pharmacology and Toxicology, WVU Medical School, Morgantown, WV
1982-1986	Adjunct Associate Professor, Department of Pharmacology and Toxicology, WVU Medical School, Morgantown, WV
1986-2001	Adjunct Professor, Department of Pharmacology and Toxicology, WVU Medical School, Morgantown, WV (Department was disbanded in 2001)
2001-Present	Adjunct Professor, Department of Physiology and Pharmacology, WVU Medical School, Morgantown, WV
2001- Present	Adjunct Professor, Department of Basic Pharmaceutical Sciences, WVU School of Pharmacy, Morgantown, WV
1977-1996	Research Pharmacologist, Pathology and Physiology Research Branch (PPRB), NIOSH, Morgantown, WV
1996-2015	Lead Research Physiologist and Team Leader, Inhalation Studies/Respiratory Disease Team, PPRB, NIOSH, Morgantown, WV.
2015-2022	Chief, PPRB, NIOSH, Morgantown, WV.
2022-Present	Senior Scientist, Health Effects Laboratory Division, NIOSH, Morgantown, WV.

Patents:

United States Patent #4,357,341. "Specific irreversible antagonism of histamine receptors by photoaffinity activated compounds." Co-inventors: G. Kurt Hogaboom and John P. O'Donnell

United States Patent #7,907,999. "Apparatus and method for measuring physiological characteristics of an intact trachea in vitro." Co-inventors: Y. Jing and M. R. Van Scott

Memberships:

American Association for the Advancement of Science
American Heart Association (past)
American Society for Pharmacology and Experimental Therapeutics (ASPET)
American Thoracic Society (past)
New York Academy of Sciences (past)
Research Discussion Group (President, 1979-81; Secretary-Treasurer, 1981-91)

Professional Society Activities:

1991-1997 2003-2005	Program Committee, American Society for Pharmacology and Experimental Therapeutics (ASPET)
1992-1997	Executive Committee of the Division of Toxicology (ASPET)

1992-1998	Summer Research Conferences Advisory Committee, Federation of American Societies for Experimental Biology (FASEB)
1992-1993	Co-Coordinator of Theme Symposia for 1993 Annual ASPET Meeting, San Francisco, CA
1992-1996	Theme Representative for ASPET, Experimental Biology Spring Meetings
1993	Organizer of the "Short Course" on Nitric Oxide at 1993 Annual ASPET Meeting, San Francisco, CA
1993-1995	Co-Organizer, ASPET Colloquium on "Structure and Function of P_2-Purinoceptors", Atlanta, GA, 1995
1996-1998	Chair, Summer Research Conferences Advisory Committee, FASEB
1999-2005	Short Course/Continuing Education Committee, ASPET (Chair 2002-2005)
1999-2000	Co-Organizer, ASPET Short Course on "Introduction to Receptors and Cell Signaling," Boston, MA, 2000
2000-2001	Co-organizer, ASPET Short Course on "Pharmacology of Inflammation," Orlando, FL, 2001
2001-2002	Nominating Committee, Alternate (ASPET)
2005-2010	Councilor, Division of Pharmacology Education (ASPET)
2005-Present	National Directors of Graduate Study Committee (ASPET)
2006, 2008-2010	Reviewer, ASPET Summer Undergraduate Research Fellow Institutional Proposals
2011	ASPET Graduate Student Colloquium at EB10, "Science, Scientist, Advocate: Making the Case for Increased Funding for Biomedical Research," Co-Organizer
2012	Graduate Student Colloquium at EB11, "Survival Skills for Graduate Students," Co-Organizer
2012-2015	ASPET Directors of Graduate Studies Sub-Committee
2015	ASPET Symposium at Experimental Biology 2015, "Nanotoxicology: Small particles, big concerns," Co-organizer

Editorial Activities:

1984-1988	Specialist Subject Editor: "Photoactivatable Agents in Pharmacology and Therapeutics," The International Encyclopedia of Pharmacology and Therapeutics
2000-2001	Section Leader, Occupational/Environmental Factors, Respiration Research
2001-2005	Editorial Board (Assistant Editor), xPharm, a comprehensive on-line reference for Pharmacology by Elsevier Science, Inc. (www.xPharm.com)

2005-2008	Editor, xPharm
2004-2022	Associate Editor, Pharmacology and Therapeutics
2009-2010	Co-Editor, Current Opinion in Pharmacology - Respiratory Section
1977-Present	Journal Article Reviewer: Pharmacological Reviews, Physiological Reviews, European Journal of Pharmacology, Journal of Pharmacology and Experimental Therapeutics, Science, Life Sciences, Canadian Journal of Physiology and Pharmacology, Biochemical Pharmacology, Biology of Reproduction, Science Books and Films (American Association for the Advancement of Science), Acta Pharmacologica et Toxicologica, Investigative Urology, Molecular Pharmacology, Toxicology and Applied Pharmacology, American Industrial Hygiene Association Journal, Journal of Applied Physiology, Quarterly Review of Biology, Journal of Neurochemistry, Environmental Health Perspectives, American Review of Respiratory and Critical Care Medicine, American Journal of Respiratory Cell and Molecular Biology, Journal of Clinical Investigation, Annals of the New York Academy of Sciences, Journal of Toxicology and Applied Pharmacology, Journal of Cellular Physiology, Proceedings of the National Academy of Sciences (USA), British Journal of Pharmacology, Journal of Toxicology and Environmental Health, Journal of the Autonomic Nervous System, European Respiratory Journal, American Journal of Physiology - Lung Cellular and Molecular Physiology, Respiration Research, Journal of Biosciences, Journal of Vascular Research, Toxicology, Pulmonary Pharmacology and Therapeutics, Respiratory Research, Biochemical Pharmacology, Inflammation Research, Experimental Lung Research, Nanotoxicology, African Journal of Pharmacy and Pharmacology, Frontiers in Renal and Epithelial Physiology, Basic and Clinical Pharmacology and Toxicology, ACS Nano

Advisorships:

Graduate Students (Major Advisor):

G. Kurt Hogaboom, Ph.D., GlaxoSmithKline, Philadelphia, PA
Kathleen Ice, Ph.D., Pfizer, Inc., New York, NY
Sheila Lamport-Vrana, Ph.D., Pennsylvania State University, Hershey, PA
Jeffrey A. Smith, M.D., M.S., Private Practice, Charlotte, NC
Tracey Lawrence, Ph.D., Mylan Pharmaceuticals, Inc., Morgantown, WV
Richard A. Johnston, Ph.D., The University of Texas Medical School at Houston
Yi Jing, Ph.D., Thomas Jefferson University, Philadelphia, PA
Michael Dodrill, Ph.D., Medical student, Marshall University, Huntington, WV
Eric Zaccone, Ph.D., Johns Hopkins University, Baltimore, MD
Michael Shimko, Ph.D., Mylan Pharmaceuticals, Inc., Morgantown, WV
Janet A. Thompson, Ph.D., NIOSH, Morgantown.

Postdoctoral Fellows:

Douglas W.P. Hay, Ph.D., GlaxoSmithKline, Philadelphia, PA
David Raeburn, Ph.D., Private pharmacy practice, Scotland
Stephen G. Farmer, Ph.D., Novartis, Wilmington, DE
Jun Huang, Ph.D., Privately employed in Canada
Juanita Dortch-Carnes, Ph.D., Morehouse University

Appavoo Rangasamy, Ph.D., NIOSH
David Wu, M.D., University of Cincinnati
Ugur Burcin Ismailoglu, Ph.D., University of Michigan
Dovenia Ponnoth, Ph.D., Long Island University
Kristen A. Russ, Ph.D.

Graduate Students (Advisory Committee):

William T. Gerthoffer, Ph.D. (WVU)
Theodore J. Torphy, Ph.D. (WVU)
John Schulz, M.D., Ph.D. (WVU)
Philip Monroe, Ph.D. (WVU)
James Morgan, M.D., Ph.D. (WVU)
Laurie Brown, Ph.D. (WVU)
Lynn LaCagnin, Ph.D. (WVU)
Leanne Monroe (WVU)
Peggy Biser, Ph.D. (WVU)
Mark A. Roberts, Ph.D. (WVU)
Daniel Todd , Ph.D. (Marshall University)
David Cheng, Ph.D. (Marshall University)
Peter Baciu, Ph.D. (WVU)
David Maize, Ph.D. (WVU)
Dawn Hunter, Ph.D. (WVU)
Janet Pruess, Ph.D., University of Melbourne (Australia)
Sharon Watkins, M.S. (WVU)
Erin Sikora-Wilfong, Ph.D. (WVU)
James Leonette, M.S. (WVU)
Duan Wei (National University of Singapore)
Leor Zellner (WVU)
Reyna VanGilder, Ph.D. (WVU)
Brenda Petersen, M.S. (WVU)
Dovenia Ponnoth, Ph.D. (WVU)
Maryam Sharifi, Ph.D. (WVU)
Maret Bernard (WVU)
Richard Carpenter, Ph.D. (WVU)
Lynnsey Carrell Jacks (WVU)
Ernest J. Young (WVU)
Joshua Butcher, Ph.D. (WVU)
Breanne Farris, Ph.D. (WVU)

WVU Undergraduate Biology Honors Students

Derek L. Horstemeyer, M.D.
Chris Eskins
Vicki Chang
Nick Chongswodti

WVU Medical School Summer Research Fellows

John Dagirmanjian, M.D.
T. Sukkasen, M.D.
Mitchell Nutt, M.D.
John McKnight, M.D.

David Patton, M.D.
Jesse Stem, M.D.
Loreen Pettit, M.D.

Morgantown High School "Triad" (Honor) Students

Brendan Rivers
Sara Rasmussen
Vicki Chang
L. Jameel R. Grant

Fairmont State College Veterinary Technology Preceptorship Student

Mary Koontz

Kettering University Students

Nicole Diotte
Gabriel A. Knudsen (Research Advisor)
Jessica McPhail
Steve Proper (Research Advisor)

Minority High School Summer Student Research Apprenticeship Program

L. Jameel R. Grant
Vicki Chang

ASPET Summer Undergraduate Research Fellow

Scott Forbes

Grant Review and Consulting Activities:

1984, 1987	National Science Foundation Grant Reviewer (Behavioral and Neural Sciences; U.S.-Spain Cooperative Program in Basic Sciences)
1985-1995	Technical Advisor, Extramural Grants Program, National Institute for Occupational Safety and Health
1992	*Ad hoc* reviewer, "Lung Biology and Pathology" Study Section, NIH
1993-1996	Overview Committee, EPSCoR Program, Marshall University
1991-1993	Member, Western Peer Review Consortium Committee B, American Heart Association
1993	Vice-Chair, Western Peer Review Consortium Committee B, American Heart Association
1994-1995	Chair, Cell Transport and Metabolism, Cellular Physiology and Pharmacology, Peer Review Committee, American Heart Association
1994	Chair, Multidisciplinary Project Grant Review Committee, American Heart

	Association
1994	Reviewer, Allegheny Research Institute Foundation, Philadelphia, PA
1995	Reviewer, Ohio University Baker Funds Award Committee, Athens, OH
1995	Reviewer, Cystic Fibrosis Research Center, University of Missouri-Columbia, Columbia, MO
	Reviewer, National Science Foundation (Neuronal and Glial Mechanisms Program)
1996	Reviewer, United States-Israel Binational Science Foundation
2001	Reviewer, BioMedical Research Council (BMRC), Singapore
2002	Reviewer, Johns Hopkins NIEHS Center in Urban Environmental Health: Pilot Project Program
2003-2004	Mylan Pharmaceuticals, Inc., Morgantown, WV
2003-2005	Study Section (Basic and Clinical Research), National Center for Complementary and Alternative Medicine, NIH
2007	Reviewer, Wellcome Trust, London, England
2007-2010	Reviewer, ASPET Summer Undergraduate Research Fellowships
2009-2010	Reviewer, Research Competitiveness Service, American Association for the Advancement of Science (AAAS)
2011	Reviewer, Health Research Board, Dublin, Ireland
	Reviewer, RDG-Bridge Applications, WVU Health Sciences Center
2012-Present	Reviewer, Basic Pharmacology Advisory Committee, P*h*RMA Foundation
2014	Reviewer, West Virginia Clinical & Translational Science Institute's Pilot Grants Program

Participation in Conferences:

1984	Frontiers in Histamine Research; International Symposium, Paris, France
1988-1989	International Advisory Committee for Conference: "Purine Nucleosides and Nucleotides in Cell Signaling: Targets for New Drugs", Bethesda, MD
1989	Speaker, Conference on "Putative Mechanisms of Airway Hyperresponsiveness", sponsored by ICI Pharmaceuticals Group, at The New York Academy of Sciences, NY

Scientific Sessions/Symposia Chair/Co-Chair:

1982	Organizer and Speaker: "Biochemical and Pharmacological Applications of Photoaffinity Labels," Symposium at Federation of American Societies for Experimental Biology (FASEB) meeting, New Orleans, LA
1983	"Receptors," FASEB, Chicago, IL
1985	"Receptors," FASEB, Chicago, IL
1985	"Pulmonary and Respiratory Pharmacology," ASPET, Boston, MA
1986	"Receptors," FASEB, St. Louis, MO
	"Pulmonary Pharmacology," ASPET, Baltimore, MD
1988	"Pulmonary-Respiratory Pharmacology," ASPET, Montreal, Canada
	"Asthma: Role of Airways Epithelium in Bronchial Hyperreactivity," FASEB, Las Vegas, NV
1988-1989	Conference Co-organizer and Speaker: "Biological Actions of Extracellular ATP," sponsored by The New York Academy of Sciences, Philadelphia, PA
1989	"Purine Nucleosides and Nucleotides in Cell Signalling: Targets for New Drugs," NIH, Bethesda, MD
	"Pulmonary-Respiratory Pharmacology," ASPET, Salt Lake City, UT
1991	"Toxicology II," ASPET, San Diego, CA
1994-1995	Colloquium Co-organizer and Speaker: "Structure and Function of P_2-Purinoceptors", sponsored by the American Society for Pharmacology and Experimental Therapeutics (ASPET), Atlanta, GA
1996-1998	Conference Organizer and Speaker: "Asthma: In and Out of the Workplace", an international Conference on the basic mechanisms of occupational asthma, sponsored by NIOSH and the WVU Medical School Office of Continuing Medical Education, Morgantown, WV, April 30 - May 2, 1998.
1997	"Airway Responsiveness: Role of Epithelium," American Thoracic Society (ATS), San Francisco
2006	Symposium Organizer, "New Aspects of Glucocorticoid Signaling," Experimental Biology
2008	Symposium Organizer, "Chance Favors the Prepared Mind – A Nobel Perspective," Centennial Symposium, Experimental Biology
2011	"What Happens to Drugs in the Body? A Pharmacokinetics Refresher Course," Experimental Biology
	"ASPET Graduate Student Colloquium," Experimental Biology
2012	"ASPET Graduate Student Colloquium," Experimental Biology

2015 "Nanotoxicology: Small particles, big concerns," Experimental Biology

WVU University/Medical School/Departmental Committees and Assignments:

1980-1986	Visiting Speakers Committee, WVU Medical School
1978-1979	Planning Committee, WVU Medical School
1980-1983	Curriculum Committee, WVU Medical School
1985-2001	Safety Committee, Department of Pharmacology and Toxicology, WVU Medical School
1986-1990	Promotions and Tenure Committee, Department of Pharmacology and Toxicology, WVU Medical School
1987-1989	Patents Committee, WVU
1992-1997	Pulmonary-Cardiovascular Journal Club Coordinator, Department of Pharmacology and Toxicology, WVU Medical School
1994-1995	PET/Lifestyle Center Committee, WVU Medical Center
1994-1997	Cardiovascular/Respiratory Journal Club Organizer, Department of Pharmacology and Toxicology, WVU Medical School
1998-2001	Signal Transduction Journal Club Organizer, Department of Pharmacology and Toxicology, WVU Medical School
1999-2004	Founder and Co-Organizer, "Medical School 101/102," a 10-week per semester evening course on modern concepts in biomedical research for a lay audience, WVU Medical School
2000-2002	Educational Programs Advisory Committee, Department of Community Medicine, WVU Medical School
2001-2012	Graduate Studies Committee, WVU Department of Physiology and Pharmacology
2002-2003	New Pharmacology Curriculum Organizing Committee, Chair; WVU Department of Physiology and Pharmacology
2002-2003	Graduate Student Recruitment Committee, WVU School of Medicine
2005-2007	Research Funding Development and Bridge Grant Review Committee, WVU, Ad hoc reviewer
2007-2010	Committee on Pharmacology, WVU School of Medicine
2009-Present	Graduate Advisory Committee for the Cellular & Integrative Physiology Program

Significant Recent NIOSH Administrative Activities:

1994-2000	Records Management Center and Archives Committee, NIOSH (agency-wide)
1994-2001	Manuscript Review Process Action Team, NIOSH (agency-wide); set guidelines for NIOSH-wide process for internal manuscript review
1995-2001	Leader, Hard Metals Research Group
1996-2004	Health Effects Laboratory Division Representative for National Occupational Research Agenda ("NORA") Implementation, Asthma/COPD Team
1996-Present	Animal Care and Use Committee
1997-1999	Animal Facilities Planning/Advisory Committee
1999-2007	Database Committee (Chair) to develop a division-wide electronic process (electronic laboratory notebook) for data entry, storage and retrieval, and archiving
1999-2004	Coordinator, Inflammation Interest Group
2000-2005	NIOSH Representative to the Collaborative Electronic Notebook Systems Association (CENSA)
2005-2006	Chair, Branch Chief Search Committee, Engineering and Technology Control Branch
2009-Present	Diacetyl Criteria Document Committee
2010-Present	Team Leader, Integrative Toxicology Team (Oil Dispersant/Crude Oil Initiative)
2010-Present	Team Leader, Integrative Toxicology Team (Silica Dust/Diesel Exhaust Initiative)
2012	Alice Hamilton Award Review Committee
2013-Present	Oil and Gas Extraction Steering Committee
2014-2015	Pathology and Physiology Research Branch Manuscript reviewer for internal clearance

Teaching Experience:

1970-1974	University of Alabama at Birmingham (Teaching Assistant); Lectures to Medical, Dental, Nursing and Optometry Students: Cholinergic Drugs, Steroids, Gastrointestinal Drugs, Pharmacology Student Laboratories and Conference Groups
1977-Present	WVU Lectures to Graduate, Medical, Dental, Pharmacy, Medicinal Chemistry, Nursing, and Occupational Toxicology Students: Dose-response Curves; Drug Antagonism; Cardiac Glycosides and Inotropic Agents; Anti-Anginal Agents; Local Anesthetics; Antiarrhythmic Drugs; Therapy of Asthma; Receptor Theory; Anticoagulant, Antiplatelet and Fibrinolytic Agents; Antianemics; Antihistamines; Calcium Antagonists; Toxicology; Autonomic Nervous System; Noradrenergic Transmission; Adrenoceptor Agonists; Adrenoceptor Antagonists; Antihypertensive Agents

1977-Present	WVU Graduate Courses: Receptor Theory; Ion Transport; Intracellular Calcium Regulation; Excitation-Contraction Coupling; Mechanisms of Muscle Contraction; Photoaffinity Labeling; Receptor Binding; Adenosine and ATP; Lung Biology; Pulmonary Pharmacology; PathoPhysiology and Pharmacology of Asthma; Nitric Oxide; Occupational Asthma; Conducting Airways; Lipopolysaccharide; Airway Smooth Muscle; Airway Epithelium; Advanced Pulmonary Physiology (Course Co-Coordinator); Advanced Pharmacology I (Course Co-Coordinator); Advanced Pharmacology II (Course Co-Coordinator)
2010	York College of Pennsylvania, Lectures to WellSpan Health Nurse Anesthetist Program: Cardiac Glycosides and Inotropic Agents; Antiarrhythmic Drugs; Anticoagulant, Antiplatelet and Fibrinolytic Agents
2012-Present	West Virginia University Honors College: Appalachian Culture, Course coordinator and Instructor

Research Support:

1975-1976	American Heart Association-West Virginia Affiliate (AHA-WVA), "Ca^{2+} Transport in Supersensitive Aortic Smooth Muscle," Postdoctoral Fellow, $10,800
1976-1977	NINCDS, "Cellular Calcium Pools in Supersensitive Smooth Muscle," Postdoctoral Fellow, $14,200
1976-1977	AHA-WVA, "Ca^{2+} Transport in Supersensitive Aortic Smooth Muscle," Principal Investigator, $3,000
1977-1980	NIOSH, "Pharmacological Studies of Bronchoconstriction," Project Director, $63,000/3 years
1979-1980	NIOSH, "Neurotransmission to Airway Smooth Muscle," Project Director, $16,500
1980-1982	NIOSH, "Organic Dusts: Airway Smooth Muscle and Nerve Effects," Project Director, $60,000/2 years
1982-1983	AHA-WVA, "Adenosine Receptor Antagonist in Coronary Arteries," Collaborating Investigator, $10,000
1982-1983	NIOSH, "Physiology and Pharmacology of Occupational Respiratory Diseases," Collaborating Investigator, $54,000
1983-1987	NIOSH, "Byssinosis- Inhalation studies," $85,000/3 years, Collaborating Investigator
1983-1987	NIOSH, "Silicosis- Inhalation Studies," $90,000/3 years, Collaborating Investigator
1984-1985	AHA-WVA, "Ca^{2+} Channels in Supersensitive Vascular Smooth Muscle," Principal Investigator, $9,454
1984-1987	NIOSH, "Occupational Asthma- Etiologic Agent(s) and Disease Mechanism(s)," $72,600/3 years, Project Director

1987-1990	NIOSH, "Occupational Asthma: Role of Airway Epithelium," $29,689 current year, $98,389/3 years, Project Director
1989	Army Medical Research Institute, "Biological Actions of Extracellular ATP," Conference Grant for New York Academy of Sciences Conference, $5,000, Co-Principal Investigator
1989	National Science Foundation, "Biological Actions of Extracellular ATP," Conference Grant for New York Academy of Sciences Conference, $5,000, Co-Principal Investigator
1990-1993	NIOSH, "Agricultural Dusts: Animal Models of Asthma," $74,590 current year, $264,000/3 years, Project Director
1991-1995	NIOSH, "Occupational Asthma: Epithelium-Muscle Interactions," $100,000 current year, $450,000/4 years, Project Director
1997-2000	Consultant to R01 application by Richard Dey, Ph.D., WVU, "Neuroanatomy and Molecular Biology of Airway Neurons", $559,757/3 years
1996-1997	NIOSH, "Metals: Asthma and Hard Metal Disease Models," $450,000/3 years, Project Director.
1996-1997	NIOSH, "Occupational Asthma: High and Low Molecular Weight Asthmagens," $450,000/3 years, Project Director
1997-2001	NIOSH, "Occupational Asthma Disease Models," $750,000/3 years, Project Director (note: this project merged the two preceding projects listed just above)
2000-2004	NIOSH, "Epithelial Transduction in Airway Hyperactivity," $1,136,441/4 years, Project Director
2001	Summer Undergraduate Research Fellowship granted to Scott Forbes, $2500, Advisor, American Society for Pharmacology and Experimental Therapeutics
2002-2004	Ohio Valley Affiliate, American Heart Association, Pre-doctoral Fellowship to Ji Jing, 2 years, $17,600 per year
2005-2008	NIOSH, "Airway epithelium: Target of inhaled toxicants," $1,127,148/4 years, Project Director
2008-2011	NIOSH, "PathoPhysiology of popcorn workers' lung," $1,488,989/4 years, Co-Project Director
2012-2016	NIOSH, "Pulmonary function and nanoparticle inhalation: In vivo and in vitro effects." $1,321,743/4 years, Project Officer
2012-2016	NIOSH, "Toxicological evaluation of pulmonary exposure to graphenes." Jenny Roberts, Project Officer. I am a collaborator on this project.
2012-2016	NIOSH, "Health effects of inhaled crude oil." $874,890 first year, $3,688,580/4 years, Project Officer

2013-2017	NIOSH, "Fracking: Toxicological effects of silica & diesel exhaust exposure." $603,553 first year, $2,523,858/4 years, Project Officer.
2017-2018	NIOSH, "Fracking: Toxicological effects of silica & diesel exhaust exposure." $30,000, Project Officer. This project has continued into 2022-2023.
2020-2023	NIOSH, "Metabolic syndrome: Risk factor for silicosis?" $27,865 first year, $107,365/4 years, Project Officer.

Invited Seminars/Presentations:

1979	Department of Physiology and Biophysics, WVU ("WVU") Medical Center, Morgantown, WV
	Department of Pharmacology, University of Virginia, Charlottesville, VA
1980	Department of Physiology, WVU, Morgantown, WV
	Department of Pharmacology and Toxicology, WVU, Morgantown, WV
	AHA-WVA Annual Meeting, Harpers Ferry, WV
	Department of Pharmacology, St. Louis University, St. Louis, MO
1981	Department of Physiology, WVU, Morgantown, WV
	Department of Pharmacology and Toxicology, WVU, Morgantown, WV
	Kirksville College of Osteopathic Medicine, Kirksville, MO
	Department of Pharmacology, University of Rochester, Rochester, NY
	Department of Pharmacology, College of Medicine and Dentistry of New Jersey, Newark, NJ
1982	Merck Institute for Therapeutic Research, West Point, PA
	Department of Pharmacology, Louisiana State University, New Orleans, LA
	Department of Physiology, WVU, Morgantown, WV
	Department of Pharmacology and Toxicology, WVU, Morgantown, WV
	SmithKline Beckman, Philadelphia, PA
1983	Department of Pharmacology and Toxicology, WVU, Morgantown, WV
	Department of Pharmacology, University of Nevada Medical School, Reno, NV.
1983	Department of Pharmacology and Toxicology, WVU, Morgantown, WV
1984	U.S. Department of Agriculture, New Orleans, LA

1985	Department of Pharmacology and Toxicology, WVU, Morgantown, WV
1987	School of Pharmacy, Auburn University, Auburn, AL
	Department of Anatomy, WVU, Morgantown, WV
	Keynote Address presented at the American Heart Association, Pennsylvania Affiliate, Western Pennsylvania Chapter
	Department of Pharmacology and Toxicology, WVU, Morgantown, WV.
1988	ALOSH/WVU Respiratory System Research Seminar Series, WVU, Morgantown, WV.
	Department of Physiology and Biophysics, Mayo Clinic and Mayo Foundation, Rochester, MN
	Department of Pharmacology, Mayo Clinic and Mayo Foundation, Rochester, MN
	Department of Pharmacology, University of South Carolina, Columbia, SC
1989	Department of Pharmacology, University of Pittsburgh, Pittsburgh, PA
	Nelson Research Center, Irvine, CA
	Department of Zoological and Biomedical Sciences, Ohio University, Athens, OH
1990	Department of Pharmacology and Toxicology, WVU, Morgantown, WV.
	Department of Pharmacology, Creighton University, Omaha, NE
	NIOSH/WVU Respiratory Disease Seminar Series
1991	Department of Pharmacology and Toxicology, WVU, Morgantown, WV.
1992	Department of Pharmacology, Marshall University, Huntington, WV.
	Department of Physiology, East Carolina University Medical School, Greenville, NC.
	Department of Medicine, University of North Carolina, Chapel Hill, NC.
	Department of Pharmacology, Kirksville College of Osteopathic Medicine, Kirksville, MO
1994	Department of Pharmacology and Toxicology, WVU, Morgantown, WV
1994	Division of Respiratory Disease Studies, NIOSH, Morgantown, WV
1995	Division of Respiratory Disease Studies, NIOSH, Morgantown, WV
	Department of Biology, WVU, Morgantown, WV

1996	Department of Pharmacology and Toxicology, WVU, Morgantown, WV
	Division of Respiratory Disease Studies, NIOSH, Morgantown, WV
1997	Health Effects Laboratory Division, NIOSH, Morgantown, WV
2000	Department of Pharmacology and Toxicology, WVU, Morgantown, WV
2002	Department of Physiology and Pharmacology, WVU, Morgantown, WV
	Department of Medicine, WVU, Morgantown, WV
	Department of Pharmacology, Creighton University, Omaha, NE
	Department of Biochemistry and Molecular Pharmacology, WVU, Morgantown, WV
2003	Department of Physiology and Pharmacology, WVU, Morgantown, WV
	Department of Biochemistry and Molecular Pharmacology, WVU, Morgantown, WV
2004	Department of Community Medicine, WVU, Morgantown, WV
	Department of Biochemistry and Molecular Pharmacology, WVU, Morgantown, WV
	Department of Physiology and Pharmacology, WVU, Morgantown, WV
	Department of Medicine, Section of Pulmonary and Critical Care Medicine, WVU, Morgantown, WV
	Department of Pharmaceutical Sciences, School of Pharmacy, WVU, Morgantown, WV
2005	Department of Physiology and Pharmacology, WVU, Morgantown, WV
	Allegheny-Erie Society of Toxicology Fall Meeting, Morgantown, WV
2008	Department of Medicine, University of Pittsburgh, Pittsburgh, PA
	Department of Basic Pharmaceutical Sciences, WVU
	Center for Respiratory Biology and Lung Disease, WVU
2023	7th Annual CDC Laboratory Science Symposium

Miscellaneous and Community Activities:

American Heart Association (AHA):

National Level

1985-1988 Member, Middle Atlantic Regional Research Committee

1985-1986 Vice-Chairman, Middle Atlantic Regional Research Committee

1986 Site Visitor, AHA-South Carolina Affiliate (Peer Review Recertification)

1987 Site Visitor, AHA-Virginia Affiliate (Peer Review Recertification)

1987 Site Visitor, AHA-Maryland Affiliate (Peer Review Recertification)

1987 Member, Middle Atlantic Regional Heart Committee

1991 Site Visitor, AHA-Mountain West Peer Review Committee (Peer Review Recertification)

1991-1992 Planning Committee, 1992 Enterprise Conference, Cardiovascular Science/Research Enterprise

1992 Site Visitor, AHA-Nation's Capitol Affiliate (Peer Review Recertification)

1994 Site Visitor, AHA-Wisconsin and AHA-Minnesota Peer Review Committees (Peer Review Recertifications)

1993-1997 Research Policy and Evaluation Committee

1993-1996 Volunteer Stroke Advisory Committee

1996 Site Visitor, AHA-Nation's Capitol Affiliate (Peer Review Recertification)

Affiliate Level (prior to 1996, the AHA-WVA; from 1996 to 1998, the American Heart Association, Ohio-West Virginia Affiliate; after 1998, the Ohio Valley Affiliate; these changes brought about by corporate re-organization)

1979-1994 Board of Directors (West Virginia Affiliate)

1995-1998 Board of Directors (Ohio Valley Affiliate)

1978-1988 Research Policy and Allocations Committee

1981-1983
1992-1994 Chairman, Research Policy and Allocations Committee

1981-1982 Program Planning and Review Committee

1983-1985 Vice-Chairman, Peer Review Subcommittee

1984-1988 Training Committee

1985-1987 Chairman, Peer Review Subcommittee

1986-1987 Vice-Chairman, Board of Directors

1986-1987	Chairman, Administrative Coordinating Committee
1987-1990	Nominating Committee
1987-1994	Secretary
1992	Program Planning and Review Committee
1995-1996	President-Elect
1995-1996	Annual Meeting Planning Committee, AHA-West Virginia Affiliate (Chair, 1995)
1995-1996	Ohio Affiliate-West Virginia Affiliate Merger Task Force
1996-1998	Research Committee
1998	Chair, Undergraduate Student Summer Research Peer Review Sub-Committee
1991-1998	Development Chair, Monongalia County Division
1995-1996	President, Monongalia County Division
1992-1999	Heart Walk Organizing Committee
2000-2001	Chair, Gala Ball Organizing Committee

NIOSH

1985-1994	Board of Directors, ALOSH Welfare and Recreation Association
1989-1994	Re-cycling Coordinator for NIOSH, Morgantown, WV. Initiated, designed and managed the recycling project for the institution.

PACE TEC, Inc., Morgantown, WV (a not-for-profit vocational rehabilitation/sheltered workshop)

1986-1996	Board of Directors
1987-1989	Secretary
1989-1994	Vice-President of the Board of Directors

Valley HealthCare Systems, Inc. (a not-for-profit community mental health agency)

1991-Present	Board of Directors (Personnel, Marketing, Audit, and Grievance Committees)
2002-2008	Vice-President of the Board of Directors

Public Television

1984-1987	Pledge Drive Volunteer Coordinator, Public Television Station WNPB, Morgantown, WV

1991-1999 Board of Directors, Friends of WNPB (Vice-President, 1993-1995; President, 1995-1998)

1991-1992 Co-Host, "Stateline Friday," a live public affairs program produced by WNPB

1992-1995 Co-Host and Associate Producer, "On The Line With...," a live public affairs/phone-in program produced by WNPB

1994-1998 Board of Directors, National Friends of Public Television (Membership Chair, 1995-1996; Vice-Chair, 1997 - 1998; Chair, 1998-1999)

1995-1998 Member, Board of Directors, West Virginia Public Broadcasting Foundation, Inc.

1995-1999 Lay Representative and Community Advocate, America's Public Television Stations, Inc. (Washington, DC)

2010-Present Pledge Drive On-Air Host, West Virginia Public Television

Community Theater

1985-1988 Board of Directors, Town and Country Players

1986-1988 Secretary-Treasurer, Town and Country Players

"WISe" Community Network

1994-2003 Co-founder, Vice-President and supporting Sysop of "**W**est Virginia's **I**nformation **S**ervic**e** ("WISe"), a free, not-for-profit community network for not-for-profit organizations and individuals (http://www.wvwise.org)

Prevention Research Center at WVU

1999-2005 Community Partnership Board (Co-Chair, 1999-2003)

1999-2005 Steering Committee

1998-2005 Advisory Board

2002-2005 National Community Committee, Prevention Research Centers

Mended Hearts, Inc.

1999-2012 Board of Directors, President (2007-2010), Newsletter Editor and Treasurer

PattyFest, Inc.

2002-Present A 501(c)(3) organization for the preservation of West Virginia Old-Time music (Founder, Incorporator and President, 2002-2012)

Dominion Post Newspaper, Morgantown, WV

2008-2009 Community Advisory Board

In Touch and Concerned, Inc.

2007-2013 Board of Directors. A 501(c)(3) organization for providing assistance and transportation assistance to senior citizens

PUBLICATIONS

Books, Chapters, Reviews, Monographs, Policy Documents, Letters

Fedan, J.S.: Anticoagulant, anti-platelet and fibrinolytic (thrombolytic) drugs. In: Craig, C.R. and R.E. Stitzel (eds.): *Modern Pharmacology*. Little Brown and Co., Boston, 1982.

Fedan, J.S.: Pharmacological and biochemical applications of photoaffinity labels: Introduction. Fed. Proc. 42:2825, 1983.

Fedan, J.S., G.K. Hogaboom, D.P. Westfall and J.P. O'Donnell: Photoaffinity labeling of receptors in functional studies on isolated smooth muscle: Studies on P_2-purinergic and H_1-histamine receptors. Fed. Proc. 42:2846-2850, 1983.

Westfall, D.P., J.S. **Fedan**, G.K. Hogaboom and J.P. O'Donnell: The use of arylazido aminopropionyl ATP, a new ATP antagonist, to identify the role of purines in neuronal transmission. In: *Vascular Neuroeffector Mechanisms: 4th International Symposium*. Bevan, J.A., M. Fujiwara, R.A. Maxwell, K. Mohri, S. Shibata and N. Toda (eds.), Raven Press NY, 1983, pp. 305-309.

Fedan, J.S., G.K. Hogaboom and J.P. O'Donnell: Commentary: Photoaffinity labels as pharmacological tools. Biochem. Pharmacology 33:1167-1180, 1984.

Fedan, J.S., D.P. Westfall, G.K. Hogaboom and J.P. O'Donnell: Use of photo-affinity labels as P_2-purinoceptor antagonists. In: *Methods Used in Adenosine Research (Methods in Pharmacology*, Volume 6). Paton, D.M. (ed.), Plenum Publishing Corporation, New York, 1985, pp. 279-292.

Hogaboom, G.K., K.S. Ice, D.L. Horstemeyer, J.P. O'Donnell and J.S. **Fedan**: Interaction of 4(5)-[2-(4-azido-2-nitroanilino)ethyl]imidazole, a histamine receptor photoaffinity label, with H_1-histamine receptors in intact smooth muscle and in cerebral cortical membranes. In: *Frontiers in Histamine Research: A Tribute to Heinz Schild*. Ganellin, C.R. and J.-C. Schwartz (eds.), Pergamon Press, Oxford, 1985, pp. 13-18.

Fedan, J.S.: Anticoagulant, anti-platelet and fibrinolytic (thrombolytic) drugs. In: *Modern Pharmacology*. Craig, C.R. and R.E. Stitzel (eds.). Second Edition, Little Brown and Co., Boston, 1986.

Fedan, J.S., D.W.P. Hay and D. Raeburn: Ca^{2+} and Respiratory Smooth Muscle Function: Is There a Role for Calcium Entry Blockers in the Therapy of Asthma? In: *Current Topics in Pulmonary Pharmacology and Toxicology*. Hollinger, M.A. (ed.), Elsevier, New York, pp. 53-94, 1987.

Fedan, J.S., D.W.P. Hay, S.G. Farmer and D. Raeburn: Modulation of Airway Smooth Muscle Reactivity by Epithelial Cells. In: *Asthma: Basic Mechanisms and Clinical Management*. Rodger, I.W., P.J. Barnes and N.C. Thomson (eds.), Academic Press, pp. 143-162, 1988.

Farmer, S.G., D.W.P. Hay, D. Raeburn and J.S. **Fedan**: Influence of the epithelium on airway responses to bronchorelaxant drugs: Is there an epithelium-derived factor. Intl. Seminar on Relaxant Factors: Their Significance in Cardiovascular and Respiratory Diseases, London, 1988.

Fedan, J.S.: Anticoagulant, anti-platelet and fibrinolytic (thrombolytic) drugs. In: *Modern Pharmacology*. Craig, C.R. and R.E. Stitzel (eds.). Third Edition, Little Brown and Co., Boston, 1990.

Fedan, J.S.: Drugs affecting blood. *Encyclopaedia Brittanica* 17:507-509, 1990.

Dubyak, G.R. and J.S. **Fedan** (Eds.): The Biological Actions of Extracellular ATP. Ann. N.Y. Acad. Sci. Vol. 603, 1990.

Fedan, J.S. and Lamport, S.J.: P_2-Purinoceptor antagonists. Ann. N.Y. Acad. Sci. 603:182-197, 1990.

Dubyak, G.R. and **Fedan,** J.S.: The biological action of extracellular adenosine triphosphate. Comp. Ther. 16:57-61, 1990.

Review: The Airway Epithelium: Physiology, Pathophysiology, and Pharmacology by Stephen G. Farmer, Douglas W. P. Hay

Fedan, J.S., Review of *The Airway Epithelium: Physiology, Pathophysiology, and Pharmacology* by Stephen G. Farmer, Douglas W. P. Hay. Quart. Rev. Biol. 68:317-318, 1993.

Fedan, J.S.: Anticoagulant, antiplatelet and fibrinolytic (thrombolytic) drugs. In: *Modern Pharmacology*. Craig, C.R. and R.E. Stitzel (eds.). Fourth Edition, Little Brown and Co., Boston, 1994.

Weisman, G.A., J.T. Turner and J.S. **Fedan**: ASPET Colloquium Report: Structure and function of P_2-purinoceptors. J. Pharmacology Exp. Ther. 277:1-9, 1996.

Fedan, J.S. and Shebuski, R.J.: Anticoagulant, antiplatelet and fibrinolytic (thrombolytic) drugs. In: *Modern Pharmacology*. Craig, C.R. and R.E. Stitzel (eds.). Fifth Edition, Little Brown and Co., Boston, 1997.

Fedan, J.S.: Nucleotides and nucleosides in pulmonary function. In: *Purinergic Approaches in Experimental Therapeutics*. Jacobson, K. and Jarvis, M.F. (eds.). John Wiley and Sons, Inc., New York, 1997, pp. 333-356.

Biagini, R.E., S. Deitchman, E.J. Esswein, J. **Fedan**, J.P. Flesch, P.K. Hodgins, T.K. Hodous, R.D. Hull, W.R. Jarvis, D.M. Lewis, J.A. Lipscomb, B.D. Lushniak, M.L. Pearson, E.L. Petsonk, L. Pinkerton, P.D. Siegal, W.G. Wippel, and K.A. Worthington. Preventing Allergic Reactions to Natural Rubber Latex in the Workplace. NIOSH Alert, DHHS (NIOSH) Publication No. 97-135, June 1997.

Turner, J.T., Weisman, G.A. and **Fedan**, J.S., eds. The P_2-Purinergic Receptor, *The Receptor* Series, Humana Press, Totowa, NJ, 1998, 440 pages.

Fedan, J.S.: Cell responses initiated by ecto-kinase. In: Turner, J.T., Weisman, G.A. and **Fedan**, J.S., eds. "*The P_2-Purinergic Receptors*", *The Receptor* Series, Humana Press, Totowa, NJ, 1998, pp. 231-255.

Fedan, J.S., Weisman, G.A. and Turner, J.T.: Future Directions, In: Turner, J.T., Weisman, G.A. and **Fedan**, J.S., eds. "*The P_2-Purinergic Receptors*", *The Receptor* Series, Humana Press, Totowa, NJ, 1998, pp. 427-428.

Fedan, J.S.: Nucleosides and nucleotides in the lung: Role in asthma. Am. J. Respir. Cell Molec. Biol. 21:7-9, 1999.

Fedan, J.S., Van Scott, M.R. and Johnston, R.A.: Pharmacological techniques for the in vitro study of airways. J. Pharmacol. Toxicol. Meth., 45:159-174, 2001.

Fedan, J.S.: Anticoagulant, antiplatelet and fibrinolytic (thrombolytic) drugs. In: *Modern Pharmacology with Clinical Applications*. Craig, C.R. and R.E. Stitzel (eds.). Sixth Edition, Lippincott, Williams and Wilkins, Baltimore, 2003.

Fedan, J.S.: Asthma. xPharm, 2004; Executive Editors: S.J. Enna and D.B.; Publisher, Elsevier, New York (see http://www.xpharm.com/citation?Article_ID=1223)

Fedan, J.S.: Thrombosis-Embolism. xPharm, 2004; Executive Editors: S.J. Enna and D.B.; Publisher, Elsevier, New York (see http://www.xpharm.com/citation?Article_ID=1064)

Fedan, J.S. and Piedimonte, G. (Eds.): Respiratory Section. Curr. Opin. Pharmacology – Respiratory Section. 10(3), 2010.

Fedan, J.S. and Piedimonte, G.: Dr. R. Shiffmann's Asthmador: Relevant to our times, or a snake oil remedy? Curr. Opin. Pharmacology 10:213–217, 2010.

Castranova, V. and **Fedan**, J.: Dr Val Vallyathan: in memoriam (Letter to the Editor). Particle Fibre Toxicol. 7:24, 2010.

McKernan, L.T., K.H. Dunn, A. Garcia, D.V.L. Hirst, F. Nourian, R.P. Streicher, J.L. Topmiller, K. Kreiss, G.J. Kullman, C. Piacitelli, K. Fedan, J. Couch, B. Curwin, D.A. Dankovic, E. Galloway, S.J. Gilbert, T.J. Lentz, R. Park, C. Sofge, J. **Fedan**, A.F. Hubbs, J.A. Parker. *Criteria for a recommended standard occupational exposure to diacetyl and 2,3-pentanedione.* In press.

Fedan, J.S.: Asthma. Reference Module in Biomedical Sciences, Elsevier, 2015.

Fedan, J.S.: Thrombosis-Embolism, Reference Module in Biomedical Sciences. Elsevier. 02-Mar-2016 doi: 10.1016/B978-0-12-801238-3.99531-X.

Fedan, J.S. and Morise, A.: Treatment of ischemic heart disease. Craig and Stitzel's Modern Pharmacology, 7th ed., L. Fink, E. Davis, and K. Woodfork (eds.), JP Medical Publishers, London, In press.

Fedan J.S. and Wenzel, S.: Asthma. Craig and Stitzel's Modern Pharmacology, 7th ed., L. Fink, E. Davis, and K. Woodfork (eds.), JP Medical Publishers, London, In press.

Fedan, J.S. and Fareed, J.: Anticoagulant, Antiplatelet, and Fibrinolytic (Thrombolytic) Drugs. Craig and Stitzel's Modern Pharmacology, 7th ed., L. Fink, E. Davis, and K. Woodfork (eds.), JP Medical Publishers, London, In press.

Contributing author. Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health. Comments of the National Institute for Occupational Safety and Health to the Food and Drug Administration (FDA) in response to Establishment of a Public Docket: Electronic Cigarettes and the Public Health Workshop. Docket No. FDA-2014-N-1936. Cincinnati, Ohio. May 8, 2015.

Author. "Research Rounds" commentary, NIOSH: Laboratory Studies Focus on Exposures Associated with Oil and Gas Operations. http://www.cdc.gov/niosh/Research-Rounds/ResRoundsV1N7.html#Laboratory%20Studies%20Focus%20on%20Exposures%20Associated%20with%20Oil%20and%20Gas%20Operations, 2016.

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Russ, K., Thompson, J., **Fedan,** J.: Comparison of the toxicological effects of multi-walled carbon nanotubes and nitrogen-doped multi-walled carbon nanotubes on rat lung function. Toxicologist 162:2738, 2018.

Fedan, J.S., Thompson, J.A., Russ, K.A., Roberts, J.R., Schwegler-Berry, D. and Mercer, R.R.: Interaction of respirable fracking sand dust (FSD) with pulmonary tissues in vivo and in vitro. FASEB J. 32, Issue 1 Supple:Abstract 692.6, 2018.

Thompson, J.A., McKinney, W.G., Jackson, M.C., Law, B.F. and **Fedan**, J.S. Crude oil vapor effects upon airway epithelial ion transport and lung function in the rat. Allegheny-Erie Society of Toxicology Annual Meeting, May, 2018.

Russ, K., Thompson, J., **Fedan,** J.: Comparison of the toxicological effects of multi-walled carbon nanotubes and nitrogen-doped multi-walled carbon nanotubes on rat lung function. Allegheny-Erie Society of Toxicology Annual Meeting, May, 2018.

Fedan, J.D., Thompson, J.A., Russ, K.A., Roberts, J.R., Schwegler-Berry, D. and Mercer, R.R.: Interaction of respirable fracking sand dust (FSD) with pulmonary tissues in vivo and in vitro. Allegheny-Erie Society of Toxicology Annual Meeting, May, 2018.

Thompson, J.A, McKinney, W.G., Jackson, M.C., Law, B.F. and **Fedan**, J.S.: Effects of diesel exhaust on airway epithelial ion transport and lung function in the rat. Society of Toxicology Annual Meeting, 2019.

Sriram, K., Lin, G.X., Jefferson, A.M., McKinney,W., Antonini, J.M., **Fedan**, J.S., Roberts, J.R., Porter, D.W. and Hubbs, A.F.: Olfactory and central neurotoxicity of occupationally-relevant particulate aerosols and nanomaterials. Environmental and Occupational Health Aspects Related to Nano- and Ultrafine Particulate Matter. Leon, Norway, 2019.

Sriram, K., Lin, G.X., Jefferson, A.M., McKinney,W. and **Fedan**, J.S.: Neural effects of fracking sand dust aerosols. Society of Toxicology Annual Meeting, 2019.

Fedan, J.S., Russ, K.A., Thompson, J.A., Jackson, M.C. and McKinney, W.G.: Effects of sub-chronic inhalation of crude oil vapor (COV) on reactivity to methacholine and neural regulation of rat airways in vitro. Experimental Biology Annual Meeting, 2019.

Krajnak, K., McKinney, W., Waugh, S., Kan, H., Kashon, M.L. and **Fedan**, J.S.: Cardiovascular effects following a single inhalation exposure to crude oil vapor. Experimental Biology Annual Meeting, 2019.

Fedan, J.S., Russ, K.A., Thompson, J.A., Jackson, M.C. and McKinney, W.G.: Effects of sub-chronic inhalation of crude oil vapor (COV) on reactivity to methacholine and neural regulation of rat airways in vitro. Allegheny-Erie Society of Toxicology Annual Meeting, May, 2019.

Sriram K, Lin GX, Jefferson AM, McKinney W, Antonini JM, **Fedan** JS, Roberts JR, Porter DW, Hubbs AF. Olfactory and central neurotoxicity of occupationally-relevant particulate aerosols and nanomaterials. Proceedings of the Environmental and Occupational Health Aspects Related to Nano- and Ultrafine-Particulate Matter, Loen, Norway, June 3-6, 2019, pp 35, 2019.

Fedan, J.S., Russ, K.A., Thompson, J.A., Jackson, M.C. and McKinney, W.G.: Effects of sub-chronic inhalation of crude oil vapor (COV) on reactivity to methacholine and neural regulation of rat airways in vitro. NIOSH Intramural Science Meeting, Morgantown, WV, July 30 - August 1, 2019.

Fedan, J.S., Barger, M., Leonard, S.S., Thompson, J.A., Snawder, J.E., Dozier, JA.K., Coyle, J., Kashon, M.L. and Roberts, J.R.: Pulmonary toxicity of nine sand dusts generated at hydraulic fracturing sites in comparison to respirable crystalline silica. Experimental Biology Annual Meeting, 2020.

Thompson J.A., Krajnak, K., Johnston, R.A., McKinney, W. and **Fedan**, J.S.: Western diet alters blood flow and exacerbates silica-induced lung inflammation in the F344 rat. Allegheny-Erie Society of Toxicology, 2020.

Thompson J.A., Krajnak, K., Johnston, R.A., McKinney, W. and **Fedan**, J.S.: Western diet alters blood flow and exacerbates silica-induced lung inflammation in the F344 rat. Society of Toxicology Annual Meeting, 2021.

Thompson, J.A, Krajnak, K., Johnston, R.A., Kashon, M., McKinney, M. and **Fedan**, J.S.: Western diet alters blood flow and exacerbates silica-induced lung inflammation in the F344 rat. CDC Laboratory Science Symposium, 2021.

Thompson, J.A., Kashon, M.L., McKinney, W., **Fedan**, J.S. Interactions of a high-fat Western diet and crystalline silica inhalation on airway epithelial ion transport and airway reactivity. Experimental Biology Annual Meeting, 2022.

Fedan, J.S.: Effects of inhaled tier-2 diesel engine exhaust on in vivo and in vitro ventilatory and non-ventilatory properties of rat lung: A hazard identification study. 7th Annual CDC Laboratory Science Symposium, 2023. Oral presentation.

Thompson, J.A., Johnston, R.A., Price, R.E., Hubbs, A.F., Kashon1, M.L., McKinney, W., and **Fedan**, J.S.: High-fat Western diet consumption exacerbates silica-induced pulmonary inflammation and fibrosis but not airway smooth muscle reactivity. 7th Annual CDC Laboratory Science Symposium, 2023.

November 1, 2000

CURRICULUM VITAE

Gunter N. Franz

PRESENT POSITION: Associate Professor
Department of Physiology
West Virginia University School of Medicine
Robert C. Byrd Health Sciences Center - North, P.O. Box 9229
Morgantown, West Virginia 26506-9229

TELEPHONE: 304-293-1516, 304-293-4991

E-MAIL: gfranz@www.hsc.wvu.edu

PERSONAL DATA:

BORN: March 13, 1935, Backa Palanka, Yugoslavia

CITIZENSHIP: U.S.A.

FAMILY: Married, 3 Children

HOME ADDRESS: 913 Hawthorne Avenue
Morgantown, West Virginia 26506
304-599-0768,
gnfranz@email.msn.com,

EDUCATION: Diplom-Ingenieur (equiv. to M.S.) in Electrical Engineering, Technische Hochschule (Technical University) Karlsruhe, Germany, 1959
Ph.D. in Physiology and Biophysics, University of Washington, Seattle, WA, 1968.

AWARDS AND FELLOWSHIPS:
Scheffel Prize (Germany) 1954
Fellowship from Studienstiftung des Deutschen Volkes (Scholarship Foundation of the German People) 1955-1958
Fellowship from Cusanuswerk (Cusanus Foundation, Germany), 1958-1959
NATO Research Fellowship for study at the University of Washington (Seattle) 1960-1962.
Outstanding Teacher Award, West Virginia University, 1975-1976.
School of Medicine MacLachlan teaching award, 1996

SOCIETIES: American Physiological Society
Catholic Academy of Sciences of the United States

POSITIONS: Engineering Trainee, Brown, Boveri & Cie, Mannheim, Germany 1954.
Engineering Trainee, Siemens and Halske, Mannheim, Germany, 1956.
Engineering Trainee, Siemens and Halske, Karlsruhe, Germany 1957.
Laboratory Assistant, Institute of High Frequency Techniques,
Technical University of Karlsruhe, Germany, 1959.
Laboratory Assistant, Institute of Information Transmission and Processing,
Technical University of Karlsruhe, Germany, 1959.

Development Engineer, Siemens and Halske, Karlsruhe, Germany, 1960.
Research Assistant, Department of Physiology and Biophysics,
University of Washington, Seattle, 1963-1968.
Assistant Professor, Department of Physiology and Biophysics,
West Virginia University Medical Center, Morgantown, WV, 1968-1972.
Associate Professor, Dept. of Physiology and Biophysics,
West Virginia University Medical Center, Morgantown, WV, 1972 - present.

TEACHING:

Human Function (cell physiology, cardiac electrophysiology) at West Virginia University
Medical Physiology (lectures, laboratories, and conference sections on cell physiology, circulation, respiration, renal and acid-base physiology) at University of Washington and West Virginia University.
Graduate Physiology (cell, circulation) at West Virginia University
Advanced Physiology (cell, circulation) at West Virginia University
Dental Physiology (circulation, renal physiology) at West Virginia University
Elementary Physiology (circulation) at West Virginia University
Physiological Methods (compartmental analysis, principles of modeling) at West Virginia University
Biophysical Analysis (mathematics, generalized network modeling, transfer function and frequency response techniques) at West Virginia University
Systems Biophysics (biological feedback/control systems) at West Virginia University
Dissertation and M.S. thesis supervision, tutorials at West Virginia University

PAST RESEARCH:

Quantitative physiology of carotid sinus baroreceptors and crayfish stretch receptors
Blood pressure control
Quantitation of electrical activity from nerve fiber bundles
Mechanoreceptor biophysics
Effects of coal conversion by-products on the neuromuscular system
Newborn and infant heart rate variability as an indicator of learning ability
Theory and methods of voltage clamping of whole cell and patch preparations
Theory of immitance transducers

CURRENT RESEARCH:

Mathematical modeling of lung mechanics

GRANT SUPPORT:

The preceding research was carried out with
(1) institutional (WVU) support and with grants from the West Virginia Heart Assoc., the National Science Foundation (1971-74), and the Department of Energy (1977-1980).

(2) NIH grant, "A genetic-biochemical analysis of spirochete motility," 1981-84, $86,222 (Nyles Charon, Microbiology, P.I.; G.N. Franz, co-investigator).

ALOSH-funded research on lung mechanics with David G. Frazer, P.I.

CONFERENCES, SYMPOSIA, OTHER PROFESSIONAL ACTIVITIES:

Invited papers:

Conference on "Physical Bases of Circulatory Transport: Regulation and Exchange", University of Colorado Medical Center, September 1966, with the Collaboration of the Committee on Shock, Div. of Medical Sciences, National Academy of Sciences-National Research Council. (Published as: A.M. Scher, G.N. Franz, C.S. Ito and A.C. Young, "Studies on the carotid sinus reflex", in Physical Bases of Circulatory Transport: Regulation and Exchange, E.B. Reeve and A.C. Guyton, Eds., W.B. Saunders, Philadelphia, 1967).

Conference on "Rein Control, or Unidirectional Rate Sensitivity, a Fundamental Dynamic and Organizing Function in Biology" held by the N.Y. Academy of Sciences on April 13 and 14, 1967. (Published as: G.N. Franz, "Nonlinear rate sensitivity of the carotid sinus reflex as a consequence of static and dynamic nonlinearities in baroreceptor behavior", Ann. N.Y. Acad. Sci. 156: 881-824, 1969.)

Chairman of Special Session No. 64 "Blood Pressure Control" organized by the American Physiological Society for FASEB Meetings, Atlantic City, April 1973. Introductory 30 min. lecture published under the title "On Blood Pressure Control", The Physiologist, 17(1): 73-86, 1974.

Site Visits and Grant Reviews:

Member of site visit team December 8-10, 1971 to University of Pennsylvania for NICHD.
Grant reviews for NIH and NSF
Grant review for United States - Israel Binational Science Foundation
Grant reviews for West Virginia University School of Medicine
Grant reviews for West Virginia University Senate Research Committee

Reviews of Manuscripts:

American Journal of Physiology
American Journal of Physiology: Heart and Circulatory Physiology
Journal of Applied Physiology
Circulation Research
Journal of Experimental Pharmacology and Therapeutics
Journal of Experimental Child Psychology
American Journal of Physiology: Heart and Circulatory Physiology
Journal of Electrophysiological Techniques
Board of reviewers of Journal of Electrophysiological Techniques

Activities in Associations and Societies:

American Physiological Society: Session Chairman ("Blood Pressure Control"), FASEB Meetings, Atlantic City, April 1973.
American Heart Association: Member of the Board of Directors of the West Virginia Affiliate 1977/78; Member of the Research Committee (WV Affiliate) 1977/78, 1978/79; Monongalia County Unit: Vice President 1975/76; President 1976/77, 1977/78; Educational Program Chairman 1976/77, 1977/78; Member of the Advisory Board 1977/78, 1978/79, 1979/80

COMMITTEE ASSIGNMENTS AND ACADEMIC SERVICE:

School of Medicine: Academic Standards Committee 1977/78, 1978/79, 1979/80, 1980/81, 1981/82 (Chairman), 1982/83 (Chairman), 1983/84 (Chairman), 1984/85 (Chairman), 1985/86 (Chairman), 1986/87 (Chairman), 1987/88 (Chairman), 1988/89 (Chairman), 1989/90 (Chairman), 1990/91 (Chairman), 1991/92 (Chairman), 1992/93 (Chairman), 1993/94 (Chairman), 1994/95 (Chairman), 1995/96 (Chairman), 1996/97 (Chairman), 1997/98 (Chairman), 1998/99 (Chairman), 1999/00 (Chairman), **2000/01 (Chairman)**

Educational Outcomes Assessment Subcommittee of the School of Medicine Curriculum Committee 1999
Educational Program (Curriculum) Committee 1971/72 to 1973/74
Dean Search Committee 1969/70
General Research Support Grant Committee 1970/71, 1971/72, 1972/73, 1973/74

Student Research Convocation Committee 1975/76, 1976/77, 1977/78
Chairman of Student Research Convocation Judging Committee 1978-1981
Liaison to Student Body Committee 1975/76, 1976/77
Evaluation Committee for Summer Research Fellowships, 1981
Ad Hoc Committee to draft the Policy on Academic Standards Governing the M.D. Program 1985/86, 1986/87
Ad Hoc Committee to draft the Student Code of Professional and Academic Integrity for the M.D. Degree Program 1987
M.D./Ph.D. Medical Scientist Training Oversight Committee 1989/90, 1990/91, 1991/92, 1992/93, 1993/94, 1994/95
School of Medicine Graduate Council 1989/90, 1990/91, 1991/92, 1992/93, 1993/94, 1994/95
Ad Hoc Committee for the Academic Review of the Department of Community Medicine, 1989/90 (Chairman)
Subcommittee on Students for LCME Review, 1992/93 (Chairman)
Ad Hoc Committee for Orientation of Health Science Center Administrators, 1993/94
Ad Hoc Committee for the Academic Review of the Department of Pharmacology, 1994/95 (Chairman)
Facilitator for *ad hoc* committees handling academic dishonesty cases in the Health Sciences Center, 1995
Ad Hoc committee to develop an Academic and Professional Integrity Policy for all Health Sciences Center degree programs, 1995/96 (Chairman)
Ad Hoc committee to review the June 1995 USMLE Step examination, 1995
Ad Hoc subcommittee on student evaluation for the new curriculum, 1996/97

University Senate:

Elected member of the University Senate 1975-77, 1978-81, 1990-93
Senate Research Committee 1975/1976, 1976/77 (Chairman)
Senate Graduate Studies Committee, 1983-86
Senate Ad Hoc Committee to Review the Procedures of the Doctoral Program Evaluation, 1984/85
Senate Ad Hoc Committee to Review the Roles of the Senate Graduate Studies Committee and the Graduate Council, 1984/85

Graduate School:

Special Committee to Study the Foreign Language Requirements for the Ph.D. Degree 1971/72

Departmental Committees:

Graduate Studies Committee 1970/71, 1971/72, 1974/75, 1975/76, 1976/77, 1977/78
Recruitment Tours Committee 1974/75 and 1975/76
Faculty Recruitment Committee 1971/72, 1980/81
Computer Committee, 1980/81 (Chairman)
Promotion and Tenure Committee, 1981/82, 1982/83, 1983/84, 1984/85, 1985/86, 1986/87, 1987/88, 1988/89, 1989/90, 1990/91, 1991/92, 1992/93, 1993/94, 1994/95, 1995/96, 1996/97

Research Seminar, 1986/87, 1987/88, 1988/89, 1989/90, 1990/91, 1991/92

Other:

Provost's Committee on Human Biology 1969
Committee to Study Establishment of a Computer Sciences Curriculum 1968/69
Administrative Board of Victorian Poetry 1976-1977 (ex. officio)
Search Committee for Director of Central Data and Information Services 1982/83
Appeal Panel for the WVU Institutional Review Board for the Protection of Human Subjects, 1985
WVU Institutional Hearing Committee (Chairman), 1987/88

SPECIAL ASSIGNMENT FROM THE DEAN OF THE SCHOOL OF MEDICINE:

Program of Supportive Intervention for Medical Students in Academic Difficulty (minimum of 20% of time) **since October 15, 1990**

Partial and temporary assumption of duties of the Associate Dean for Student and Curricular Affairs during the Spring Semester 1995

TEACHING ASSIGNMENTS

2000-2001:

1st Semester

Human Function : 96 medical students
Cell (in block 1) and circulation (in block 2)
I completely revised the course handouts and revised a large number of overheads in both sections
Physiology 350 - Graduate Physiology: 9 students
cell and circulation sections

Physiology 342 **(Coordinator)** - Methods for Graduate Students: 3 students

Problem-based Learning section for medical students: 8 students

Small-group sessions (physiology): 12 students

2nd Semester:

Physiology 141 **(Coordinator)** - Elementary Physiology

Problem-based Learning section for medical students: 8 students

1999-2000:

1st Semester

Human Function : 95 medical students
Cell (in block 1) and circulation (in block 2)
I made substantial revisions, replacing nearly all overheads (about 85-90 new ones).
Physiology 350 - Graduate Physiology: 6 students
cell and circulation sections

Physiology 343 - Dental Physiology: approx. 35 dental students
body fluids/ renal physiology section

Physiology 342 **(Coordinator)** - Methods for Graduate Students: 4 students

Problem-based Learning section for medical students: 8 students

Small-group sessions (physiology): 12 students

2nd Semester:

Physiology 141 (**Coordinator**) - Elementary Physiology: 150 students

Problem-based Learning section for medical students: 8 students

1998-1999:

1st Semester

Human Function (**new**): 91 medical students
Cell (in block 1) and circulation (in block 2)

Physiology 350 - Graduate Physiology: 13 students
cell and circulation sections

Physiology 343 - Dental Physiology: approx. 35 dental students
body fluids/ renal physiology section

Physiology 342 (Coordinator) - Methods for Graduate Students: 4 students

Problem-based Learning section for medical students: 8 students

Small-group sessions (physiology): 10 students

2nd Semester:

Physiology 141 (**new, Coordinator**) - Elementary Physiology
I developed a entirely new set of lectures covering the cell and circulation modules of the course.

Problem-based Learning section for medical students: 8 students

1997-1998:

1st Semester

Physiology 344 - Medical Physiology (**revised**): 90 medical students, 2 graduate students
cell and circulation sections, autonomic nervous system

Physiology 343 - Dental Physiology (**new**): approx. 35 dental students
body fluids/ renal physiology section

Problem-based Learning section for medical students: 8 students

Physiology 350 - Graduate Physiology (**new**): 11 students
cell section, circulation section, autonomic nervous system

Physiology 342 (Coordinator) - Methods for Graduate Students: 2 students

2nd Semester

Physiology 351 (Coordinator) - Graduate Physiology: approx. 10 students

Physiology 342 (Coordinator) - Methods for Graduate Students: 2 students

Problem-based Learning section for medical students: 8 students

1996-1997:

1st Semester

Physiology 344 - Medical Physiology (**revised**): 95 medical students
cell and circulation sections

Physiology 343 - Dental Physiology (**new**): 35 dental students
body fluids/ renal physiology section

Problem-based Learning section for medical students: 8 students

Physiology 350 - Graduate Physiology (**new**): 10 students
cell section

For the Fall Semester 1997 I developed a new set of renal physiology lectures for the dental physiology course.

2nd Semester

Physiology 351 (Coordinator) - Graduate Physiology: 10 students

Problem-based Learning section for medical students: 8 students

1995-1996:

1st Semester

Physiology 344 - Medical Physiology (**revised**): 95 medical students
cell and circulation sections

Problem-based Learning section for medical students (**new**): 8 students

Physiology 350 - Graduate Physiology (**new**): 14 students
cell and circulatory sections

2nd Semester

Physiology 491 - Advanced Physiology: cell section

Problem-based Learning section for medical students (**new**): 8 students

1994-1995:

1st Semester

Physiology 344 - Medical Physiology: 97 medical students and 9 graduate students;
cell and circulation sections

2nd Semester

Physiology 491 - Advanced Physiology: cell section

For the Fall Semester 1994 I made major revisions in my cell physiology lectures.

1993-1994:

1st Semester

Physiology 344 - Medical Physiology: 97 medical students and 8 graduate students; cell and circulation sections

2nd Semester

Physiology 491 - Advanced Physiology: cell section
Physiology 491 - Advanced Physiology: circulation section

1992-1993:

1st Semester

Physiology 344 - Medical Physiology: 94 medical students and 9 graduate students; cell and circulation sections

2nd Semester

Physiology 491 - Advanced Physiology: cell section
Physiology 491 - Advanced Physiology: circulation section

1991-1992:

1st Semester

Physiology 344 - Medical Physiology: 87 medical students and 9 graduate students; cell and circulation sections

2nd Semester

Physiology 491 - Advanced Physiology: cell section
Physiology 491 - Advanced Physiology: circulation section

For the Fall Semester 1991 I completely revised my lectures on cardiac electrophysiology and the ECG.

1990-1991:

1st Semester

Physiology 344 - Medical Physiology: 89 medical students and 6 graduate students; cell and circulation sections

2nd Semester

Physiology 491 - Advanced Physiology: cell section
Physiology 491 - Advanced Physiology: circulation section

1989-1990:

1st Semester

Physiology 344 - Medical Physiology: 94 students; cell and circulation sections
Physiology 350 - Graduate Physiology: 5 students; cell and circulation sections

2nd Semester

Physiology 491 - Advanced Physiology: cell section
Physiology 491 - Advanced Physiology: circulation section

1988-1989:

1st Semester

Physiology 343 - Dental Physiology: 32 students; circulation section
Physiology 344 - Medical Physiology: 85 students; cell and circulation sections
Physiology 350 - Graduate Physiology: 10 students; cell and circulation sections

2nd Semester

Physiology 491 - Advanced Physiology; circulation section

For the Fall Semester 1988 I completely revised my lectures in the cell physiology section of Physiol. 344/350. Students traditionally have great difficulty with the material of this section because they generally lack an adequate background. The goal of the revision was to make the material less intimidating and to guide the students' study efforts. The revision encompassed both content and manner of presentation. The material was restructured into "short" topics covered in 36 individual handouts. In addition, students were given four work-sets containing a total of 107 topics and questions. The new approach was received well by students. From the comments of students who had taken the course before I conclude that this approach was quite successful.

1987-1988:

1st Semester

Physiology 343 - Dental Physiology: 34 students; circulation section
Physiology 344 - Medical Physiology: 92 students; cell and circulation sections

2nd Semester

Physiology 491 - Advanced Physiology: circulation section

1986-1987:

1st Semester

Physiology 343 - Dental Physiology: 35 students; circulation section
Physiology 344 - Medical Physiology: 90 students; cell and circulation sections
Physiology 350 - Graduate Physiology: 8 students; cell and circulation sections

2nd Semester

Physiology 491 - Advanced Physiology; circulation section

1985-1986:

1st Semester

Physiology 343 - Dental Physiology: 30 students; circulation section
Physiology 344 - Medical Physiology: 93 students; cell and circulation sections
Physiology 350 - Graduate Physiology: 7 students; cell and circulation sections

1984-1985:

1st Semester

Physiology 343 - Dental Physiology: 48 students; circulation section
Physiology 344 - Medical Physiology: 94 students; cell and circulation sections
Physiology 350 - Graduate Physiology: 11 students; cell and circulation sections

2nd Semester

Physiology 141 - Elementary Physiology: approximately 175 students; circulation section

1983-1984:

1st Semester

Physiology 343 - Dental Physiology: 49 students; circulation section
Physiology 344 - Medical Physiology: 94 students; Course Coordinator; cell section
Physiology 350 - Graduate Physiology: 7 students; Course Coordinator; cell section

2nd Semester

Physiology 444 - Graduate Seminar; Coordinator

1982-1983:

1st Semester

Physiology 343 - Dental Physiology: 49 students; circulation section
Physiology 344 - Medical Physiology: 89 students; Course Coordinator; cell section
Physiology 350 - Graduate Physiology: 6 students; Course Coordinator; cell section

2nd Semester (Sabbatical)

1981-1982:

1st Semester

Physiology 343 - Dental Physiology: 67 students; circulation section
Physiology 344 - Medical Physiology: 92 students; Course Coordinator; cell physiology
Physiology 350 - Graduate Physiology: 12 students; Course Coordinator; cell physiology

2nd Semester

Physiology 444 - Graduate Seminar; Coordinator

1980-1981:

1st Semester

Physiology 343 - Dental Physiology: 68 students; circulation
Physiology 344 - Medical Physiology: 92 students; Course Coordinator; cell physiology

2nd Semester

Physiology 491 - Advanced Physiology; circulation section

1979-1980:

1st Semester

Physiology 344 - Medical Physiology: 105 students; Course Coordinator; cell/circulation
Physiology 343 - Dental Physiology: 65 students; circulation section

1978-1979:

1st Semester

Physiology 344 - Medical Physiology: 105 students; Course Coordinator; circulation
Physiology 343 - Dental Physiology: 65 students; circulation section

2nd Semester

Physiology 444 - Graduate Seminar: 10 students; Coordinator
Physiology 491 - Advanced Physiology: 6 students; circulation section

1977-1978:

1st Semester

Physiology 343 - Dental Physiology: 68 students; circulation section
Physiology 442 - Physiological Methods: 3 students; module on principles of modeling

2nd Semester

Physiology 345 - Medical Physiology: 120 students; Course Coordinator; circulation
Physiology 441 - Physiological Methods: 10 students; module on compartmental analysis

1976-1977:

1st Semester

Physiology 442 - Physiological Methods: 8 students; module on principles of modeling
Physiology 444 - Seminar: 3 students

2nd Semester

Physiology 345 - Medical Physiology: 102 students; Course Coordinator; circulation
Physiology 441 - Physiological Methods: 8 students, Module on compartmental analysis

1975-1976:

1st Semester

Physiology 444 - Seminar: 3 students
Physiology 499 - Colloquium: 14 students

2nd Semester

Physiology 345 - Medical Physiology: 105 students; respiration section
Physiology 441 - Physiological Methods: 8 students, module on compartmental analysis

PUBLICATIONS:

A.M. Scher, C.S. Ito, and G.N. Franz. Studies of the baroreceptor reflexes in anesthetized and intact animals. In: Abstracts, Physical Bases of Circulatory Transport, Regulation and Exchange. Aspen, Colorado, 1966. (Abstract)

A.M. Scher, G.N. Franz, C.S. Ito, and A.C. Young. Studies on the Carotid Sinus Reflex. In: Physical Bases of Circulatory Transport. E.B. Reeve and A.C. Guyton, eds. Philadelphia: W.B. Saunders Co., 1967.

G.N. Franz and F.A. Spelman. An Interval-to-Frequency Converter for Neurophysiological Use. Electroenceph. Clin. Neurophysiol. 25: 582-584, 1968.

G.N. Franz. Experimental and Theoretical Studies of the Properties of Baroreceptors. Thesis, University of Washington, Seattle, 1968. Dissertation Abstracts B29: 3889-B, 1969.

G.N. Franz. Nonlinear Rate Sensitivity of the Carotid Sinus Reflex as a Consequence of Static and Dynamic Nonlinearities in Baroreceptor Behavior. Ann. N.Y. Acad. Sci. 156: 811-824, 1969.

M.F. Wilson, I. Ninomiya, W.V. Judy, and G.N. Franz. Interaction of Posterior Hypothalamic Stimulation and Baroreceptor Reflexes on Renal Nerve Activity. The Physiologist 12: 396, 1969 (Abstract).

D.D. Upthegrove, G.N. Franz, and K.C. Weber. Mean Pulsatile Optical Density Changes in Bone. The Physiologist 13: 326, 1970 (Abstract).

G.N. Franz, A.M. Scher, and C.S. Ito. Small Signal Response of Rabbit Baroreceptors. Biophysical Soc. Abstracts 11: 42a, 1971. (Abstract)

G.N. Franz, A.M. Scher, and C.S. Ito. Small Signal Characteristics of Carotid Sinus Baroreceptors of Rabbits. J. Appl. Physiol. 30: 527-535, 1971.

G.N. Franz and D.G. Frazer. A Model for the Dynamic Response of Slowly Adapting Mechanoreceptors. 25th Int. Congress of Physiol. Sciences, Munich, July 25-31, 1971 Proc. Int. Union Physiol. Sci. 9: 185, 1971. (Abstract)

M.F. Wilson, I. Ninomiya, G.N. Franz, and W.V. Judy. Hypothalamic Stimulation and Baroreceptor Reflex Interaction on Renal Nerve Activity. Am. J. Physiol. 221(6): 1768-1773, 1971.

H.G. Minns and G.N. Franz. A Low-Drift Transducer for Small Forces. J. Appl. Physiol. 33(4): 529-531, 1972.

H.G. Minns and G.N. Franz. Small Signal Response of Slowly Adapting Stretch Receptors of Crayfish. Biophysical Soc. Abstracts 13: 238a, 1973. (Abstract)

D.D. Upthegrove, G.N. Franz, and K.C. Weber. Simultaneous Measurement of Steady State and Pulsatile Optical Density Changes. Med. and Biol. Eng. 11(6): 780-784, 1973.

G.N. Franz. Component Mechanisms of Blood Pressure Control. 30-minute Introductory lecture at session No. 64 "Blood Pressure Control", FASEB Meetings, Atlantic City, April 1973. published as: "On Blood Pressure Control", The Physiologist, 17(1): 73-86, 1974.

G.N. Franz, H.G. Minns, D.G. Frazer and C. Roby. Are Stretch Receptors Force or Length Transducers? Fed. Proc. 33(3): 415, 1974 (Abstract).

W.K. Franz, P.A. Self, and G.N. Franz. Individual Differences and Auditory Conditioning in Neonates. Symposium on Individual Differences in Neonatal Behavior, Fourth Biennial Southeastern Conference in Human Development, Nashville, TN, April 14-17, 1976. Abstract also published under No. ED 125 780 in Resources of Education (abstract journal of Educational Resources Information Center - ERIG), November 1976.
W.K. Franz, P.A. Self, and G.N. Franz. Auditory Temporal Conditioning in Neonates, Fourth Biennial Southeastern Conference in Human Development, Nashville, TN, April 14-17, 1976.

G.N. Franz, and D.G. Frazer. An Improved Dynamic Model for Slowly Adapting Stretch Receptors. Biophysical. J. 17: 194a, 1977. (Abstract)

B. Bolouri and G.N. Franz. Quantitation of Multifiber Activity in Nerve Trunks. Biomed. Sci. Instr. 15: 59-64, 1979.

D.G. Frazer and G.N. Franz. A Model of Static Lung Hysteresis. (APS Fall Meeting Abstracts) The Physiologist 22: 40, 1979.

G.N. Franz and R.J. Millecchia. Effects of Coal Combustion and Gasification Process Contaminants on the Neuromuscular System. Published by the Department of Energy (Fossil Energy) as DOE Report DOE/METC/8089-TI, Distrib. Categ. MC-901, 1980.

D.G. Frazer, C.E. Turick, J.J. Morgan, G.N. Franz, and E.L. Petsonk. Lung Trapped Gas Volume Changes During an Inflation-Deflation Cycle. Am. Rev. Resp. Disease 123(4, Part 2): 201, 1981. (Abstract)

D.G. Frazer and G.N. Franz. Trapped Gas and Lung Hysteresis. Respir. Physiol. 46: 237-246, 1981.

G.N. Franz and D.G. Frazer. Comparative Analysis of Several Double-and Triple-Gap Voltage Clamp Circuits. Biophysical. J. 37(2, part 2): 73a, 1982. (Abstract)

P.B. Brown, G.N. Franz, and H. Moraff. Electronics for the Modern Scientist. American Elsevier Publishing Co., New York, 1982.

D.G. Frazer, J.J. Morgan, G.N. Franz, and K.C. Weber. The Effect of Temperature on Gas Trapping in Excised Lungs. Respir. Physiol. 50: 13-22, 1982.

D.G. Frazer, C.E. Turick, J.J. Morgan, G.N. Franz, and E.L. Petsonk. Pressure in the Trapped Gas Phase During Lung Inflation. Physiologist 25(4): 265, 1982 (Abstract).
G.N. Franz and D.G. Frazer. Analysis of Several Current Feedback Methods for Compensation of Membrane Series Resistance (R_S) and Cytoplasmic Access Resistance (R_{DE}) in Gap Voltage Clamps. Biophysical J. 41(2 pt. 2): 399a, 1983,
(Abstract)

N. Charon, G. Daughtry, R. McCuskey, and G.N. Franz. A Microcinematographic Analysis of Tethered Leptospira illini. Abstracts of the 83rd Annual Mtg. of the Am. Soc. Microbiol. p. 151 (#I71), 1983 (Abstract).

J.J. Morgan, D.G. Frazer and G.N. Franz. Regional Differences in Gas Trapping (Airway Closure) between Apex and Base of Excised Rat Lungs. Respir. Physiol. 55: 309-316, 1984

G.N. Franz, R. Millecchia, and D.G. Frazer. The Effects of Parasitic Circuit Elements and Amplifier Characteristics on Stability and Fidelity of Gap Voltage Clamps. Biophysical. J. 45(2, pt. 2): 59a, 1984 (Abstract)

R. Millecchia and G.N. Franz. Analysis of a Canonical Set of Patch Clamp Configurations with Compensation of Pipette Resistance (R_p) and Feedback Resistance (R_f). Biophysical J. 45(2, pt.)2): 58a, 1984 (Abstract).

N.W. Charon, G.R. Daughtry, R.S. McCuskey and G.N. Franz. A Microcinematographic Analysis of Tethered Leptospira Illini. J. Bacteriol. 160(3): 1067-1073, 1984.

G.N. Franz and R. Millecchia. Proposal for Bootstrap Circuit for Loose Patch Clamps. J. Electrophysiol. 12: 1-14, 1985.

D.G. Frazer and G.N. Franz. Evidence of Sequential Opening and Closing of Lung Units During Inflation - Deflation of Excised Rat Lungs. Respir. Physiol. 61: 277-288, 1985.

G.N. Franz and R. Millecchia. Derivation of Several Voltage and Current Clamp Circuits from a Fundamental Clamp Circuit. Biophysical J. 49(2, pt. 2): 231a, 1986 (Abstract).

R. Millecchia and G.N. Franz. Improved Methods of Series Resistance Compensation for Voltage Clamps. Biophysical J. 49(2, pt. 2): 374a, 1986 (Abstract).

G.N. Franz and R.J. Millecchia. Noise Analysis of Three Fundamental Voltage Clamp Circuits. Biophysical J. 51(2,pt.2):70a, 1987 (Abstract).

G.N. Franz. Criteria for the Compensation of Parasitic Immittances (Series, Shunt, and Summing Node) for a set of Three Fundamental Voltage Clamp Circuits. Biophysical J. 53(2,pt.2):153a, 1988 (Abstract).

G.N. Franz and D.G. Frazer. Mathematical Modeling of Gas Trapping and Hysteresis during Inflation/Deflation Cycles of Excised Lungs. Biophysical J. 55(2,pt.2):576a, 1989

D.G. Frazer, A. Giza, C. Stanley, J.L. Frazer, G.N. Franz, and E.L. Petsonk. Surface Forces and the Alveolar Pores of Kohn. FASEB J. 3(3): A547, 1989 (Abstract).

G.N. Franz and D.G. Frazer. Mathematical Modeling of Hysteresis during Sinusoidal Pressure Perturbations Superimposed on Slow Inflation/Deflation Cycles in Excised Lungs. FASEB J. 4(3): A291, part I, 1990 (Abstract).

G.N. Franz and D.G. Frazer. Mathematical Modeling of End-expiratory Pressure Dependent Hysteresis in Excised Lungs. FASEB J. 7(3): A10, part I, 1993 (Abstract)

G.N. Franz and D.G. Frazer. Macroscopic Hysteresis Arising from a Population of Elementary Units with "On/Off" States. Example: Lung Pressure-Volume Hysteresis. Biophys. J. 66(2, pt. 2): A390, 1994 (Abstract)

Winchi Cheng, D.S. DeLong, G.N. Franz, E.L. Petsonk and D.G. Frazer. Contribution of Opening and Closing of Lung Units to Lung Hysteresis. Respiration Physiology, 102:205-215, 1995.

D.G. Frazer, A.A. Afshari, W.T. Goldsmith and G.N. Franz. Analysis of Lung Expansion Based on P_L-V_L Curves and Models of Lung Unit Recruitment. FASEB J. 10(3):A806, 1996 (Abstract)

G.N. Franz, Winchi Cheng and D.G. Frazer. Mathematical Modeling od Static Hysteresis during Inflation/Deflation Cycles in Normal and TWEEN-Rinsed Excised Rat Lungs. FASEB J. 10(3):A359, 1996 (Abstract)

G.N. Franz and D.G. Frazer. Cumulative Gas Trapping in Association with Inflation/Deflation Cycles in Excised Rat Lungs. FASEB J. 11(3): A348, 1997 (Abstract)

W. Cheng, D.S. DeLong, G.N. Franz, E.L. Petsonk and D.G. Frazer. Discontinous Lung Sounds and Hysteresis in Control and Tween 20-rinsed Excised Rat Lungs. Respir. Physiol. 117: 131-140, 1999

J.J. Morgan, G.N. Franz, and D.G. Frazer. A Comparison of Gas Trapping in Excised and *In Vivo* Lungs of the Rat. (Second draft)

D.G. Frazer, T.A. JOnes, C.B. White, G.N. Franzand M.J. Reasor. Effects of Chlorphentermine Treatment on Mechanical Properties of Excised Rat Lungs (Fourth draft)

D.G. Frazer, C. Chandler, D.S. DeLong, A.Giza, J.L. Frazer, G.N. Franz, and E.L. Petsonk. Analysis of the Formation of Fluid Locks (Menisci) in Pulmonary Airways.
In preparation for Respiration Physiology. (Third draft)

L. Brancazio, G.N. Franz, E.L. Petsonk, and D.G. Frazer. Lung Area-Volume Models in Relationship to the Recruitment-Derecruitment of Individual Lung Units. In preparation for Respiration Physiology or Biophysical Journal. (Second draft)

G. N. Franz And D.G. Frazer. A mathematical model explaining macroscopic hysteresis and other nonlinear phenomena of lung mechanics. (First draft)

Rec'd 10/28/11

CURRICULUM VITAE

NAME: David George Frazer, Jr.

PRESENT POSITION AND ADDRESS:

Lead Physiologist / Team Leader
Director of NIOSH Animal Exposure Facility
Developmental Engineering and Research Team Leader
Pathology and Physiology Research Branch
Health Effects Laboratory Division
National Institute for Occupational Safety and Health
Morgantown, WV 26505
and
Adjunct Professor of Physiology and Biophysics West Virginia University, Morgantown, WV 26506
and
Adjunct Professor of Electrical Engineering West Virginia University, Morgantown, WV 26506,

BIOGRAPHICAL: Born February 25, 1941, East Brady, PA
Married, 2 Children
Home Address -1025 Levels Road Fairmont, WV 26554

EDUCATION:

1959-1962	Electrical Engineering, B.S., Penn State University University Park, PA
1963-1964	Electrical Engineering, M.S., Penn State University University Park, PA
1965-1970	Electrical Engineering, Ph.D., Penn State University University Park, PA
1970-1974	Physiology and Biophysics, Ph.D., West Virginia University Morgantown, WV

PROFESSIONAL AND TEACHING EXPERIENCE:

1963-1964	Teaching and Research AssistantElectrical Engineering Dept Penn State University University Park, PA
1964-1965	Test Set Design Engineer Western Electric Co. Allentown, PA
1966-1967	Teaching and Research Assistant Electrical Engineering Dept.

11/12-1000

Penn State University
University Park, PA

1967-1970 Air Pollution Trainee (National Institute of Health)
Electrical Engineering Dept. &
The Center for Air Environment Studies
Penn State University, University Park, PA

1970-1972 Physiologist
Appalachian Laboratory for
Occupational Respiratory
Diseases
Morgantown, WV

1972-1973 National Institute of Health (Post Doc Special Fellow)

Appalachian Laboratory for
Occupational Respiratory Diseases
Morgantown, WV

1974 Special Fellow
Appalachian Laboratory for
Occupational Respiratory Diseases
Morgantown, WV
and
Physiology and Biophysics Dept.
West Virginia University
Morgantown, WV

1974-1979 Assistant Professor Physiology and Biophysics Dept.
West Virginia University
Morgantown, WV

1976- Present Research Physiologist
Appalachian Laboratory for
Occupational Safety and Health
Morgantown, WV

1979- Present Associate Professor (Adjunct)
Physiology and Biophysics Dept.
West Virginia University
Morgantown, WV

1985- 2003 Professor (Adjunct)
Aerospace and Mechanical Engineering Dept.
West Virginia University
Morgantown, WV

2000 -Present Professor (Adjunct)
Electrical and Computer Engineering.
West Virginia University
Morgantown, WV

1985-Present Director of NIOSH Animal Exposure Facility

COMMITTEE RESPONSIBILITIES:

HELD Promotions Advisory Committee
2000-2007
HELD Branch Chief Selection committee
2002, 2005

Physiology and Biophysics Department

1974-1976,1987-89	Graduate Studies Committee
1976-1977	Departmental Recruitment Tours
1977-1978	Visiting Speaker Committee

School of Medicine

1976-1977	Visiting Speaker Committee

Student Supervisory Committees

Bernard McCarty - M.S., (1975) Physiology & Biophysics
Pete Stengel - M.S., (1977) Physiology & Biophysics
Joe Donnly - M.Ed., (1977) Physical Education
Bruce Olenchuck - M.S., (1978) Electrical Engineering
Dave Kukulinsky - M.S., (1978) Physiology & Biophysics
Bahman Khoshnood - M.S., (1978) Electrical Engineering
Robert Yezierski - Ph.D., (1979) Physiology & Biophysics
Herman Koerber - M.S., (1980) Physiology and Biophysics
Charles Stanley - Ph.D., (1981) Mechanical Engineering
Herman Koerber, Ph.D., (1981) Physiology & Biophysics
Thomas Ebeling, M.S., (1983) Electrical Engineering
James Morgan - Ph.D., (1985) Physiology & biophysics (Committee Chairperson)
Thomas Ebeling, M.S., (1983) Electrical Engineering

Louis Smith, M.S., (1985) Electrical Engineering
Winchi Cheng, Ph.D. (1987) Physiology (Committee Chairperson)
Mark Moore, M.S., (1988) Physiology
Terry Jones, Ph.D., (1989) Physiology (Committee Chairperson)
Ali Afshari, M.S. (1989) Mechanical Engineering
Defu Lu, Ph.D. (1990) Mechanical Engineering
Jihee Kang, Ph.D. (1990) Physiology
Richard Reist, Ph.D., (1992) Physiology
Cheryl Chandler, Ph.D. (1992) Electrical Engineering
Carla Saville, M.S. (1993) Mechanical Engineering
Tracy Warner, Ph.D. (1996) Pharmacology
Michael Kean, M.S. (1996) Electrical Engineering
Ali Afshari, Ph.D. (1996) Industrial Engineering
Brian Stolarik, M. S. (2001) Electrical Engineering (Committee Co-Chairperson)
Patti Ziedler, Ph.D. (2003) Physiology and Pharmacology
Jeff R. Reynolds, M. S. (2003) Electrical Engineering (Committee Co-Chairperson)
Rania Kanj, Ph. D. (2004) Physiology and Pharmacology
Jeremy Day, M. S. (2004) Electrical Engineering (Committee Co-Chairperson)
Joshua Day, M. S. (2004) Electrical Engineering (Committee Co-Chairperson)
W. Travis Goldsmith, M. S., Electrical Engineering (Committee Co-Chairperson)
Walter McKinney, M. S. (2007) Electrical Engineering (Committee Co-Chairperson)
Sam Stone, M. S., (in progress) Electrical Engineering
Jeff S. Reynolds, Ph.D. (2009) Electrical Engineering (Committee Co-Chairperson)
Mark Jackson, M. S. (2010) Electrical Engineering

TEACHING RESPONSIBILITIES:

Dental Physiology (343), 1974-1979, Course Coordinator, 1974-1976

Advanced Circulation (491) 1974-1975

Advanced Respiration (491), 1975-2005

Medical Physiology Respiration (345), 1976-1978

Medical Physics (201C), 1980-1982

Physiological Methods (442), 1976-1990

Bioengineering (ME) 1982-1985

Bioengineering (MAE473 / EE425) 2001

Special Topics (EE) 2006, 2007

Medicine (101) 2005

NATIONAL RESEARCH COUNCIL ADVISOR

NRC Senior Fellow (1985-1986)
Dr. J. Jayaraman. Assoc. Prof. Chemical Engineering
Michigan State University, Michigan

NRC Fellow (1992-1994) (Post Doc)
Dr. C. A.. Chandler, Electrical Engineering
West Virginia University, W.V.

NRC Fellow(1999-2002) (Post Doc)
Dr. S-H Young
University of Alabama, Alabama

SOCIETY MEMBERSHIP AND AWARDS:

AWARDS

1979 – Outstanding Paper, Proceedings 7th Annual New England Bioengineering, Frazer, D. G., and B. Khosnood. "A model of the Gas Trapping Mechanism in Excised Lungs." Proc. of Seventh New Engl Bioeng. Conf. 7:482-485, 1979.

1989 - Nominee for the Alice Hamilton Award for Excellence in Occupational Safety and Health

1993 - Nominee for the Alice Hamilton Award for Excellence in Occupational Safety and Health

1994 -Nominee for the Alice Hamilton Award for Excellence in Occupational Safety and Health,
Organic Dust Exposure from Compost Handling: Response of the Animal Model. Am. J. Ind. Med., 24: 375-385, 1993.

1998 - Recipient of the Alice Hamilton Award (Biological Science Materials Category)
Pulmonary Dendritic Cell Distribution and Prevalence in Guinea Pig Airways: Effect of ovalbumin Sensitization and Challenge, J. of Pharm. And Exp. Therap. 282:995-1004,1997

2002- Received Honorable Mention for the Alice Hamilton Award in the Biological Science Category for the publication: Hubbs, A. F., N. S. Minhas, W. Jones, M. Greskevitch, L. A. Battelli, D. W. Porter, W. T. Goldsmith, D. G. Frazer, D. P. Landsittel, J.Y.C. Ma, M. Barger, K. Hill, D. Schwegler-Berry, V. Robinsion and V. Castranova. Comparative Pulmonary Toxicity of Six Abrasive Blasting Agents. Toxicological Sciences 61(1): 135-143, 2001.

2004 – Nominated for demonstrating excellence in science as a candidate for the Charles C. Shepard Award (Laboratory and Methods) for paper entitled; " Inhalation Exposure of Rats to Asphalt Fumes Generated at Paving Temperatures Alters Pulmonary Xenobiotic Metabolism Pathways without Lung Injury", by Ma, J. Y. C., A. Rengasamy, D. Frazer, M. W. Barker, A. F. Hubbs, L. Battelli, S. Tomblyn, S. Stone and V. Castranova.

2005 – CDC/NIOSH Engineer of the Year Award. Presented by the Assistant Surgeon General and the U.S. Public Health Service Chief Engineer in Bethesda MD.

2008 – Received Honorable Mention for the Alice Hamliton Award in the Biological Science Category for the publication , Effect of short-term stainless steel welding fume inhalation exposure on lung inflammation, injury, and defense responses in rats, by Antonini, J. M., S. Stone, J. R. Roberts, B. Chen,, D. Schwegler-Berry, A. A. Afshari, and D. G. Frazer in Tox. and Appl. Pharm. 223: 234-245, 2007.

2008 – Received the Bullard-Sherwood Award in the Research to Practice Category for animal exposure project which contributed to the prevention of flavoring-related bronchiolitis obliterans in popcorn workers.

2008 – Paper cited by the Faculty of 1000 Biology, for paper entitled 'Unrestrained acoustic plethysmograph for measuring specific airway resistance in mice', J. Appl. Physiol. May 2008.

2009 - Alice Hamilton Award, Honorable Mention, in the Engineering and Physical Sciences Category for: Reynolds, J. S., V.J. Johnson, and D. G. Frazer, Unrestrained acoustic plethysmograph for measuring specific airway resistance in mice ,J. Appl.Physiol.,105:711-717, 2008

2009 - Informa Healthcare Editors' pick of October's best toxicology articles: McKinney, W, B. Chen, and D. G. Frazer Computer Controlled Multi-wall Carbon Nanotube Inhalation Exposure System, Inhalation Toxicology, 21(12):1053-1061, 2009.

2011 - Alice Hamilton Award, Honorable Mention in the Biological Science Category for the publication: Leonard, S. S., B. T. Chen, S. G. Stone, D. Schwegler-Berry, A. J. Kenyon, D. Frazer, J. M. Antonini, Comparison of stainless steel and mild steel welding fumes in the generation of reactive oxygen species, Particle and Fibre Toxicology 7:32, 2010.

PATENT AWARDS:

Co-inventor:	Method and Apparatus for Cough Sound Analysis.
Co-inventor:	An Auscultatory Training System.
Co-inventor:	Acoustic Plethysmograph for Measuring Pulmonary Function.

Co-inventor Aerosol Generator for Nano-particles Co-inventor
(Received international patent, #61/237,9455, 2010)

MEMBER OF SOCIETIES:

APS 1974 - present American Physiological Society

IEEE Institute of Electrical and Electronic Engineers
Upper Monongahela Subsection
Delegate at Large 1981-82
Secretary/Treasure 1982-83
Vice-Chairman 1983-84

IEEE Institute of Electrical and Electronic Engineers
Pittsburgh Section
Chairman of Engineering in Medicine and Biology
1981-1984

BMES 2000 - present Biomedical Engineering Society

Eta Kappa Nu Electrical Engineering Honorary

Sigma Tau Engineering Honorary Fraternity

Tau Betta Pi Engineering Honorary Fraternity

STUDENT SPONSOR (AWARDS):

1976 - S. Benkeil: was chosen to represent WVU at the Eastern College Science Conference in Providence, RI. Title of Presentation: "Are lung pressure volume curves unique."

1978 - B. Khoshnood: received third place honors in Sigma Xi research competition. Title of presentation: "A pressure feedback electro-magnetic spirometer (PFES) for small animals."

1996- W.T. Goldsmith, First Place , Senior Computer and Electrical Engineering Design Award, " Three Dimensional Mapping of Sound Vectors from the Lung

1998- W. McKinney, Senior Computer and Electrical Engineering Design Award, " A system to ventilate an isolated perfused lung

2011- At this year's ACVP Annual Meeting, the Society of Toxicologic Pathology Student Speaker Award was awarded to Madhu Goravanahally for his presentation of DIACETYL INCREASES SENSORY INNERVATION AND SUBSTANCE P PRODUCTION IN RAT TRACHEA. The authors on the abstract were M.P. Goravanahally, A.F. Hubbs, J.S. Fedan, M. Kashon, L.A. Battelli, R.R .Mercer, W.T. Goldsmith, M. Jackson, A. Cumpston, D.G. Frazer, and R.D. Dey.

2011- At this year's SOT Annual Meeting, the Best Post-Doctoral Award was presented to Rajendran Sellamuthu for "Peripheral blood gene expression profiling reveals silica-induced pulmonary toxicity". 50th Annual Meeting of Society of Toxicology, Washington, D. C, March 6-10, 2011. The authors on the abstract were Rajendran Sellamuthu, Christina Umbright, Jenny R. Roberts, Rebecca Chapman, Shih-Houng Young, Diana Richardson, Howard Leonard, Walter McKinney, Bean Chen, David Frazer, Shengqiao Li, Michael Kashon and Pius Joseph.

2011- Rajendran Sellamuthu was also recognized for the Best Poster Award at the Allegheny-Erie Chapter of the Society of Toxicology in Pittsburgh, PA for a poster describing Peripheral blood gene expression profiling reveals silica induced pulmonary toxicity. The authors on the abstract were Rajendran Sellamuthu, Christina Umbright, Jenny R. Roberts, Rebecca Chapman, Shih-Houng Young, Diana Richardson, Howard Leonard, Walter McKinney, Bean Chen, David Frazer, Shengqiao Li, Michael Kashon and Pius Joseph

2011 **Best Poster Award,** Allegheny-Erie Chapter - Society of Toxicology, Pittsburgh, PA.

2011 **Post-doctoral Award,** Inhalation and Respiratory Specialty Section - Society of Toxicology, Washington D. C.

The same research presented at the Allegheny-Erie Chapter - Society of Toxicology, Pittsburgh, PA, received the Best Poster Award.

INVITED SPEAKER:

1980 - Indiana University, School of Medicine, Dept. of Physiology
Title: "Use of a model of the gas trapping mechanism in excised

lungs to detect lung disease."

1980 - Harvard University, School of Public Health, Dept. of Physiology
Title: "The gas trapping mechanism and its relation to lung disease.

1980 - Thoracic Society Symposium Entitled "Pulmonary Physiology and Function Testing in Small Laboratory Animals" "Pressure-volume curves: measurement, interpretation, species difference"

1985 - Inhalation Toxicological Research Institute Lovelace Biomedical and Environmental Research Institute, Albuquerque, New Mexico,
Title: Correlation of gas trapping and pathological changes in lungs with edema and emphysema.

2004 - Invited speaker at the International Lung Sounds Association annual meeting in Glasgow, Scotland: Title: Characteristics of Voluntary Coughs: Can voluntary coughs be used to detect lung disease?

INVITED REVIEWER:

JOURNALS
Lung
Respiration Physiology
Journal of Applied Physiology
Pediatric Pulmonary
Journal of Toxicology and Environmental Health

GRANTS REVIEWS
NIH Small Business Awards
University of Arizona Grant Reviews

LIST OF ABSTRACTS:

Frazer, D. G., W. S. Adams, and R. A. Rhoades. "Alveolar Geometry as a Function of Lung Volume." The Physiologist. 12(3): 229, 1969.

Franz, G. N., and D. G. Frazer. "A Model for Slowly Adapting Mechano-recetpors." Proc. Int. Union Physiol. Sci. XXV Int. Congress Munich IX: 185, 1971.

Franz, G. N., H. G. Minns, D. G. Frazer, and C. Roby. "Are Stretch-Receptors Force or Length Transducers?" Fed. Proc. 33: 415, April 1974.

Frazer, D. G., and K. C. Weber. "Minimum Volume of the Excised Rat Lung Fed. Proc. 33: 303, 1974.

Frazer, D. G., and K. C. Weber. "Trapped Air with Open Airways in the Intact Isolated Rat Lung." The Physiologist. 17: 224, 1974.

Frazer, D. G., and K. C. Weber. "Gas Trapped in Excised Rat Lungs as a Function of the Inflation Rate." Fed. Proc. 33: 1494, 1974.

Frazer, D.G., and K. C. Weber. "Additional Evidence of Trapped Air Having Open Airways Excised Rat Lungs." The Physiologist. 18: 3, 1975.

Frazer, D. G., P. W. Stengel, and K. C. Weber. "Evidence of Airway Closure at Positive Transpulmonary Pressures in Excised Rat Lungs." The Physiologist. 19: 197, 1976.

Franz, G. N., and D. G. Frazer. "An Improved Dynamic Model for Slowly Adapting Stretch Receptors." Biophys. J. 17: 115, 1977.

Frazer, D. G., S. Benkiel, P. W. Stengel, and K. C. Weber. "Are Quasi-Static Pressure-Volume (P_L-V_L) Curves for an Excised Rat Lung Unique?" Fed. Proc. 36: 1818, 1977.

Stengel, P. W., D. G. Frazer, and K. C. Weber. "An Evaluation of Two Degassing Techniques for Excised Rat Lungs." Fed. Proc. 36: 1820, 1977.

Frazer, D. G., P. W. Stengel, and K. C. Weber. "Evidence of Premature Airway Closure in Edematous Excised Rat Lungs." Am. Rev. Respir. Dis. 115: 326, 1977.

Frazer, D. G., and K. C. Weber. "Evidence of Airways Opening Continuously During Inflation of Excised Rat Lungs." The Physiologist. 20: 149, 1977.

Koshnood, B., M. W. Caldwell, W. L. Cooley, and D. G. Frazer. "A Pressure Feedback Electromagnetic Spirometer (PFES) for Small Animals." Fed. Proc. 37(3): 3218, 1978

LIST OF ABSTRACTS: (continued)

Frazer, D. G., F. Rothlishberger and K. C. Weber. "Effects of Gas Diffusion on Gas Trapping in Excised Rat Lungs." Fed. Proc. 37: 3640, 1978.

Frazer, D. G., J. Reister, and K. C. Weber. "Temperature Effects of Gas Diffusion on Gas Trapping in Excised Rat Lungs." The Physiologist. 21: 39, 1978.

Frazer, D. G., J. Morgan, B. Khoshnood, and K. C. Weber. "Gas Trapping in the Excised Lungs of Mice, Hamsters, Rats, Rabbits, and Cats." Am. Rev. Respir. Dis. 119: 309, 1979.

Frazer, D. G., J. Morgan, B. Khoshnood, and K. C. Weber. "Evidence of Meniscus Formation at Positive Transpulmonary Pressures in the Airways of Mice, Hamsters, and Rabbits." Fed. Proc. 38: 5841, 1979.

Morgan, J. J., and D. G. Frazer. "The Influence of the Thorax on Trapped Gas in Lungs." The Physiologist. 22, 1979.

Frazer, D. G., C. E. Turick and K. C. Weber. Sub-Ambient Temperature Effectson Gas Trapping in Excised Rat Lungs. Fed. Proc. 40: 870, 1980

Weber, K. C. and D.G. Frazer. "Effects of Airway Opening and Closing on the Shape of Lung Pressure-Volume Curves. The Physiologist. 22: 130, 1979.

Frazer, D.G. and G. N. Franz. "A Model of Static Lung Hysteresis." The Physiologist. 22: 40, 1979.

Morgan, J. J. and D. G. Frazer. "Trapped Gas in Lungs of Intact, Anesthetized Rats." The Physiologist. 23(4): 168, 1980.

Franz, G. N. and D. G. Frazer. "Analysis of Several Current Feedback Methods for compensation of Membrane Series Resistance (Rs) and Cytoplasmic Access Resistance (RDE) in Gap Voltage Clamps." Biophysical J.

Morgan, J. J., C. E. Turick and D. G. Frazer. "Nonuniformity of Airway Closure from Apex to Base in Excised Rat Lungs." The Physiologist 84, 1981.

Frazer, D. G., C. E. Turick, J. J. Morgan, G. N. Franz and E. L. Petsonk. "Trapped Gas Volume Changes During an Inflation-Deflation Cycle." Am. Rev. of Respir. Dis. 123: 201, 1981.

Morgan J. J., C. E. Turick, and D. G. Frazer. Nonuniformity of airway closure from apex to base in excised rat lungs. The Physiologist, 1981.

Frazer, D. G., C. E. Turick and M. J. Reasor. "Pretreatment of Rats with Chlorphentermine Reduces the Time-Temperature Dependence of Gas Trapping in Lungs." Fed. Proc., 1982.

LIST OF ABSTRACTS: (continued)

Frazer, D. G., C. E. Turick, J. J. Morgan, G. N. Franz and E. L. Petsonk. "Pressure in the Trapped Gas Space During Lung Inflation." The Physiologist, 25: 265, 1982.

Frazer, D. G., L. D. Smith, C.E. Turick and N. F. Nehrig. "Tracheal Lung Sounds While Recording Quasi-Static Pressure-Volume Curves of Excised Rat Lungs", The Physiologist, 26(4): A22, 1983.

Fedan, J.S., J.S. Franczak, C. Kosten, J.F. Cahill, D.G. Frazer, T. Lewis, and V. Castranova. Effects of chronic inhalation of coal dust and/or diesel exhaust on respones of rat airway smooth muscle to agonists. Tox. Soc. 1983.

Brancazio, L. R. and D. G. Frazer. "Comparison of Lung Unit and Whole Lung Area-Volume Relationships." Fed. Proc. 3205, 1984.

Smith, L. D., L. R. Brancaaio, N. E. Nehrig and D. G. Frazer. "Tracheal Lung Sounds versus End-Expiratory Pressure in Excised Rat Lungs." The Physiologist, 274, 1984.

Brancazio, L. R., N. F. Nehrig and D. G. Frazer. "The Effect of Ventilation Rate on Airway Closure in Excised Rat Lungs." Fed. Proc. 2487, 1985.

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Hubbs, A. F., K. Kreiss, R. Kanwal, G. Kullman, D. G. Frazer, W. T. Goldsmith, M. L. Kashon, R. R. Mercer, D. Schwegler-Berry, L. A. Battelli, and V. Castranova, Pulsed and continuous patterns of Diacetyl (2,3-butanedione) inhalation cause rhinitis, laryngitis, tracheitis and bronchitis in rats, (Submitted for publication)

Frazer, D. G., W. Lindsley, W. McKinney, J. S. Reynolds, G.N. Franz, M. Jackson, N. Burdette and W. T. Goldsmith, Recruitment/De-recruitment and Volume of Lung Units as the Excised Lung is Inflated/Deflated between Minimum and Maximum Lung Volume. (Submitted for publication in Ann. of Biomedical Eng.)

LeBouf, R.F., A. B. Stefaniak, B. Aleksander, B.T.Chen, D.G.Frazer, and M. A. Virji, Measurement of surface area of airborne titanium dioxide powder agglomerates: relationships between real-time diffusion charging-based and gas adsorption filter-based methods. (Submitted for publication)

Zaccone E. J., J.A. Thompson, D.S. Ponnoth, A.M. Cumpston, W.T. Goldsmith, M.C. Jackson, D.G. Frazer, A.F. Hubbs, M. Shimko and J.S. Fedan, Popcorn butter flavorings effects in the airways: Inhalation of diacetyl and 2,3-pentanedione on in vivo and in vitro reactivity to methacholine and direct effects in vitro. (Submitted for publication).

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Hubbs, A.F., A.M. Cumpston, W.T. Goldsmith, L.A. Battelli, M.L. Kashon, M.C. Jackson, D.G. Frazer, J.S. Fedan, M.P. Goravanahally,V. Castranova, K. Kreiss, P. Willard, S. Friend, D. Schwegler-Berry, and K. Sriram, Airway epithelial and olfactory neuroepithelial cytotoxicity of inhaled 2,3-pentanedione in Sprague-Dawley rats.(Submitted for publication).

W. McKinney, M. Jackson, T.M. Sager, J.S. Reynolds, K. Krajnak, R.R. Mercer, D.G. Frazer, T.A. Thomas, and V. Castranova, Pulmonary and cardiovascular responses of rats to inhalation of a commercial antimicrobial spray containing titanium dioxide nanoparticles .(Submitted for publication).

Erdely, A., J. M. Antonini, R. Salmen-Muniz, A. Liston, T. Hulderman, P. P. Simeonova,, M. Kashon, S. Li, S. Stone, B.T. Chen, D. G. Frazer and P. C. Zeidler-Erdely, Induction of type I interferon and pattern recognition receptor signaling following occupational particulate matter inhalation (Submitted for publication)

received
10/16/15

October 6, 2015

CURRICULUM VITAE

Name: Jefferson Clark Frisbee, Ph.D., FAHA, FAPS (CV)

Title: Professor, Department of Physiology and Pharmacology, West Virginia University School of Medicine
Director, Center for Cardiovascular and Respiratory Sciences, West Virginia University Health Sciences Center
Director, Doctoral Program in Clinical and Translational Sciences; West Virginia University Health Sciences Center

Mailing Address: Department of Physiology and Pharmacology
Center for Cardiovascular and Respiratory Sciences
PO Box 9105
1 Medical Center Drive; HSN 3152
Robert C. Byrd Health Sciences Center
West Virginia University
Morgantown, West Virginia 26506-9105

Office Phone: (304) 293-6527
Laboratory Phone: (304) 293-4199
Office FAX: (304) 293-5513
Internet: jefrisbee@hsc.wvu.edu

Home Address: 107 Lamplighter Drive, Morgantown, West Virginia 26508

Home Phone: (304) 594-1235

Birth Date; Location: September 4, 1968; Rantoul, Illinois

Citizenship: United States of America

Education:

1987-1991	University of Guelph	B.Sc. (Honors; Human Kinetics)
1992-1993	University of Guelph	M.Sc. (Human Biology)
1993-1996	University of Guelph	Ph.D. (Physiology/Biophysics)
1996-1997	University of Washington	Postdoctoral Fellowship (Cardiovascular Bioengineering) *Advisor: James B. Bassingthwaighte, MD, Ph.D.*
1997-2000	Medical College of Wisconsin	Postdoctoral Fellowship (Microcirculatory Physiology) *Advisor: Julian H. Lombard, Ph.D.*

Previous Academic Positions:

2000-2003	Medical College of Wisconsin	Research Assistant Professor; Department of Physiology
2003-2004	Medical College of Wisconsin	Assistant Professor; Department of Physiology
2004-2007	West Virginia University	Assistant Professor; Department of Physiology and Pharmacology
2007-2011	West Virginia University	Associate Professor; Department of Physiology and Pharmacology (Tenured)
2011-present	West Virginia University	Professor; Department of Physiology and Pharmacology
2012-present	West Virginia University	Director; Center for Cardiovascular and Respiratory Sciences
2012-present	West Virginia University	Member; WV-Clinical and Translational Sciences Institute
2013-2015	West Virginia University	Chair (Interim); Department of Epidemiology
2015-present	West Virginia University	Director; Clinical and Translational Sciences Doctoral Program

Other Professional Positions:

2012-2013	Proctor and Gamble Corporation	Consultant (Vascular Biology); Cosmetics Division
2013-2014	Novartis Corporation	Consultant (Heart Failure); Cardiovascular Division
2015 – present	American Heart Association	Executive Leadership Team; Heart Walk

Professional Society Memberships:

15|16-1002

American Heart Association (Silver Heart Member)
Council for Atherosclerosis, Thrombosis and Vascular Biology
Council for High Blood Pressure Research
Council for Basic Cardiovascular Sciences (Fellow)
Interdisciplinary Working Group on Atherosclerotic Peripheral Vascular Disease
North American Vascular Biology Organization
American Physiological Society
Microcirculatory Society, USA
American Diabetes Association (Professional)
New York Academy of Science
Society for Experimental Biology and Medicine
American College of Sports Medicine

Academic Honors and Professional Recognition:
University of Guelph Graduate Research Award, 1993
University of Guelph Graduate Fellowship Award, 1994
Silver Medalist, August Krogh Young Investigator Award, Microcirculatory Society, 1999
Young Investigator Award (Meritorious Research), American Physiological Society, Cardiovasc. Section, 2000
Young Investigator Travel Award, American Physiological Society, Cardiovascular Section, 2000
New Investigator Award, Jackson Cardiovascular-Renal Meeting, 2000
Young Investigator Award (Meritorious Research), American Physiological Society, Cardiovasc. Section, 2001
Young Investigator Award, American Physiological Society, Cardiovascular Section, 2001
Young Investigator Award (Meritorious Research), American Physiological Society, Cardiovasc. Section, 2002
Elected Fellow, American Heart Association; Council on Basic Cardiovascular Sciences, 2006
Distinguished Service Award; American Physiological Society – Editorial Board Service for American Journal of Physiology: Regulatory, Integrative, and Comparative Physiology, 2008
Lindau Meeting of Nobel Laureates (60th Annual Meeting) - Mentor for graduate student attendee (Adam G. Goodwill), 2010
Dean's Award for Excellence in Research; West Virginia University School of Medicine, 2011
Elected Fellow, American Physiological Society; Cardiovascular Section, 2011
President-Elect; The Microcirculatory Society, Inc.; 2012 – 2013
President; The Microcirculatory Society, Inc.; 2013 – 2014
Past-President; The Microcirculatory Society, Inc.; 2014-2015

PROFESSIONAL SERVICE

Scientific Journals

Editor-in-Chief

2010 – present	Editor-in-Chief; Microcirculation

Associate Editor/Editorial Board:

2012 – present	Editorial Board; Journal of Cardiovascular Research
2011 – present	Editorial Board; Frontiers in Physiology (Vascular Physiology)
2010 – present	Editorial Board; The Scientific World Journal (Physiology)
2006 – present	Associate Editor; Microvascular Research
2010 – present	Associate Editor; Journal of Clinical and Experimental Cardiology
2010 – present	Editorial Board; Frontiers in Computational Physiology and Medicine
2005 – present	Editorial Board; American Journal of Physiology – Reg, Integrat and Comp Physiology
2007 – present	Editorial Board, Journal of Vascular Research
2007 – 2012	Editorial Board; American Journal of Physiology – Heart and Circulatory Physiology
2004 – 2009	Associate Editor; Microcirculation
2007	***Editor: Special Topics Issue*** for *Microcirculation:* "Obesity, Insulin Resistance and Vascular Dysfunction"
2008	***Co-Editor: Special Topics Issue*** for *Microcirculation:* "Theoretical Modeling of the Microcirculation"; with T.W. Secomb
2012	Chair, Podcast for Impaired blood pressure recovery to hemorrhage in obese Zucker rats with orthopedic trauma. (American Journal of Physiology – Heart Circ Physiol)

Invited Reviewer (selected; from >70 journals)

1. Advances in Physiology Education
2. Anesthesiology
3. Atherosclerosis, Thrombosis and Vascular Biology
4. American Journal of Hypertension

5. American Journal of Pathology
6. American Journal of Physiology
    a. *Cell Physiology*
    b. *Regulatory, Integrative and Comparative Physiology*
    c. *Renal, Fluid and Electrolyte Physiology*
    d. *Heart and Circulatory Physiology*
7. Annals of Biomedical Engineering
8. Antioxidants and Redox Signaling
9. Atherosclerosis
10. Cardiovascular Research
11. Circulation
12. Circulation Research
13. Clinical and Experimental Physiology and Pharmacology
14. Diabetes
15. Diabetic Medicine
16. Endocrinology
17. Experimental Physiology
18. European Journal of Applied Physiology
19. Free Radicals in Biology and Medicine
20. Frontiers in Computational Physiology and Medicine
21. Frontiers in Vascular Physiology
22. High Altitude Medicine and Biology
23. Hypertension
24. Journal of Applied Physiology
25. Journal of Cerebral Blood Flow and Metabolism
26. Journal of Pharmacology and Experimental Therapeutics
27. Journal of Physiology
28. Journal of Vascular Research
29. Journal of Visualized Experiments
30. Kidney International
31. Lancet
32. Metabolism
33. Microcirculation
34. Microvascular Research
35. Physiological Genomics
36. Pflugers Archive/European Journal of Physiology
37. Public Library of Science (PLOS ONE)
38. Proceedings of the National Academy of Sciences

Book Reviewer

Bentham Science Publishers (e-Book) "Microvascular Disorders in Cardiometabolic Diseases", 2008

Government/Professional/Scientific Societies

1. Ad Hoc Member; Diabetes, Digestive and Kidney Diseases – C Section; NIDDK; National Institutes of Health; October, 2015
2. Member; American Diabetes Association Research Grant Review Committee; 2015 – 2018.
3. Member; Strategically Focused Research Network Study Section, American Heart Association, (Cardiovascular Disease Risk and Disparities), 2015
4. External Reviewer for Promotion (Dr. Tara Haas, School of Kinesiology and Health Science), York University, Canada, 2015
5. External Reviewer for Appointment (Dr. Ulf G. Bronas; Department of Behavioral Sciences), University of Illinois – Chicago, Chicago, Illinois, 2015
6. Discovery Grant Application Reviewer; National Sciences and Engineering Research Council (NSERC –Canada); December 2014-January 2015
7. Grant Proposal Reviewer, State of Louisiana Board of Regents/EPSCoR Grants Program, January 2015
8. External Reviewer/Referee for the Billy S. Guyton Distinguished Professorship candidates, University of Mississippi School of Medicine, Jackson, MS, USA, 2014-2015
9. External Reviewer for Tenure and Promotion (Dr. Shawn Bearden, Department of Biological Sciences), Idaho State University, ID, USA, 2014
10. Member; Vascular Biology and Blood Pressure Regulation (Basic Science 1) Study Section; American Heart Association, National Center; 2014
11. Chairman; Vascular Biology and Blood Pressure Regulation (Basic Science 3) Study Section; American Heart Association, National Center; 2013
12. Member; Review Panel for Innovative Science Awards; American Heart Association (Vascular Biology and Blood Pressure Regulation); 2012 – present
13. External Grant Reviewer, "Innovative Research Incentives Scheme"; The Netherlands Organization for Health Research and Development; March-April, 2012
14. External Reviewer for Tenure and Promotion (Dr. Olivier Birot, Department of Kinesiology and Health Science), York University, Ontario, Canada, 2012
15. Member; Vascular Biology and Blood Pressure Regulation (Basic Science 1) Study Section; American Heart Association, National Center; 2012
16. Discovery Grant Application Reviewer; National Sciences and Engineering Research Council (NSERC –Canada); January 2012
17. Project Reviewer; Biotechnology and Biological Sciences Research Council (United Kingdom); January/February, 2012
18. *Ad Hoc* Reviewer, Government of Romania, Ministry of Education, Research, Youth and Sport, National Council for Scientific Research; 2011, 2012

19. Program Project Pilot Grant Reviewer; The Cleveland Clinic/Cleveland State University; "The State of Ohio Research Grant Program", 2009-2011
20. Member; Special Emphasis Panel (ZRG1 CVRS-C50); "Ancillary studies to the ACCORD clinical trial or the ACCORD follow-on study"; National Institutes of Health; April 2011
21. Discovery Grant Application Reviewer; National Sciences and Engineering Research Council (NSERC – Canada); November/December; 2010
22. Project Reviewer; Biotechnology and Biological Sciences Research Council (United Kingdom) May/June, 2010
23. *Temporary* Member; Clinical and Integrative Cardiovascular Sciences Study Section(CICS); National Institutes of Health; June 2010
24. Chairman; Vascular Biology and Blood Pressure Regulation Study Section; American Heart Association, National Center; 2009 – 2012
25. Project Reviewer; Biotechnology and Biological Sciences Research Council (United Kingdom) March/April, 2009
26. Member; Vascular Biology and Blood Pressure Regulation Study Section; American Heart Association, Southeastern Affiliate; 2009
27. *Ad Hoc* Project Reviewer, The Wellcome Trust Limited February, 2004-2009
28. Co-Chairman; Vascular Biology and Blood Pressure Regulation Study Section; American Heart Association, National Center; 2008 – 2009
29. *Ad Hoc* Project Reviewer; The Thrasher Pediatric Research Fund; January, 2007-2008
30. *Ad Hoc* Project Reviewer; The Austrian Science Foundation (V.86); September, 2007
31. Member; Vascular Biology and Blood Pressure Regulation Study Section; American Heart Association, National Center; 2007 – 2008
32. Member; Integrative Cardiac Biology, Vascular Biology, Blood Pressure Regulation, Cardiorenal Study Section, American Heart Association, Southern and Ohio Valley Research Consortium 3A; April 2007
33. *Ad Hoc* Project Reviewer, The Swiss National Science Foundation (3200B0-116511) December 2006
34. Grant Review Panel Member; New Investigator Grant Program; "Sick Kids Foundation", Toronto Children's "Sick Kids" Hospital; Toronto, Ontario, Canada; June 2006
35. *Temporary* Member; Atherosclerosis and Inflammation Cardiovascular Sciences Study Section (AICS); National Institutes of Health; June 2006
36. *Ad Hoc* Member; Integrative Cardiac Biology/Regulation Study Section, American Heart Association, National Center; April 2006
37. Member; Integrative Cardiac Biology, Vascular Biology, Blood Pressure Regulation, Cardiorenal Study Section American Heart Association, Southern and Ohio Valley Research Consortium 3A; April 2006
38. *Temporary* Member; Hypertension and Microcirculation Study Section (HM); National Institutes of Health; 2005-2006
39. *Temporary* Member; Atherosclerosis and Inflammation Cardiovascular Sciences Study Section (AICS); National Institutes of Health; 2004-2006
40. Member; Integrative Cardiac Biology, Vascular Biology, Blood Pressure Regulation, Cardiorenal Study Section American Heart Association, Southern and Ohio Valley Research Consortium 3B; April 2005
41. Member; Special Emphasis Panel; "Multi-Scale Modeling in Biomedical, Biological and Behavioral Systems"; 04-607; National Science Foundation; January/February 2005
42. Member; Special Emphasis Review Section; "Progression of Cardiovascular Disease in Type I Diabetes"; RFA HL 04-013; National Institutes of Health (National Heart, Lung and Blood Institute); July 2004
43. Member; Vascular Biology and Blood Pressure Regulation Study Section; American Heart Association, National Center; 2004 – 2006
44. Member; Cardiovascular Pathophysiology, Radiology and Surgery Study Section; American Heart Association, National Center; 2003
45. Member; Cardiovascular Pathophysiology III Study Section; American Heart Association, National Center; 2001 – 2003
46. Member; National Research Review Panel American Diabetes Association, 2002 – 2003
47. Reviewer, Cardiovascular Programs Review Board; Department of Veterans Affairs Medical Research Service; October, 2001
48. *Temporary* Member; Visual Sciences Study Section B (VISB); National Institutes of Health; March 2001

1. Member, Communications Committee, Microcirculatory Society, 2014 – present
2. Member; International Scientific Programming Committee, World Congress for Microcirculation 2013-2015; Kyoto, Japan
3. Abstract Grader, American Heart Association (Scientific Sessions, 2012-present); Endothelium, Vascular Tone and Nitric Oxide Session Judge (Posters); Joint Meeting of British Microcirculation Society and Microcirculatory Society, Oxford University, UK, 2012
4. Abstract Grader; American Heart Association (Council for High Blood Pressure Research, 2004- present)

5. Abstract Grader/Referee; World Congress for Microcirculation/European Microcirculatory Society Annual Meeting; 2010
    - Vascular Tone Control
    - Analysis of Blood Flow Signals
    - Oxygen Transport to Tissue
    - Oxidative Stress
    - Systemic and Pulmonary Hypertension
    - Vascular Networks
6. Abstract Grader; American Heart Association (Council for Atherosclerosis, Thrombosis and Vascular Biology, 2007-2010)
7. Abstract Grader, American Heart Association (Scientific Sessions, 2004-2008); Coronary, Regional and Microcirculation
8. Member; Executive Leadership Team; American Heart Association, Morgantown, WV "Heart Walk", 2013
9. Chair; Long Range Planning Committee; The Microcirculatory Society, 2012-2013
10. President-Elect; The Microcirculatory Society, Ltd.; 2012
11. Member; Organizing Committee; Microcirculatory Society/North American Vascular Biology Organization Fall Meeting; 2012 – 2013
12. Member; Awards Committee; American Physiological Society – Cardiovascular Section, 2012 – present
13. Member; Publications Committee; The Microcirculatory Society, 2007 – 2009 (position resigned for Editor-in-Chief of *Microcirculation*)
14. Member; Executive Council; The Microcirculatory Society, 2005 – 2007
15. Member; Membership Committee; American Physiological Society – Cardiovascular Section, 2004 – 2006
16. Member; Nominating Committee; American Physiological Society – Cardiovascular Section, 2004 – 2007
17. *Ad Hoc* Member; Steering Committee; American Physiological Society – Cardiovascular Section, 2002
18. *Ad Hoc* Member; Section Program Committee; American Physiological Society – Cardiovascular Section, 2002

Institutional

1. Member, Tenure and Promotion Committee, Department of Physiology and Pharmacology; West Virginia University School of Medicine; 2015 – present
2. *Member*, Internal Advisory Committee, West Virginia Clinical and Translational Sciences Institute (WVCTSI); 2014 – present
3. Chairman; Search Committee for Faculty Recruit to Department of Physiology/Pharmacology and Center for Cardiovascular and Respiratory Sciences (Renal Physiology), West Virginia University HSC, 2014 *(position unfilled)*
4. Member; Search Committee for Faculty Recruit to Department of Physiology/Pharmacology and Center for Cardiovascular and Respiratory Sciences (Diabetes/Endocrinology), West Virginia University HSC, 2014 *(position unfilled)*
5. Member, Tenure and Promotion Committee, West Virginia University School of Medicine; 2014 – 2015
6. Reviewer, West Virginia University Senate Research Grant Program, West Virginia University, 2013-2014
7. Member; Clinical and Translational Research (CTR) Recruitment Intake Committee; West Virginia University HSC, 2013-present
8. Member; Pilot Funds Review Committee (PFRC), West Virginia Clinical and Translational Sciences Institute, 2013-present
9. Chairman; Search Committee for Faculty Recruit to Departments of Physiology/Pharmacology, Neurobiology/Anatomy and Center for Cardiovascular and Respiratory Sciences, West Virginia University HSC, 2013-2014 *(position closed)*
10. Department Chair Search Committee; Department of Periodontology; West Virginia University School of Dentistry; 2013-present
11. Member, Clinical and Translational Pilot Grants Program; West Virginia Clinical and Translational Science Institute (WVCTSI); 2012 – present
12. Member; Internal Advisory Committee; Stroke COBRE Program, West Virginia University HSC; 2012-present
13. Faculty Search Committee; Arthur I. Jacknowitz Distinguished Chair; Department of Clinical Pharmacy; West Virginia University School of Pharmacy; 2012-2013
14. Member, Cardiopulmonary Training Grant (T32), Trainee Interview and Selection Committee, West Virginia University HSC; 2011-2012
15. Member, Steering Committee for Center for Cardiovascular and Respiratory Sciences (CCRS); West Virginia University HSC; 2011 – 2012
16. Member, Animal Compliance Office Education and Training Focus Group, West Virginia University HSC; 2011
17. Member, Research Funding Development and Bridge Grant Program Review Committee, West Virginia University HSC; 2011 – present
18. Reviewer, West Virginia University Genomic Discovery Grant Program; West Virginia University HSC; 2010
19. Chairman, Tenure and Promotion Committee, Department of Physiology and Pharmacology, West Virginia University School of Medicine; 2009 – 2014
20. Chairman; Search Committee for Research Specialist for Analytical Biochemistry Facility, Center for Cardiovascular and Respiratory Sciences, West Virginia University Health Sciences Center, 2009

21. Member, Graduate Advisory Committee; Cellular and Integrative Physiology Program, West Virginia University HSC; 2009 – present
22. Director, Visiting Scholar Series; Center for Interdisciplinary Research in Cardiovascular Sciences; West Virginia University HSC; 2008 - present
23. Director, Analytical Biochemistry Facility, Center for Cardiovascular and Respiratory Sciences, West Virginia University HSC; 2007 – 2012
24. Faculty Search Committee; Department of Exercise Physiology; West Virginia University School of Medicine; 2007-2008 *(position filled by Mike Morissette)*
25. Faculty Search Committee; Department of Exercise Physiology; West Virginia University School of Medicine; 2007-2008 *(position filled by Mark Olfert)*
26. Faculty Search Committee; Center for Interdisciplinary Research in Cardiovascular Sciences; West Virginia University School of Medicine; 2007-2008 *(position filled by Gregory Dick)*
27. Faculty Search Committee; Department of Chemical Engineering; West Virginia University School of Engineering; 2007-2008 *(position filled by Robin Farmer)*
28. Member, Animal Facilities Advisory Group; West Virginia University HSC; 2007 – present
29. Member, Clinical/Translational Strategic Planning Group; West Virginia University HSC; 2007
30. Member, Tenure and Promotion Committee, Department of Physiology and Pharmacology, West Virginia University School of Medicine; 2007 – 2009
31. Faculty Search Committee; Department of Chemical Engineering; West Virginia University School of Engineering; 2006-2007
32. Chairman; Faculty Search Committee; Center for Interdisciplinary Research in Cardiovascular Sciences; West Virginia University School of Medicine; 2006-2007 *(position filled by Robert Brock)*
33. Chairman, West Virginia University Research Funding Development Grant Program, West Virginia University HSC; 2006-2011
34. *Ad Hoc* Reviewer, West Virginia University Bridge Grant Program, West Virginia University School of Medicine; 2006-present
35. Member, Scientific Advisory Board, West Virginia University School of Medicine; 2005-2007
36. Faculty Search Committee; Department of Exercise Physiology; West Virginia University School of Medicine; 2005-2006
37. Faculty Search Committee; Chairman of Department of Biochemistry and Molecular Biology; West Virginia University School of Medicine; 2005-2006
38. Member, Research Development and Bridge Grant Program Review Committee, West Virginia University HSC; 2005-2006
39. Reviewer; Hatch Grant Program; West Virginia University School of Agriculture and Forestry; 2005
40. Chairman, Basic Sciences II (Posters); van Liere Convocation Research Day; West Virginia University HSC; 2005
41. Director, Work-in-Progress Seminar Series, Center for Interdisciplinary Research in Cardiovascular Sciences, West Virginia University School of Medicine; 2005 - 2008
42. Faculty Search Committee; Center for Interdisciplinary Research in Cardiovascular Sciences; West Virginia University School of Medicine; 2004-2005 *(position filled by Judy Muller-Delp)*
43. Faculty Search Committee; Department of Pediatrics/CARDIAC Project; West Virginia University School of Medicine; 2004-2005
44. Faculty Search Committee; Center for Interdisciplinary Research in Cardiovascular Sciences; West Virginia University School of Medicine; 2004-2005 *(position filled by Han-Gang Yu)*
45. Graduate Student Admissions Committee; Department of Physiology; Medical College of Wisconsin; 2003
46. Judge for Postdoctoral Fellows; MCW Research Day, 2000-2003
47. Project Evaluator; Summer Program for Undergraduate Research, MCW, 2000-2004
48. Basic Science Representative; Medical College of Wisconsin Committee for Postdoctoral Affairs, 2000
49. Committee for Graduate Student Affairs, University of Guelph, 1994

Scientific Meetings

2016 **Dublin**

2014 Symposium Co-Chairman
Vascular Biology 2014; "Inflammation, Oxidative and Nitrosative Stress on Microvascular Responses in Disease"
Monterey, CA

2014 Symposium Chairman
European College of Sports Sciences 2014
"The Beneficial Effects of Exercise Training on Muscle Microvascular Endothelial Function in Health and Disease"
Amsterdam, Netherlands

2014	Microcirculatory Society President's Symposium Experimental Biology 2014 "Innovative Approaches to Microvascular Sciences: San Diego, CA
2013	Symposium Chairman International Union of Physiological Sciences (IUPS) "Quantitative Approaches in the Study of Blood Flow Regulation" Birmingham, UK
2010	Symposium Chairman World Congress for Microcirculation "Spotlight on Angiogenesis: Tumor Vasculature Revisited" Paris, France
2010	Symposium Chairman World Congress for Microcirculation "Computational Modeling in Microvascular Function" Paris, France
2010	Symposium Chairman World Congress for Microcirculation "Microvascular Dysfunction in Metabolic Disorders – A Translational Approach" Paris, France
2010	Member, Scientific Committee; World Congress for Microcirculation/European Microcirculatory Society Annual Meeting Paris, France
2010	Experimental Biology Featured Topic Chairman American Physiological Society – Cardiovascular Section "Cardiovascular Consequences of the Metabolic Syndrome", Anaheim, CA
2009-2010	Member, International Planning Committee; World Congress for Microcirculation/European Microcirculatory Society Annual Meeting Paris, France
2007	Symposium Co-Chairman; World Congress for Microcirculation "Influences of obesity on the microcirculation: causes and consequences" Milwaukee, WI
2006	Session Chairman; European College of Sports Sciences "Biochemistry I" and "Biochemistry II" (Poster and Oral Presentations) Lausanne, Switzerland
2004	Experimental Biology Symposium Co-Chairman The Microcirculatory Society "Young Investigator Symposium"; Washington, DC
2003	Experimental Biology Symposium Chairman The Microcirculatory Society "Young Investigator Symposium"; San Diego, CA

2002 Experimental Biology Featured Topic Chairman
American Physiological Society – Cardiovascular Section
"Regulation of Vascular Tone: Parallel and Redundant Signaling Pathways", New Orleans, LA

FUNDED GRANTS AND CONTRACTS

2015 West Virginia Clinical and Translational Sciences Institute (Pilot Project Grant)
"Cardiometabolic Risk Profiles and Cardiovascular Health in Patients at WVU HSC"
(Principal Investigator)

2015 West Virginia Clinical and Translational Sciences Institute (Small Pilot Grant)
"Patient Compensation for Cardiovascular and Metabolic Disease"
(Principal Investigator)

2015 West Virginia Clinical and Translational Sciences Institute (Small Pilot Grant)
"Cardiovascular and Metabolic Outcomes of Bariatric Surgery"
(Principal Investigator)

2014-2016 American Heart Association – Great Rivers Affiliate Research Program
14PRE20380386 "Vascular Dysfunction from Depression and Metabolic Syndrome"
(Mentor; S.D. Brooks, Principal Investigator)

2014-2017 American Heart Association – National Center Research Program
14CSLOI19470061 "Reducing the Burden of CVD Risk: An Innovative Approach from the Study of
Pending Infectious Disease"
(Principal Investigator)

2014-2019 NIH – National Heart, Lung and Blood Institute
R01 HL102960 "An Ethnicity-Specific Metabolic Syndrome Score to Assess Risk: The Jackson Heart Study"
(Co-Investigator; M. Gurka, Principal Investigator)

2015-2019 NIH – National Institute of Diabetes and Digestive and Kidney Diseases
K01 DK105043 "Evaluation of Endothelial Hyperglycemia-driven alterations during type 2 diabetes"
(Co-Mentor; B. R. Hoffman, Principal Investigator)

2014-2019 NIH – National Institute of General Medical Sciences
P20 GM109098 "West Virginia Stroke COBRE"
(Mentor (1 project), Co-investigator (2 projects))

2013-2015 American Heart Association – Great Rivers Affiliate Research Program
13PRE16850005 "Chronic Stress, Depression and Vascular Dysfunction: Protective Effect of Gender"
(Mentor; S.C. Stanley, Principal Investigator)

2013-2015 American Heart Association – National Center Research Program
13IRG14330015 "Novel Mechanisms of Microvascular Rarefaction in Metabolic Syndrome"
(Principal Investigator)

2012-2013 WV-INBRE/Appalachian Cardiovascular Research Network (ACoRN)
"Reversibility of Microvascular Perfusion Heterogeneity in Obesity and Insulin Resistance"
(Principal Investigator)

2012-2017 NIH – National Institute of Diabetes and Digestive and Kidney Diseases
R01 DK095210 "Mechanisms of Metabolic Dysfunction in Type II Diabetes Mellitus"
(Co-Investigator; D.A. Beard, Principal Investigator)

2012-2017	NIH/NIGMS – National Institute of General Medical Sciences	
	P50 GM094503	"Virtual Physiological Rat Center for the Study of Physiology and Genomics" (Collaborating Investigator; D.A. Beard, Principal Investigator)
2010-2012	American Heart Association – Great Rivers Affiliate Research Program	
	10PRE3040016	"Early Microvascular Rarefaction in the Metabolic Syndrome" (Mentor; A.G. Goodwill, Principal Investigator)
2009-2010	NIH - National Institute of Diabetes and Digestive and Kidney Diseases	
	RR 2865AR	"Impaired Skeletal Muscle Perfusion in the Metabolic Syndrome" (Principal Investigator)
2008-2010	American Heart Association – Great Rivers Affiliate	
		"Influence of a Diabetic Phenotype on Specific Mitochondrial Subpopulations in the Heart" (Co-Sponsor with J.M. Hollander; E.R. Dabkowski, Principal Investigator)
2007-2012	American Heart Association – National Center; Established Investigator Award	
	0740129N	"Hypercholesterolemia and Microvascular Rarefaction: A Translational Initiative from Mouse to Humans" (Principal Investigator)
2007-2012	NIH – National Institute of Environmental Health Sciences	
	R01 ES15022	"Remote Microvascular Dysfunction after Particulate Matter Exposure" (Co-Investigator; T.A. Nurkiewicz, Principal Investigator)
2009-2010	NIH – National Institute of Diabetes and Digestive and Kidney Diseases	
	RR2865AR	"Skeletal Muscle Microcirculation in Metabolic Syndrome" (Principal Investigator)
2004–2010	NIH – National Institute of Diabetes and Digestive and Kidney Diseases	
	R01 DK64668	"Skeletal Muscle Microcirculation in Obese Zucker Rats" (Principal Investigator)
2004–2009	NIH – National Institute of General Medical Sciences	
	R01 GM68610	"Constraint-Based Analysis of Large Scale Biochemical Systems" (Collaborator; D.A. Beard, Ph.D. Principal Investigator)
2003-2004	Children's Hospital of Wisconsin/Children's Hospital Foundation	
		"Development of Peripheral Vasculopathy in Juvenile Obese Zucker Rats" (Principal Investigator)
2000–2004	NIH – National Institute of General Medical Sciences	
	R01 GM31278	"Novel Eicosanoids: Analysis, Synthesis and Function" (Collaborator; J.R. Falck, Ph.D., Principal Investigator)
2003–2008	NIH – National Heart, Lung and Blood Institute	
	R01 HL72920	"Microvessel O_2 Responses in Salt Sensitive Hypertension" (Co-Investigator; J.H. Lombard, Ph.D., Principal Investigator)
2003–2006	American Heart Association – National Center Scientist Development Grant	
	0330194N	"Mechanisms of Impaired Skeletal Muscle Arteriolar Dilation to Reduced PO_2 in Obese Zucker Rats" (Principal Investigator)
2003–2004	American Heart Association – Northland Affiliate Beginning Grant-in-Aid	

"Impaired Skeletal Muscle Arteriolar Dilation in Obese Zucker Rats"
(Principal Investigator)
Declined for National SDG

2003-2008 NIH – National Heart, Lung and Blood Institute
P01 HL29587 "Project 4: Angiotensin II: Permissive Role to Maintain Vascular Relaxation"
(Co-Investigator; J.H. Lombard, Ph.D., Project Leader)
"Arterial Blood Pressure – Determinants and Controllers"
(A.W. Cowley, Jr. Ph.D., Principal Investigator)

2000-2004 NIH – National Heart, Lung and Blood Institute
R01 HL65289 "High Salt Diet, Angiotensin II and Microvessel Dilation"
(Co-Investigator; J.H. Lombard, Ph.D., Principal Investigator)

2000-2001 Medical College of Wisconsin
"Microvascular Function with Type II Diabetes"
(Principal Investigator)

1998-2003 NIH – National Heart, Lung and Blood Institute
P01 HL29587 "Project 4: Role of 20-HETE in Regulating Vascular Oxygen Response"
(Co-Investigator; J.H. Lombard, Ph.D., Project Leader)
"Arterial Blood Pressure – Determinants and Controllers"
(A.W. Cowley, Jr. Ph.D., Principal Investigator)

1998-2001 NIH – National Heart, Lung and Blood Institute
F32 HL09994 "Microcirculation, salt and hypertension"
(Principal Investigator)

1996-1997 NIH - National Research Service Award; Cardiovascular Bioengineering Training Grant
5T32HL07403-19

PUBLICATION HISTORY

A. *Theses and Dissertations:*

1. **J.C. Frisbee.** The effects of acute polycythemia on skeletal muscle fatigue on *in situ* canine muscle. M.Sc. Thesis. University of Guelph, 1993.
2. **J.C. Frisbee.** Microvascular hematocrit and permeability-surface area product in contracting canine skeletal muscle *in situ*. Ph.D. Dissertation, University of Guelph, 1996.

B. Book Chapters and Reviews

1. J.H. Lombard, **J.C. Frisbee**, R.J. Roman and J.R. Falck. "Evaluation of cytochrome P450-4A ω-hydroxylase as an oxygen sensing mechanism in the microcirculation." In: *Oxygen Sensing – Methods in Enzymology.* Volume 381. C.K. Sen and G.L. Semenza (Eds.). New York: Academic Press Inc. p. 140-165 (2004).
2. Y. Liu, **J.C. Frisbee** and D.D. Gutterman. "Reactive oxygen species and K^+ channel function in diabetes and insulin resistance." In: *Trends in Diabetes Research.* Hauppauge, NY: Nova Science Publishers, Inc. p. 71-106 (2006).
3. **J.C. Frisbee** and M.D. Delp. "Vascular function in the metabolic syndrome and the effects on skeletal muscle perfusion: lessons from the obese Zucker rat." In: *Essays in Biochemistry*. 42:145-160 A. Wagenmakers, (Ed.). London, UK: Portland Press, Inc. (2007).
4. **J.C. Frisbee.** Obesity, insulin resistance and microvessel density. *Microcirculation* 14:289-298, 2007.
5. P.A. Stapleton, M.E. James, A.G. Goodwill and **J.C. Frisbee**. Obesity and vascular dysfunction. *Pathophysiology.* 15:79-89, 2008
6. **J.C. Frisbee** and R.W. Brock. "Microcirculation and insulin resistance"". In: *Microcirculation Function, Malfunction, and Measurement.* Hauppauge, NY: Nova Science Publishers, Inc. p.31-40, 2009
7. T.A. Nurkiewicz, **J.C. Frisbee** and M.A. Boegehold. "Assessment of vascular reactivity", Elsevier Science Publishers Inc. In: Comprehensive Toxicology; C.A. McQueen (Ed.); p13-148, 2010.

8. P.A. Stapleton, A.G. Goodwill, M.E. James, R.W. Brock and **J.C. Frisbee.** "Hypercholesterolemia and microvascular dysfunction: Interventional Strategies". *J. Inflammation (Lond):* 7:54, 2010
9. A.G. Goodwill and **J.C. Frisbee.** "Oxidant stress and skeletal muscle microvasculopathy in the metabolic syndrome". *Vasc. Pharmacol.* 57: (5-6): 150-159, 2012
10. S.D. Brooks, R. Van Gilder, **J.C. Frisbee**, T.L. Barr. "Genomics for the advancement of clinical translation in stroke" *Frontiers in Neurotherapeutics, CRC Press;* 2013/2014
11. S. Golbidi, **J.C. Frisbee**, and I. Laher. Chronic stress impacts the cardiovascular system: animal models and clinical outcomes. *Am. J. Physiol. Heart Circ. Physiol.* 308:H1476-H1498, 2015
12. Chantler PD, **Frisbee JC**. Arterial function in cardio-metabolic diseases: from the microcirculation to the large conduits. *Prog Cardiovasc Dis.* 57(5):489-96, 2015.

C. Peer-Reviewed Manuscripts:

1. C.L. Murrant, **J.C. Frisbee**, N.E. Woodley and J.K. Barclay. The effect of NO and endothelin on skeletal muscle contractility change with contraction type and frequency. *Can. J. Physiol. Pharmacol.* 75:414-422, 1997.
2. **J.C. Frisbee** and J.K. Barclay. Microvascular hematocrit and permeability-surface area product in contracting canine skeletal muscle *in situ. Microvasc. Res.* 55:153-164, 1998.
3. **J.C. Frisbee.** Striated muscle microvascular hematocrit: the increase from rest to contraction. *Microvasc. Res.* 55:184-186, 1998.
4. **J.C. Frisbee** and J.H. Lombard. Chronic elevations in salt intake and reduced renal mass hypertension compromise mechanisms of arteriolar dilation. *Microvasc. Res.* 56:218-227, 1998.
5. **J.C. Frisbee** and J.K. Barclay. Microvascular hematocrit and permeability-surface area product during fatigue in canine skeletal muscle. *Microvasc. Res.* 57:203-207, 1999.
6. D.S. Weber, **J.C. Frisbee**, and J.H. Lombard. Selective potentiation of angiotensin-induced constriction of skeletal muscle resistance arteries by chronic elevations in dietary salt intake. *Microvasc. Res.* 57:310-319, 1999.
7. **J.C. Frisbee** and J.H. Lombard. Acute elevations in salt intake and reduced renal mass hypertension compromise mechanisms of arteriolar dilation. *Microvasc. Res.* 57:273-283, 1999
8. **J.C. Frisbee**, D.S. Weber, and J.H. Lombard. Chronic captopril administration decreases vasodilator responses in skeletal muscle arterioles. *Am. J. Hypertens.* 12: 705-715, 1999.
9. **J.C. Frisbee** and J.H. Lombard. Elevated oxygen tension inhibits flow-induced dilation of skeletal muscle arterioles. *Microvasc. Res.* 58:99-107, 1999.
10. **J.C. Frisbee** and J.H. Lombard. Development and reversibility of altered skeletal muscle arteriolar structure and reactivity with high salt diet and reduced renal mass hypertension. *Microcirculation* 6:215-226, 1999.
11. **J.C. Frisbee**, C.L. Murrant, B.A. Wilson and J.K. Barclay. The effect of acute polycythemia on function in the contracting canine skeletal muscle, *in situ. Med. Sci. Sports Exer.* 31:1293-1298, 1999.
12. **J.C. Frisbee** and J.H. Lombard. Increased intravascular pressure does not enhance skeletal muscle arteriolar constriction to oxygen and angiotensin II. *Microvasc. Res.* 59:176-180, 2000.
13. **J.C. Frisbee**, D.S. Weber, Y. Liu, J.A. DeBruin, and J.H. Lombard. Altered structure and mechanics of rat skeletal muscle resistance arteries with high salt diet and reduced renal mass hypertension. *Microvasc. Res.* 59:323-328, 2000.
14. **J.C. Frisbee** and J.H. Lombard. Reduced renal mass hypertension but not high salt diet, alters skeletal muscle arteriolar distensibility and myogenic responses. *Microvasc. Res.* 59:255-264, 2000.
15. **J.C. Frisbee**, J.R. Falck, and J.H. Lombard. Contribution of cytochrome P450-4A ω-hydroxylase to altered arteriolar reactivity with high salt diet and hypertension. *Am. J. Physiol. Heart Circ. Physiol.* 278:H1517-H1526, 2000.
16. **J.C. Frisbee** and J.H. Lombard. Alterations in skeletal muscle microvascular hematocrit with short term reduced renal mass hypertension. *Microvasc. Res.* 59:390-393, 2000.
17. **J.C. Frisbee** and J.H. Lombard. Short term angiotensin converting enzyme inhibition alters vascular tone and dilator reactivity in skeletal muscle microcirculation. *Am. J. Hypertens.* 13:389-395, 2000.
18. **J.C. Frisbee**, R.J. Roman, J.R. Falck, J.R. Linderman and J.H. Lombard. Impairment of flow-induced dilation of skeletal muscle arterioles with elevated oxygen in normotensive and hypertensive rats. *Microvasc. Res.* 60:37-48, 2000.
19. **J.C. Frisbee**, F.A. Sylvester and J.H. Lombard. Contribution of extrinsic factors and intrinsic vascular alterations to reduced arteriolar reactivity with high salt diet and hypertension. *Microcirculation* 7:281-289, 2000.
20. F.A Sylvester, **J.C. Frisbee**, and J.H. Lombard. Longitudinal differences in vascular control mechanisms in isolated resistance arteries of the rat cremaster muscle. *Microvasc. Res.* 60:160-167, 2000.
21. J.H. Lombard, **J.C. Frisbee**, A.S. Greene, A.G. Hudetz, R.J. Roman and P.J. Tonellato. Microvascular flow and tissue PO_2 in skeletal muscle of chronic reduced renal mass hypertensive rats. *Am. J. Physiol. Heart Circ. Physiol.* 279:H2295-H2302, 2000.
22. **J.C. Frisbee**, R.J. Roman, U. M. Krishna, J.R. Falck and J.H. Lombard. 20-HETE modulates myogenic activation of skeletal muscle arteries from hypertensive Dahl SS rats. *Am. J. Physiol. Heart Circ. Physiol.* 280:H1066-H1074, 2001.

23. **J.C. Frisbee**, R.J. Roman, J.R. Falck and J.H. Lombard. 20-HETE contributes to myogenic activation of skeletal muscle resistance arteries in normotensive Brown Norway and Sprague Dawley rats. *Microcirculation.* 8:45-55, 2001.
24. **J.C. Frisbee**, R.J. Roman, U. Murali Krishna, J.R. Falck and J.H. Lombard. Altered mechanisms of hypoxic dilation in skeletal muscle arteries between normotensive and hypertensive Dahl salt-sensitive rats. *Microcirculation.* 8:115-127, 2001.
25. **J.C. Frisbee**, R.J. Roman, J.R. Falck and J.H. Lombard. Relative contribution of cyclooxygenase and cytochrome P450 ω-hydroxylase-dependent pathways to hypoxic dilation of skeletal muscle resistance arteries. *J. Vasc. Res.* 38:305-314, 2001.

Internet Discussion Forum

26. **J.C. Frisbee** and D.W. Stepp. Impaired nitric oxide-dependent dilation of skeletal muscle arterioles in diabetic obese Zucker rats. *Am. J. Physiol. Heart Circ. Physiol.* 281:H1304-H1311, 2001.
27. **J.C. Frisbee.** Impaired dilation of skeletal muscle resistance arteries to reduced oxygen tension in the diabetic obese Zucker rat. *Am. J. Physiol. Heart Circ. Physiol.* 281:H1568-H1574, 2001.
28. **J.C. Frisbee**, F.A. Sylvester and J.H. Lombard. High salt diet impairs hypoxia-induced cAMP production and hyperpolarization in rat skeletal muscle resistance arteries. *Am. J. Physiol. Heart Circ. Physiol.* 281:H1808-H1815, 2001.
29. **J.C. Frisbee**, U. M. Krishna, J.R. Falck and J.H. Lombard. Role of prostanoids and 20-HETE in mediating oxygen-induced constriction of skeletal muscle resistance arteries. *Microvasc. Res.* 62:271-283, 2001.
30. D.W. Stepp and **J.C. Frisbee.** Augmented α-adrenergic constrictor sensitivity in the skeletal muscle circulation of the obese Zucker rat. *Am. J. Physiol. Heart Circ. Physiol.* 282:H816-H820, 2002.
31. **J.C. Frisbee** and J.H. Lombard. Parenchymal tissue cytochrome P450 4A enzymes contribute to oxygen-induced alterations in skeletal muscle arteriolar tone. *Microvasc. Res.* 63:340-343, 2002.
32. F.A. Sylvester, D.W. Stepp, **J.C. Frisbee** and J.H. Lombard. High salt diet depresses acetylcholine reactivity in proximal to NOS activation in cerebral arteries. *Am. J. Physiol. Heart Circ. Physiol.* 283:353-363, 2002.
33. **J.C. Frisbee**, K.G. Maier, J.R. Falck, R.J. Roman and J.H. Lombard. Hypoxic dilation of skeletal muscle resistance arterioles: an integration of signaling mechanisms. *Am. J. Physiol. Reg. Integ. Comp. Physiol.* 283:R309-319, 2002.
34. **J.C. Frisbee**, K.G. Maier and D.W. Stepp. Elevated oxidant stress contributes to enhanced myogenic activation of skeletal muscle microvessels of obese Zucker rats *Am. J. Physiol. Heart Circ. Physiol.* 283:H2160-H2168, 2002.
35. **J.C. Frisbee.** The regulation of *in situ* skeletal muscle arteriolar tone: interactions between two parameters. *Microcirculation* 9:443-462, 2002.
36. J.H. Lombard, F.A. Sylvester, S.A. Phillips and **J.C. Frisbee.** High salt diet impairs dilator responses of rat middle cerebral arteries to hypoxia and prostacyclin. *Am. J. Physiol. Heart Circ. Physiol.* 284:H1124-1133, 2003.
37. I. Drenjancevic-Peric, **J.C. Frisbee** and J.H. Lombard. Arteriolar responses to elevated PO_2 and vasodilator stimuli in SS.BN13 consomic rats and Dahl S hypertensive rats. *Hypertension* 41:1012-1015, 2003.
38. **J.C. Frisbee.** Remodeling of the skeletal muscle microcirculation increases resistance to perfusion in obese Zucker rats. *Am. J. Physiol. Heart Circ. Physiol.* 285:H104-H111, 2003
39. **J.C. Frisbee.** Impaired perfusion of skeletal muscle of obese Zucker rats. *Am. J. Physiol. Reg. Integ. Comp. Physiol.* 285:R1124-R1134, 2003.
40. D.W. Stepp, D.M. Pollock and **J.C. Frisbee.** Low-flow vascular remodeling in the metabolic Syndrome X. *Am. J. Physiol. Heart Circ. Physiol.* 286:H964-H970, 2004.
41. S.A. Phillips, I. Drenjancevic-Peric, **J.C. Frisbee** and J.H. Lombard. AT_1 receptor blockade alters mechanisms of hypoxia-induced dilation of skeletal muscle resistance arteries. *Am. J. Physiol. Heart Circ. Physiol.* 287:H545-H552, 2004.
42. **J.C. Frisbee.** Enhanced arteriolar α-adrenergic sensitivity impairs dilator responses and skeletal muscle perfusion in obese Zucker rats. *J. Appl. Physiol.* 97:764-772, 2004.
43. S.A. Phillips, F.A. Sylvester and **J.C. Frisbee.** Oxidant stress and constrictor reactivity impair cerebral artery dilation in obese Zucker rats. *Am. J. Physiol. Reg. Integ. Comp. Physiol.* 288:R522-R530, 2005.
44. **J.C. Frisbee.** Hypertension-independent rarefaction of the skeletal muscle microcirculation in the Zucker rat model of the metabolic syndrome. *Microcirculation.* 12:383-392, 2005
45. **J.C. Frisbee.** Reduced nitric oxide bioavailability contributes to skeletal muscle microvessel rarefaction in the metabolic syndrome. *Am. J. Physiol. Reg. Integ. Comp. Physiol.* 289:R307-R316, 2005.
46. D.P. Basile, D.L. Donohoe, S.A. Phillips and **J.C. Frisbee.** Enhanced skeletal muscle arteriolar reactivity to angiotensin II following recovery from ischemic acute renal failure. *Am. J. Physiol. Reg. Integ. Comp. Physiol.* 286:R1770-R1776, 2005.
47. **J.C. Frisbee.** Impaired hemorrhage tolerance in the metabolic syndrome. *J. Appl. Physiol.* 100:456-473, 2006.
48. **J.C. Frisbee.** Vascular adrenergic tone and structural narrowing constrain reactive hyperemia in skeletal muscle of obese Zucker rats. *Am. J. Physiol. Heart Circ. Physiol.* 290:H2066-H2074, 2006.
49. **J.C. Frisbee**, J. Balch Samora, J. Peterson and R. Bryner. Exercise training blunts microvascular rarefaction in the metabolic syndrome. *Am. J. Physiol. Heart Circ. Physiol.* 291:H2483-2492, 2006.
50. **J.C. Frisbee**, J. Balch Samora and D.P. Basile. Low vascular nitric oxide bioavailability-induced microvascular rarefaction is not associated with angiostatin production. *Microcirculation* 14:145-154, 2007.

51. J. Balch Samora, **J.C. Frisbee**, M.A. Boegehold. Growth-dependent changes in endothelial factors regulating arteriolar tone. *Am. J. Physiol. Heart Circ. Physiol.* 292:H207-H214, 2007.
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74. S.J. Frisbee, A.D. d'Audiffret, and **J.C. Frisbee**. Relationships between depressive symptoms, cardiovascular disease risk factors and inflammation in rural communities. *(American Heart Association, Epidemiology Council Meeting, 2007)*
75. J. Balch Samora, **J.C. Frisbee** and M.A. Boegehold. Hydrogen peroxide emerges as a regulator of arteriolar tone during microvascular network growth. *(Experimental Biology, 2007)*
76. J. Balch Samora, **J.C. Frisbee** and M.A. Boegehold. Increased myogenic responsiveness of skeletal muscle arterioles with juvenile growth. *(Experimental Biology, 2007)*
77. **J.C. Frisbee**, M.E. James, J.M. Muller-Delp and S.J. Frisbee. HMG-CoA reductase inhibitors improve microvascular outcomes in the metabolic syndrome independent of plasma cholesterol profile. *(Experimental Biology, 2007)*
78. **J.C. Frisbee**, M.E. James, A.G. Goodwill and C. Khamare. Arachidonic acid-induced vascular thromboxane generation in mouse models of atherothrombotic vascular disease. *(Experimental Biology, 2007)*
79. J. Peterson, S. Mannan, R. Bryner, **J.C. Frisbee** and S. Alway. The effects of obesity and exercise on myogenic regulatory factors. *(Experimental Biology, 2007)*
80. **J.C. Frisbee.** From hypoxic dilation to microvascular rarefaction: the evolution of AHA 0330194N. *(American Heart Association, Scientific Sessions 2006 – Research Symposium)*
81. **J.C. Frisbee,** A.G. Goodwill and S.J. Frisbee. Inflammation, nitric oxide bioavailability and the metabolic syndrome: interactions leading to microvascular rarefaction. *(Workshop on Mathematical Modeling of Microcirculation; Mathematical Biosciences Institute at Ohio State University)*
82. **J.C. Frisbee.** Blood flow regulation and peripheral vascular disease. *(Workshop on Mathematical Modeling of Microcirculation; Mathematical Biosciences Institute at Ohio State University)*
83. J. Balch Samora, **J.C. Frisbee** and M.A. Boegehold. Mechanisms of microvascular control during juvenile growth. *(World Congress for Microcirculation, 2007)*
84. C.B. Chambers, S.J. Frisbee, **J.C. Frisbee** and R.J. Crout. Dental health, cardiovascular disease and inflammation in adults and children. *(West Virginia University HSC van Liere Convocation/Research Day, 2007)*
85. K. MacGregor, S. Frisbee, A. d'Audiffret, P. Stapleton, **J.C. Frisbee**. Correlation between peripheral vascular function, markers of inflammation and depression in human subjects. *(WV-INBRE Program, Research Day, 2007)*
86. A.M. Mahmoud, P.A. Stapleton, **J.C. Frisbee**, O.M. Mukdadi. Non-invasive measurement of brachial wall mechanics during flow-mediated vasodilation using 2D ultrasound strain tensor imaging. *ASME (SBC) 2008*
87. **J.C. Frisbee**, A.G. Goodwill, P.A. Stapleton, M.E. James, R.W. Bryner, S.J. Frisbee. The metabolic syndrome and microvascular rarefaction: integrated model for nitric oxide bioavailability and inflammation. European Society for Microcirculation Annual Meeting; Budapest, Hungary, 2008 *(J. Vasc. Res. XX:XXX, 2008)*
88. A.G. Goodwill, M.E. James, P.A. Stapleton and **J.C. Frisbee.** Elevated thromboxane (TxA_2) production during hypercholesterolemia contributes to impaired arteriolar dilator reactivity. *(West Virginia University; Department of Physiology and Pharmacology; Julie Betschart Symposium, 2008)*
89. P.A. Stapleton, A.G. Goodwill, S.J. Frisbee, M.E. James and **J.C. Frisbee**. Relationships between peripheral vascular reactivity, inflammation and indices of depression in human subjects. *(West Virginia University; Department of Physiology and Pharmacology; Julie Betschart Symposium, 2008)*
90. S.J. Frisbee, C.B. Chambers, **J.C. Frisbee**, A.G. Goodwill and R.J. Crout. Dental habits related to adult cardiovascular disease and systemic inflammation. *(Annual Meeting of American Association of Dental Research, 2008)*
91. C.B. Chambers, S.J. Frisbee, **J.C. Frisbee**, A.G. Goodwill and R.J. Crout. Dental health, cardiovascular disease risk and systemic inflammation in children. *(Annual Meeting of American Association of Dental Research, 2008)*
92. **J.C. Frisbee**, A.G. Goodwill, M.E. James, R.W. Bryner and S.J. Frisbee. Microvascular adaptations to obesity and the metabolic syndrome. *(2008 American Physiological Society Intersociety Meeting: "The Integrative Biology of Exercise V") The Physiologist, December, 2008*
93. E. Isingrini, **J.C. Frisbee**, M. James, L. Pillai, P. Zimmerman and A. d'Audiffret. Chronic Stress and Endothelial Dysfunction: A Possible Link Between Depression and Vascular Disease. *Eastern Vascular Surgery Society, Annual Meeting 2008.*
94. T.R. Nurkiewicz, M. Donlin, A.F. Hubbs, A.G. Goodwill, **J.C. Frisbee**, B.T. Chen, D.G. Frazer and V. Castranova. Mechanistic links between the lung and the systemic microcirculation after nanoparticle exposure. *Soc. Occ. Ther. Annual Meeting, 2008.*
95. K.L. Sites, A.G. Goodwill, **J.C. Frisbee** and T.R. Nurkiewicz diesel exhaust exposure alters microvascular blood flow and wall shear rate. *Soc. Occ. Ther. Annual Meeting, 2008.*
96. A. Mahmoud, **J.C. Frisbee** and O.M. Mukdadi. Simple fast noninvasive technique for measuring brachial wall mechanics during flow mediated vasodilatation analysis. *SPIE – International Society for Optical Engineering Annual Meeting, 2008.*
97. C.L. Williamson, E.R. Dabkowski, R.W. Brock, **J.C. Frisbee** and J.M. Hollander. Protection from diabetes-associated apoptosis with heat shock protein 27 overexpression *(Experimental Biology, 2009).*

98. H. Vejandla, **J.C. Frisbee**, E.R. Dabkowski, J.M. Hollander, A. Kothur and R.W. Brock. Hyperglycemia-induced mitochondrial dysfunction and oxidant generation in murine renal microvascular endothelial cells is reversed by C-peptide. *(Experimental Biology, 2009).*
99. E.R. Dabkowski, C.L. Williamson, **J.C. Frisbee**, R.W. Brock, and J.M. Hollander. Distinct mitochondrial subpopulation response in a type 2 diabetic model. *(Experimental Biology, 2009).*
100. H. Vejandla, A. Kothur, E.R. Dabkowski, J.M. Hollander, **J.C. Frisbee** and R.W. Brock. C-peptide confers protection in renal cortical endothelial cells during type I diabetes by preventing the phosphorylation of glucose-6-phosphate dehydrogenase. *(Experimental Biology, 2009).*
101. A.G. Goodwill, J.M. Hollander, R.W. Brock, M.E. James and **J.C. Frisbee**. Vascular thromboxane generation restrains arteriolar hypoxic dilation in skeletal muscle of obese zucker rats. *(Experimental Biology, 2009).*
102. **J.C. Frisbee**, R.W. Brock and J.M. Hollander. Integration of dilator and constrictor pathways for arteriolar reactivity in the metabolic syndrome. *(Experimental Biology, 2009)*
103. A.G. Goodwill, P.A. Stapleton, M.E. James, A.C. d'Audiffret and **J.C. Frisbee**. Increased arachidonic acid-induced thromboxane generation impairs skeletal muscle arteriolar dilation with genetic dyslipidemia. *(Experimental Biology, 2009)*
104. P.A. Stapleton, A.C d'Audiffret, S.J. Frisbee, A.G. Goodwill, M.E. James and **J.C Frisbee**. Correlations between peripheral vascular function, inflammation and depression in human subjects. *(Experimental Biology, 2009)*
105. **J.C. Frisbee**, A.G. Goodwill, M.E. James, R.W. Brock, J.M. Hollander and S.J. Frisbee. Development of a predictive model for negative microvascular outcomes in the metabolic syndrome. *(Experimental Biology, 2009)*
106. A.C d'Audiffret, B. Jackson, D. Riggs, E. Insigrini, M.E. James, T.R. Nurkiewicz and **J.C Frisbee**. Psychological stress and endothelial dysfunction : a link between depression and vascular disease? *(Experimental Biology, 2009).*
107. W.A. Baseler, E.R. Dabkowski, C.L. Williamson, **J.C. Frisbee**, R.W. Brock and J.M. Hollander. Skeletal muscle mitochondrial subpopulation response in a type 2 diabetic mouse model. *(Experimental Biology, 2009).*
108. P.A. Stapleton, A.C d'Audiffret, S.J. Frisbee, A.G. Goodwill, M.E. James and **J.C Frisbee**. Peripheral vascular dysfunction, systemic inflammation and markers of clinical depression in human subjects. *(van Liere Research Day, West Virginia University HSC, 2009)*
109. A.G. Goodwill, J.M. Hollander, R.W. Brock, M.E. James and **J.C. Frisbee**. Vascular thromboxane generation restrains arteriolar hypoxic dilation in skeletal muscle of obese zucker rats. *(van Liere Research Day, West Virginia University HSC, 2009)*
110. J.A.L. Beckett, P.A. Stapleton, A.G. Goodwill, A.C. d'Audiffret and **J.C. Frisbee**. Correlations between chronic depression and peripheral vascular function: a translational approach. *(WV-INBRE Program, Research Day, 2009)*
111. J A.L. Beckett, M. E. James, P.A Stapleton, A. G. Goodwill, A.C. d'Audiffret and **J.C. Frisbee**. Insulin Resistance-Independent Impairments to Arterial Endothelial Function with Depressive Symptoms in Mice. *(Experimental Biology, 2010).*
112. P. A. Stapleton, A. G. Goodwill, M. R. Morrisette, M. E. James and **J.C. Frisbee**. Impaired Arteriolar Dilation in a Mouse Model of Familial Hypercholesterolemia: Impact of Chronic Exercise and Anti-Cholesterol Therapy. *(Experimental Biology, 2010).*
113. **J.C. Frisbee**, F. Wu and D.A. Beard. Altered Spatio-Temporal Microvascular Blood Flow Distribution Patterns in Skeletal Muscle with Metabolic Syndrome. *(Experimental Biology, 2010).*
114. A.G. Goodwill, P.A. Stapleton, S.J. Frisbee, M.E. James and **J.C. Frisbee**. Increased Vascular Generation of Thromboxane A_2: an Initiating Condition for Microvascular Rarefaction in Obese Zucker Rats? *(Experimental Biology, 2010).*
115. F. Wu, **J.C. Frisbee** and D.A. Beard. A Stochastic Model of Flow Bifurcation Predicts Altered Spatial Flow Distribution in Obese Zucker Rats. *(Experimental Biology, 2010).*
116. J.A.L. Beckett, P.A. Stapleton, A.G. Goodwill, A.C. d'Audiffret and **J.C. Frisbee**. Correlations between chronic depression and peripheral vascular function: a translational approach. *(Undergraduate Research Day at the Capitol/WV-INBRE Program, 2010)*
117. S.J. Frisbee, P.A. Stapleton, A.C d'Audiffret, A.G. Goodwill and **J.C Frisbee**. Correlations between peripheral vascular function, inflammation and depression in human subjects. *(West Virginia University School of Dentistry Research Day/American Association for Dental Research Regional Chapter; 2010)*
118. A.G. Goodwill, P.A. Stapleton, S.J. Frisbee and **J.C. Frisbee**. Obesity-induced increased vascular thromboxane A_2 generation: an initiating stimulus for microvascular rarefaction? *(World Congress for Microcirculation, Paris, France; 2010).*
119. **J.C. Frisbee**, F.Wu and D.A. Beard. Spatio-temporal microvascular perfusion distribution in skeletal muscle is altered with obesity and insulin resistance. *(World Congress for Microcirculation, Paris, France; 2010)*
120. **J.C. Frisbee**, A.G. Goodwill, P.A. Stapleton, S.J Frisbee and A.C. d'Audiffret. Aspirin resistance with genetic dyslipidemia: contribution of vascular thromboxane generation. *(World Congress for Microcirculation, Paris, France; 2010)*
121. T.R. Nurkiewicz, J. Yi, T.L. Knuckles, J.T. Butcher, H.A. O'Leary, G. Audet, V.C Minarchick, K.L. Porter, I.M. Olfert, R.W. Brock, and **J.C. Frisbee**. Pulmonary nanoparticle inhalation and metabolic syndrome: microvascular consequences in a double-hit model. *(World Congress for Microcirculation, Paris, France; 2010)*
122. Y-C. Lin, J. Huang, H. Kan, **J.C. Frisbee**, and H-G. Yu. Disrupted inactivation of cardiac L-type calcium channel in obese Zucker rat. *(American Heart Association, Scientific Sessions 2010)*
123. J.A.L. Beckett, P.A. Stapleton, A.G. Goodwill, A.C. d'Audiffret, S.J. Frisbee and **J.C. Frisbee**. Correlations between chronic depression and peripheral vascular function: a translational approach. *(3^{nl} Biennial IDeA Research Symposium, Bethesda, MD, 2010)*
124. S.J. Frisbee, **J.C. Frisbee**, A. Shankar, S.S. Knox and A.M. Ducatman. Contribution of Dyslipidemia vs. Obesity to Inflammation in Children. (American Heart Association; Epidemiology Council Sessions, 2010)
125. S.J. Frisbee, **J.C. Frisbee**, A. Shankar, S.S. Knox and A.M. Ducatman. Associations between obesity and obesity related systemic inflammation and markers of immune function in children. (American Heart Association; Epidemiology Council Sessions, 2010)
126. A.G. Goodwill, J.T. Butcher and **J.C. Frisbee**. TNF-α is a contributor to vascular dysfunction and skeletal muscle microvascular rarefaction in the obese zucker rat *(Experimental Biology 2011, Washington, DC)*
127. J.T. Butcher, A.G. Goodwill and **J.C. Frisbee**. Differential impact of myogenic activation on dilator responses in cerebral and skeletal muscle resistance arterioles of obese zucker rats. *(Experimental Biology 2011, Washington, DC)*

128. **J.C. Frisbee**, F. Wu, and D.A. Beard. Spatial heterogeneity in skeletal muscle microvascular perfusion distribution is increased in the metabolic syndrome. *(Experimental Biology 2011, Washington, DC)*

129. **J.C. Frisbee**, A.G. Goodwill, J.T. Butcher, and I. M. Olfert. Divergence between arterial perfusion and fatigue resistance in skeletal muscle in the metabolic syndrome. *(Experimental Biology 2011, Washington, DC)*

130. F. Wu, D.A. Beard, and **J.C. Frisbee**. Computational analyses of intravascular tracer washout reveal altered capillary-level flow distributions in obese Zucker rats. *(Experimental Biology 2011, Washington, DC)*

131. T.R. Nurkiewicz, L. Kang, J.T. Butcher, H.A. O'Leary, R.W. Brock, **J.C. Frisbee**, M.A. Boegehold and J. Yi. Pulmonary nanoparticle inhalation and microvascular function: influence of metabolic syndrome and age. *(Experimental Biology 2011, Washington, DC)*

132. A.G. Goodwill and **J.C. Frisbee.** Temporal progression of microvascular rarefaction in the metabolic syndrome. *(Experimental Biology 2011, Washington, DC)*

133. H.A. O'Leary, A. Kothur, S.B. Fournier, A.G. Goodwill, **J.C. Frisbee** and R.W. Brock. Effect of remote ischemic preconditioning on hepatic parenchymal and microvascular damage in obesity. *(Experimental Biology 2011, Washington, DC)*

134. H.A. O'Leary, A. Kothur, A.G. Goodwill, **J.C. Frisbee** and R.W. Brock. Alterations in hepatic tumor cell colonization during obesity. *(Experimental Biology 2011, Washington, DC)*

135. G.N. Audet, C.E. Nichols, J.T. Butcher, **J.C. Frisbee** and I.M. Olfert. Aging disrupts the balance between positive and negative angiogenic factors in skeletal muscle. *(Experimental Biology 2011, Washington, D.C.)*

136. S.J. Frisbee, **J.C. Frisbee** and A.M. Ducatman. Cardiometabolic abnormalities, systemic inflammation and oxidative stress in children. *(AHA Epidemiology and Prevention Scientific Sessions, 2012, San Diego, CA)*

137. S.J. Frisbee, **J.C. Frisbee** and A.M. Ducatman. Obesity and non-alcoholic fatty liver disease in children. *(AHA Epidemiology and Prevention Scientific Sessions, 2012, San Diego, CA)*

138. A.G. Goodwill, J.T. Butcher, R.W. Brock, I.M. Olfert and **J.C. Frisbee.** Early microvessel loss in the metabolic syndrome. *(Experimental Biology 2012, San Diego, CA)*

139. J.T. Butcher, A.G. Goodwill, D.A. Beard and **J.C. Frisbee.** Decreased temporal activity at microvascular bifurcations exacerbates perfusion heterogeneity in skeletal muscle in the metabolic syndrome. *(Experimental Biology 2012, San Diego, CA)*

140. J.T. Butcher, A.G. Goodwill and **J.C. Frisbee**. Temporal activity at skeletal muscle microvascular bifurcations is reduced in metabolic syndrome: exacerbation of spatial perfusion abnormalities. (Joint Meeting of MCS/BMS 2012, Oxford, UK)

141. S.C. Stanley, J.T. Butcher, S.J. Frisbee, A. d'Audiffret and J.C. Frisbee. Depressive Symptoms, Inflammation and Microvascular Dysfunction: Presence of a Gender Disparity. (Experimental Biology 2013, Boston, MA) ***Winner of Research Recognition Award from Cardiovascular Section of American Physiological Society***

142. S.C. Stanley, J.T. Butcher, S.J. Frisbee, A. d'Audiffret and J.C. Frisbee. Chronic Depressive Symptoms and Gender: Impact on Conduit Vascular Outcomes. (Experimental Biology 2013, Boston, MA)

143. S.C. Stanley, S.J. Frisbee, A. d'Audiffret, N. Pagano and J.C. Frisbee. Differences in the association between stress, depression and cardiovascular disease risk factors in children and adults. (Experimental Biology 2013, Boston, MA) ***Highlighted for Symposium Lecture***

144. J.T. Butcher, S.C. Stanley and **J.C. Frisbee**. Differential impact of dilator stimuli on increased myogenic activation of cerebral and skeletal muscle resistance arterioles in obese Zucker rats. (Experimental Biology 2013, Boston, MA)

145. J.T. Bucher, A.G. Goodwill, S.C. Stanley and **J.C. Frisbee**. Blunted temporal activity of microvascular perfusion heterogeneity in metabolic syndrome: a new attractor for peripheral vascular disease? (Experimental Biology 2013, Boston, MA)

146. S.C. Stanley, J.T. Butcher, S.J. Frisbee, A. d'Audiffret and **J.C. Frisbee**. Chronic Stress, Depressive Symptoms and Gender: Diverse Impacts on Vascular Function. (International Union of Physiological Sciences 2013, Birmingham, UK)

147. J.T. Bucher, A.G. Goodwill, S.C. Stanley and **J.C. Frisbee**. Altered Spatial Perfusion Distribution and Temporal Activity at Bifurcations Impairs Microvascular Perfusion Distribution in Metabolic Syndrome: Does a Shifted Attractor Define Peripheral Vascular Disease? (International Union of Physiological Sciences 2013, Birmingham, UK)

148. S.D. Brooks, **J.C. Frisbee** and T.L. Barr. "ARG1 and S100a12 Expression are Correlated with Immune Suppression after Ischemic Stroke. (NAVBO Vasculata 2013, San Diego, CA)

149. S.C. Stanley, J.T. Butcher, S.J. Frisbee, A. d'Audiffret, S.L. Brooks and **J.C. Frisbee**. Chronic Stress, Depressive Symptoms and Gender: Diverse Impacts on Vascular Function. (NAVBO/MCS Joint Fall Meeting 2013, Cape Cod, MA)

150. J.T. Bucher, A.G. Goodwill, S.C. Stanley and **J.C. Frisbee**. Altered Spatial Perfusion Distribution and Temporal Activity at Bifurcations Impairs Microvascular Perfusion Distribution in Metabolic Syndrome: Does a Shifted Attractor Define Peripheral Vascular Disease? (NAVBO/MCS Joint Fall Meeting 2013, Cape Cod, MA)

151. I.S. Fancher, J.T. Butcher, **J.C. Frisbee** and G.M. Dick. Mechanism of inhibition of delayed rectifier K+ current by DPO-1 in smooth muscle and its functional relevance: depolarization and vasoconstriction. (Appalachian Regional Cell Conference: 2013)

152. S.C. Stanley, S.D. Brooks, J.T. Butcher, A. d'Audiffret, P.R. Skaff, P.D. Chantler, **J.C. Frisbee**. Divergence in depressive symptom severity and vascular dysfunction with gender in rats with unpredictable chronic mild stress (Experimental Biology, 2014 San Diego, CA)

153. S.D. Brooks, S.C. Stanley, J.T. Butcher, A. d'Audiffret, P.R. Skaff, P.D. Chantler, **J.C. Frisbee**. Severity of behavioral impairments and vascular dysfunction with chronic stress/depressive symptoms is increased by metabolic syndrome. (Experimental Biology, 2014 San Diego, CA)

154. S.C. Stanley, S.D. Brooks, J.T. Butcher, A. d'Audiffret, P.R. Skaff, P.D. Chantler, **J.C. Frisbee**. Protection against depressive symptom-induced impairments to cerebral vascular reactivity in female versus male rats. (Experimental Biology, 2014 San Diego, CA)

155. S.D. Brooks, S.C. Stanley, J.T. Butcher, A. d'Audiffret, P.R. Skaff, P.D. Chantler, **J.C. Frisbee**. Loss of gender-based protection against chronic stress-induced impairments to cerebovascular reactivity by pre-existence of metabolic syndrome. (Experimental Biology, 2014 San Diego, CA)

156. J.T. Butcher, F.Wu, P.D. Chantler, S.D. Brooks, S.C. Stanley, **J.C. Frisbee**. Integration of microvascular reactivity, structure and hemodynamics for skeletal muscle function in metabolic syndrome. (Experimental Biology, 2014 San Diego, CA)
157. S.D. Brooks, S.C. Stanley, J.T. Butcher, P.D. Chantler, A. d'Audiffret, **J.C. Frisbee**. Gender- and metabolic syndrome-based divergence in behavioral responses to unpredictable chronic mild stress. (Experimental Biology, 2014 San Diego, CA)
158. J.T. Butcher, **J.C. Frisbee** and G.M. Dick. DPO-1-sensitive K^+ channels control the tone and reactivity of resistance-sized arterioles from brain and skeletal muscle. (Experimental Biology, 2014 San Diego, CA)
159. J.T. Butcher, S.C. Stanley, S.D. Brooks, P.D. Chantler, F. Wu, **J.C. Frisbee**. Impaired skeletal muscle fatigue resistance in metabolic syndrome is associated with alterations in microvascular hematocrit levels and variability. (Experimental Biology, 2014 San Diego, CA)
160. **J.C. Frisbee** and F. Wu. Computational analyses of oxygen transport suggest that perfusion heterogeneity, not overall oxygen delivery, limites muscle performance in metabolic syndrome. (Experimental Biology, 2014 San Diego, CA)
161. P.D. Chantler, S.B. Fournier, E.R. DeVallance, J.T. Butcher, **J.C. Frisbee**. Altered wall mechanics of conduit arteries of obese Zucker rats with progression of metabolic syndrome. (Experimental Biology, 2014 San Diego, CA)
162. P.R. Skaff, S.C. Stanley, S.D. Brooks, J.T. Butcher, **J.C. Frisbee**. Gender-based protection against microvascular dysfunction with depressive symptoms in mice (Experimental Biology, 2014, San Diego, CA)
163. S.B. Fournier, D.A. Donley, **J.C. Frisbee**, S.E. Alway, P.D. Chantler. Acute effect of reseveratrol on measures of arterial function in metabolic syndrome. (American College of Sports Medicine, 2014, Atlanta, GA)
164. E.R. DeVallance, P.D. Chantler, A.G. Goodwill, J.T Butcher, I.M Olfert, R.W. Brock, **J.C.Frisbee**. Temporally distinct mechanisms for skeletal muscle microvascular rarefaction in metabolic syndrome. (Experimental Biology, 2014 San Diego, CA)
165. S.C. Stanley, S.D. Brooks, J.T. Butcher, A. d'Audiffret, P.R. Skaff, P.D. Chantler, **J.C. Frisbee**. Protection against depressive symptom-induced impairments to cerebral vascular reactivity in female versus male rats. (Van Liere Research Day, WVU HSC, 2014)
166. S.D. Brooks, S.C. Stanley, J.T. Butcher, A. d'Audiffret, P.R. Skaff, P.D. Chantler, **J.C. Frisbee**. Loss of gender-based protection against chronic stress-induced impairments to cerebovascular reactivity by pre-existence of metabolic syndrome. (Van Liere Research Day, WVU HSC, 2014)
167. K. Grogg, R.D. Parker, **J.C. Frisbee**. Modeling the spread of cardiovascular disease risk using infectious disease epidemiology. (Van Liere Research Day, WVU HSC, 2014)
168. P.A. Stapleton, V.C. Minarchik, **J.C. Frisbee**, T.R. Nurkiewicz. Engineered nanomaterial exposure and the metabolic syndrome. (Society of Toxicology Annual Meeting 2014, Phoenix, AZ)
169. **J.C. Frisbee**, J.T. Butcher, F. Wu, S.J. Frisbee and P.D. Chantler Altered Perfusional Control at Bifurcations Impairs Skeletal Muscle Microvascular Blood Flow Distribution in Metabolic Syndrome and Contributes to Poor Muscle Performance (Physiological Society Annual Meeting, 2014, London, UK)
170. **J.C. Frisbee**. Altered Spatial Perfusion Distribution and Temporal Activity at Bifurcations Impairs Microvascular Blood Flow Distribution in Metabolic Syndrome: Does a Shifted Attractor Define Peripheral Vascular Disease? (European College of Sport Science Annual Meeting, 2014, Amsterdam, Netherlands)
171. J.T. Butcher, F.Wu, P.D. Chantler, S.D. Brooks, S.C. Stanley, **J.C. Frisbee**. Integration of microvascular reactivity, structure and hemodynamics for skeletal muscle function in metabolic syndrome. (NISBRE IDeA National Meeting 2014; Washington, DC)
172. **J.C. Frisbee,** J.T. Butcher, P.D. Chantler, S.J. Frisbee, S.D. Brooks, S.C. Stanley and F. Wu. "A Progressive Loss of System Flexibility in the Microcirculation: the Critical Contributor to Poor Organ Performance in the Metabolic Syndrome?, Mathematical Biosciences Institute (The Ohio State University); Summer Quarter Session: "Workshop on Molecular to Systems Physiology", Columbus, OH, 2014
173. T.L. Barr, P.D. Chantler, A. Petrone, **J.C. Frisbee**, J.W. Simpkins. Arginase-1 is a novel biomarker of post –stroke immune suppression (American heart Association; Stroke Council Meetings, 2015)
174. E DeVallance, K Lee, K Grogg, C Moore, K LeMaster, R Hull, A Brader, L Tabone, K Rosati, R Quinlin, **JC Frisbee**, PD Chantler. Improvement in cardiac function 1-week post gastric by-pass surgery. (Experimental Biology, 2015, Boston, MA)
175. E DeVallance, K Lee, K Grogg, C Moore, K LeMaster, R Hull, A Brader, L Tabone, K Rosati, R Quinlin, **JC Frisbee**, PD Chantler. Rapid Change in Afterload After Gastric By-Pass Surgery (Experimental Biology, 2015, Boston, MA)
176. K Lee[1], E Devallance[1, 2], K Grogg[1,2], R Mason[1,2], R Hull[2,3], K Rosati[4], R Quinlin[4], J Frisbee[2,5], Paul Chantler. Effect of Gastric Bypass Surgery on Endothelial function and Heart Rate Variability (Experimental Biology, 2015, Boston, MA)
177. E DeVallance, K Lee, K Grogg, C Moore, K LeMaster, R Hull, A Brader, L Tabone, K Rosati, R Quinlin, **JC Frisbee**, PD Chantler. Gastric bypass surgery reduces afterload and improves cardiac function. (International Obesity Summit, London England April 2015)
178. K.A. Grogg, A.C. d'Audiffret, **J.C. Frisbee**, P.D. Chantler, S.J. Frisbee. Depressive Symptom Severity: A Positive Correlation with Cardiovascular Disease Risk Factor Severity and Pro-Inflammatory Biomarker Profiles? (WVU van Liere Research Day, 2015)
179. E DeVallance, K Lee, K Grogg, K LeMasters, R Hull, A Brader, L Tabone, K Rosati, R Quinlin, **J Frisbee**, PD Chantler. Rapid Recovery of Cardiac Efficiency with Reduction in Afterload a Week After Gastric Bypass Surgery. (WVU van Liere Research Day, 2015)
180. S.D Brooks, S.C. Stanley, P. Chantler, R. Brock, **J.C. Frisbee**. Characterizing Vascular and Renal Dysfunction in the face of Hypertension and Heart Failure. (WVU van Liere Research Day, 2015)
181. S.C. Stanley, S.D. Brooks, A. d'Audiffret, C.M. Leon, **J.C. Frisbee**. Metabolic Syndrome Eliminates Vascular Protection against Chronic Stress in Female Rats. (WVU van Liere Research Day, 2015)
182. S.D. Brooks, S.C. Stanley, A. d'Audiffret, C.M. Leon, **J.C. Frisbee**. Metabolic Syndrome and Chronic Stress: Convergent Pathologies lead to Severe Vascular Impairment. (Experimental Biology, 2015, Boston, MA)
183. S.D. Brooks, S.C. Stanley, P. Chantler, R. Brock, **J.C. Frisbee**. Severe Cerebrovascular Dysfunction in a Hypertensive Heart Failure Model. (Experimental Biology, 2015, Boston, MA)
184. S.D. Brooks, **J.C. Frisbee**, P.D. Chantler, M. Olfert, R.W. Brock Characterizing renal dysfunction in the face of hypertension and heart failure. (Experimental Biology, 2015, Boston, MA)

185. C.M. Leon, S.D. Brooks, S.C. Stanley, A. Clegg, **J.C. Frisbee.** Mechanisms of Vascular Dysfunction in Depression and Metabolic Syndrome. (Experimental Biology, 2015, Boston, MA)
186. S.C. Stanley, S.D. Brooks, A. d'Audiffret, C.M. Leon, **J.C. Frisbee.** Metabolic Syndrome Eliminates Vascular Protection against Chronic Stress in Female Rats. (Experimental Biology, 2015, Boston, MA)
187. K.A. Grogg, A. C. d'Audiffret, **J.C. Frisbee**, P.D. Chantler; S.J. Frisbee, C.D. Shrader. Depressive Symptom Severity: A Positive Correlation with Cardiovascular Disease Risk Factor Severity and Pro-Inflammatory Biomarker Profiles? North American Primary Care Research Group Annual Meeting, 2015, Cancun, Mexico
188. R.Jessmer, K. Mandler, R. Bryner, P. Chantler, **J. Frisbee**, M. Olfert. Impact of Exercise Training on Skeletal Muscle Angiogenesis in Obese Stressed Zucker Rats (Appalachian Regional Cell Conference; 2015)
189. L.M. Salati, **J.C. Frisbee**, S.J. Frisbee, T.C. Hulsey, S.L. Hodder. Development and implementation of a PhD program in Clinical and Translational Science (CTS) (GREAT Meeting (Graducate Education), 2015)
190. Branyan, K.W., Brooks S., Asano, S., **Frisbee, J.C.**, Chantler, P.D. Exercise Improves Vascular Dilator Reactivity in Chronically Stressed Rats with Pre-existing Metabolic Syndrome, ACSM; 2015
191. DeVallance, E., Branyan, KW., Seidomridge, A., Lemaster, KA., Skinner, RC., Asano, S., Setola, V., **Frisbee, JC.**, Chantler, PD. Perivascular Adipose Tissue Diminishes Nitric Oxide Bioavailability in Metabolic Syndrome ACSM, 2015
192. Skinner R.C. Branyan, K.W., Brooks, S.D. , Asano, S., Hoskinson, H.N., Mancini, B.B., Olfert, I.M., Bryner, R.W., **Frisbee, J.C.**, P.D. Chantler. Exercise as a treatment for peripheral vascular dysfunction caused by metabolic syndrome and depression. ACSM, 2015

PRESENTATIONS/SEMINARS/INVITED SPEAKERSHIPS

1. "Polycythemia and skeletal muscle fatigue" National Simulation Resource, University of Washington, Seatttle, WA; 1996
2. "Endothelial products and skeletal muscle function" Department of Bioengineering, University of Washington, Seattle, WA; 1997
3. "Microvascular dyamics in skeletal muscle" Department of Biology, Central Connecticut State University, New Britain, CT; 1997
4. "Microvascular hematocrit and permeability-surface area product in skeletal muscle" Department of Physiology, Medical College of Wisconsin, Milwaukee, WI; 1997
5. "Dietary salt intake, hypertension and the microcirculation" Department of Biological Sciences, Bridgewater State University, Bridgewater, MA; 1998
6. "Chronic captopril treatment decreases skeletal muscle arteriolar vasodilator reactivity" *Midwest Physiological Society*, Medical College of Wisconsin, Milwaukee, WI; 1998
7. "Increased intravascular pressure does not enhance skeletal muscle arteriolar constriction to oxygen and angiotensin II" *Midwest Physiological Society*, University of Wisconsin, Madison, WI; 1999
8. "Role of cytochrome P450 and 20-HETE in regulating microvascular reactivity" Department of Biomedical Sciences, Grand Valley State University, Grand Rapids, MI; 2000
9. "Arachidonic acid metabolites and the regulation of vascular tone" Department of Biological Sciences, Western Michigan University; Kalamazoo, MI; 2000
10. "20-HETE modulates myogenic activation of skeletal muscle resistance arteries from Sprague Dawley and Brown Norway rats" *Midwest Physiological Society*, Chicago Medical School; Chicago, IL; 2000
11. "Contribution of cytochrome P450 4A enzymes to myogenic activation and hypoxic dilation of skeletal muscle arteries of normotensive and hypertensive Dahl rats" *Jackson Cardiovascular-Renal Meeting*, University of Mississippi Medical Center, Jackson, MS; 2000
12. "Altered skeletal muscle microvessel structure and reactivity in the obese Zucker rat" Department of Physiology, Medical College of Wisconsin, Milwaukee, WI; 2000
13. "The obese Zucker rat: a model of oxidant stress and microvascular remodeling" Bassett Research Institute, The Mary Imogene Bassett Hospital, Cooperstown, NY; 2001
14. "Hypoxic dilation of skeletal muscle resistance arteries: integration of signaling pathways" Department of Physiology, Medical College of Wisconsin, Milwaukee, WI; 2001
15. "Oxygen-dependent regulation of vascular tone – multiple pathways to a coordinated response" Procter and Gamble Health Care Research Center; Cincinnati, OH; 2001
16. "Oxidant stress-induced enhancement of myogenic activation of skeletal muscle resistance arteries of obese Zucker rats" Myogenic Centennial Conference; Burlington, VT; 2002
17. "Impaired skeletal muscle microvascular function in the obese Zucker rat" Department of Physiology, Queens University School of Medicine, Kingston, Ontario, Canada; 2002
18. "Microvascular insufficiency in skeletal muscle of obese Zucker rats" Department of Physiology, Medical College of Wisconsin, Milwaukee, WI; 2003
19. "Impaired performance and active hyperemia of *in situ* skeletal muscle of obese Zucker rats" Experimental Biology, San Diego, CA; 2003
20. "The obese Zucker rat model of 'Syndrome X': Alterations in skeletal muscle microcirculatory structure and function" Department of Physiology, University of Minnesota-Duluth School of Medicine, Duluth, MN; 2003
21. "Pulmonary hypertension in the metabolic Syndrome X" Veterans Affairs Medical Center, Milwaukee, WI; 2003
22. "Peripheral Ischemia in the Obese Zucker Rat: Lessons from 'Hemo the Magnificent' and Marshall McLuhan" Department of Physiology, Medical College of Wisconsin, Milwaukee, WI; 2004
23. "Muscle Perfusion in the Metabolic Syndrome" Department of Physiology and Pharmacology, West Virginia University School of Medicine, Morgantown, WV; 2004
24. "Impaired active hyperemia in skeletal muscle of obese Zucker rats" Division of Exercise Physiology, West Virginia University School of Medicine, Morgantown, WV; 2004

25. "Peripheral Ischemia in the Obese Zucker Rat: Lessons from 'Hemo the Magnificent' and Marshall McLuhan" Department of Medical Physiology, Texas A&M University School of Medicine; Temple/College Station, TX; 2004
26. "Hypertension-independent microvascular rarefaction in skeletal muscle of obese Zucker rats" Experimental Biology, Washington, D.C.; 2004
27. "Superoxide scavengers improve impaired dilator reactivity of cerebral resistance arteries of obese Zucker rats" Experimental Biology, Washington, D.C.; 2004 (with S.A. Phillips)
28. "Peripheral microvessel density in the metabolic syndrome: why do microvessels disappear?" Center for Interdisciplinary Research in Cardiovascular Sciences, West Virginia University School of Medicine; Morgantown, WV, 2004
29. "Contribution of microvascular rarefaction to impaired skeletal muscle perfusion in the metabolic syndrome" Canadian Federation of Biological Sciences; University of Guelph, Ontario, Canada; 2005
30. "The development of pulmonary hypertension in the obese Zucker rat" Center for Interdisciplinary Research in Cardiovascular Sciences, West Virginia University School of Medicine; Morgantown, WV, 2005
31. "Nitric oxide bioavailability and microvascular dysfunction in the Zucker rat model of the metabolic syndrome" Department of Cardiology Grand Rounds; West Virginia University School of Medicine; Morgantown, WV, 2005
32. "Chronic exercise improves skeletal muscle microvessel density in obese Zucker rats via reduced inflammation, not matrix metalloproteinase function" American Heart Association; Atherosclerosis, Thrombosis and Vascular Biology Council Meeting; "Obesity, Exercise and Nutrition" Symposium Denver, CO, 2006
33. "The Dark Tower or Sesame Street? Vascular Dysfunction in the Metabolic Syndrome" Division of Exercise Physiology, West Virginia University School of Medicine; Morgantown, WV, 2006
34. "Peripheral Ischemia in the Metabolic Syndrome: Multiple Inputs for a Negative Outcome" AstraZeneca Research Laboratories, Macclesfield, UK; 2006
35. "Perfusion Limitations in Obese Zucker Rats during Muscle Contraction: Mechanisms and Interventions" Department of Sport and Exercise Sciences, University of Birmingham; Birmingham, UK; 2006
36. "Reduced Muscle Perfusion in the Metabolic Syndrome" Invited Symposium Speaker "Transendothelial Transport Limitations in Insulin Resistant Skeletal Muscle"; European College of Sports Sciences Annual Meeting; Lausanne, Switzerland; 2006
37. "Microvasculopathy in the Metabolic Syndrome: Translating from Rodents to Humans" Department of Cardiology Grand Rounds; West Virginia University School of Medicine; Morgantown, WV, 2006
38. "Microvascular Dysfunction in the Metabolic Syndrome: Contribution of Chronic Inflammation" American Association of Dental Research – Scientific Research Group (West Virginia Section); West Virginia University School of Dentistry; Morgantown, WV, 2006
39. "The Metabolic Syndrome and Microvascular Rarefaction: Interactions between Nitric Oxide, Superoxide and Inflammation" University of Pittsburgh School of Medicine; Endocrine and Metabolism Research Conference, Pittsburgh, PA, 2006
40. "Peripheral Microvascular Rarefaction in the Metabolic Syndrome: Dyslipidemia and Inflammation"; Center for Interdisciplinary Research in Cardiovascular Sciences, West Virginia University School of Medicine; Morgantown, WV, 2006
41. "From Hypoxic Dilation to Microvascular Rarefaction: the Evolution of AHA 0330194N"; American Heart Association, Scientific Sessions Research Symposium; Chicago, IL, 2006
42. "Blood Flow Regulation and Peripheral Vascular Disease"; Featured Lecture, Mathematical Biosciences Institute (The Ohio State University); Winter Quarter Session: "Blood Flow in the Microcirculation: Function, Regulation and Adaptation", Columbus, OH, 2007
43. "The Study of Perfusion in Peripheral Vascular Disease: How Can We do Better?"; Center for Interdisciplinary Research in Cardiovascular Sciences, West Virginia University School of Medicine; Morgantown, WV, 2007
44. "Microvascular Rarefaction in the Metabolic Syndrome: Contribution of Nitric Oxide and Inflammation"; Symposium Lecture; World Congress for Microcirculation; Milwaukee, WI, 2007
45. "The Metabolic Syndrome and Microvascular Rarefaction: Integrated Model for Nitric Oxide Bioavailability and Inflammation"; Symposium Lecture; European Society for Microcirculation Annual Meeting; Budapest, Hungary, 2008
46. "Noninvasive Measurement of Brachial Wall Mechanics During Flow-Mediated Vasodilation Using 2D Ultrasound Strain Tensor Imaging"; Vascular Mechanics Symposium Lecture; American Society Biomedical Engineering Summer Conference; Marco Island, Fl, 2008 *(given by Sam Mukdadi)*
47. "Microvascular Rarefaction in the Metabolic Syndrome: Contribution of Nitric Oxide and Inflammation"; Department of Medical Pharmacology and Physiology, The University of Missouri-Columbia, Columbia, MO; 2008
48. "Altered Arteriolar Reactivity in Mouse Models of Genetic Dyslipidemia"; Center for Interdisciplinary Research in Cardiovascular Sciences, West Virginia University School of Medicine; Morgantown, WV, 2008
49. "Microvascular Adaptations to Obesity and the Metabolic Syndrome"; Invited Lecture; American Physiological Society Intersociety Meeting; "The Integrative Biology of Exercise V"; Hilton Head, SC, 2008.
50. "Research Ethics in a Capitalist Society"; Invited Lecture, Department of Marketing and Consumer Studies, University of Guelph, Guelph, Ontario, Canada; 2008
51. "The Development of an Accurate Spatio-Temporal Model for Negative Microvascular Outcomes in the Metabolic Syndrome" ; Center for Interdisciplinary Research in Cardiovascular Sciences, West Virginia University School of Medicine; Morgantown, WV, 2008
52. "Spatio-temporal Analyses of Microvascular Rarefaction in the Obese Zucker Rat"; Department of Molecular and Cellular Physiology; Louisiana State University Health Sciences Center, Shreveport, LA, 2009.
53. "Integration of Arteriolar Reactivity for Microvascular Perfusion in the Metabolic Syndrome"; Center for Cardiovascular and Respiratory Sciences, West Virginia University School of Medicine; Morgantown, WV, 2009
54. "Microvascular Dysfunction in Obesity and the Metabolic Syndrome" Department of Cardiology Grand Rounds; West Virginia University School of Medicine; Morgantown, WV, 2009

55. "Peripheral Vascular Disease in Obesity/Insulin Resistance: Lessons from Physiology, Pathology, Fractal Geometry, Behavioral Psychology, Microeconomics"; Center for Cardiovascular and Respiratory Sciences, West Virginia University School of Medicine; Morgantown, WV, 2009
56. "Microvascular Dysfunction in Obesity and the Metabolic Syndrome" Department of Human Health and Nutritional Sciences, University of Guelph, Guelph, Ontario, Canada; 2009
57. "Microvascular Perfusion and Peripheral Vascular Disease: A Shift in Fractal Distribution Parameters?"; Department of Physiology, Medical College of Wisconsin, Milwaukee, WI, 2009.
58. "Microvascular Perfusion and Peripheral Vascular Disease: A Shift in Fractal Distribution Parameters?"; Department of Pharmacology and Toxicology, Medical College of Virginia/Virginia Commonwealth University, Richmond, VA, 2010.
59. "Microvascular Perfusion and the Metabolic Syndrome: A Shift in Fractal Distribution Parameters?": Center for Metabolic Diseases, Arizona State University, Tempe, AZ, 2010.
60. "Microvascular Perfusion and Peripheral Vascular Disease: A Shift in Fractal Distribution Parameters?"; Department of Physiology and Biophysics, University of Mississippi Medical Center, Jackson, MS, 2010.
61. "Altered Spatio-Temporal Regulation of Skeletal Muscle Perfusion Distribution in the Metabolic Syndrome" Heart and Vascular Research Institute, Pennsylvania State University, Hershey Medical Center, Hershey, PA, 2010
62. "Altered Spatio-Temporal Regulation of Skeletal Muscle Perfusion Distribution in the Metabolic Syndrome" Vascular Biology Institute, Medical College of Georgia, Augusta, GA, 2010
63. "Temporal Development of Microvascular Rarefaction in the Metabolic Syndrome" *Symposium Lecture*; World Congress for Microcirculation; Paris, France, 2010
64. "Integration of Skeletal Muscle Resistance Arteriolar Reactivity for Perfusion Responses in the Metabolic Syndrome" *Symposium Lecture*; World Congress for Microcirculation; Paris, France, 2010
65. "Peripheral Vascular Disease in the Metabolic Syndrome: A Shift in Microvascular Perfusion Distribution?" *Symposium Lecture*; World Congress for Microcirculation; Paris, France, 2010
66. "Aspirin resistance with genetic dyslipidemia: contribution of vascular thromboxane generation" *Featured Topic Lecture*; World Congress for Microcirculation; Paris, France, 2010
67. "Chaos Theory, Altered Attractors and Peripheral Vascular Disease: A New Paradigm"; Center for Cardiovascular and Respiratory Sciences; West Virginia University HSC; Morgantown, WV; 2010
68. "Peripheral Vascular Disease in the Metabolic Syndrome: Altered Spatial and Temporal Microvascular Perfusion Dynamics"; Department of Pharmacology; University of Vermont; Burlington, VT, 2011
69. "If Health is a Butterfly, is Disease a Monster?: a New Paradigm in Peripheral Vascular Disease"; Department of Kinesiology; University of Waterloo, Waterloo, Ontario, Canada, 2011
70. "If Health is a Butterfly, is Disease a Monster?: a New Paradigm in Peripheral Vascular Disease"; Department of Cellular and Integrative Physiology; University of Indiana School of Medicine, Indianapolis, IN, 2011
71. "Peripheral Vascular Disease in the Metabolic Syndrome: Altered Spatial and Temporal Microvascular Perfusion Dynamics"; Department of Human Health and Nutritional Sciences; University of Guelph, Ontario, Canada, 2011
72. "Peripheral Vascular Disease in the Metabolic Syndrome: Role of Altered Microvascular Behavior"; Department of Cardiology Grand Rounds, West Virginia University School of Medicine, 2011
73. "Peripheral Vascular Disease in the Metabolic Syndrome: Turning a Butterfly back into a Caterpillar?"; Department of Human Physiology, University of Oregon, Eugene, OR, 2011
74. "Peripheral Vascular Disease in the Metabolic Syndrome: If Health is a Butterfly, is Disease a Monster?"; Department of Integrative Medical Sciences; Northeast Ohio Medical University, Rootstown, OH, 2012
75. "Peripheral Vascular Disease in the Metabolic Syndrome: Altered Spatial and Temporal Microvascular Perfusion Dynamics"; Department of Medical Biophysics; University of Western Ontario, Ontario, Canada, 2012
76. "Metabolic Syndrome and Peripheral Vascular Disease: Incorporating Environmental Toxicology"; Society of Toxicology, Pittsburgh, PA, 2012
77. "Developing a Research Strategy for the Study of Follicular Microvascular Function"; Proctor and Ganble, Inc., Cincinnati, OH, 2012
78. "Unpredictable Chronic Mild Stress and Peripheral Vascular Disease: A Mouse Model"; Department of Cardiology Grand Rounds, West Virginia University School of Medicine, 2012
79. "Temporal activity at skeletal muscle microvascular bifurcations is reduced in metabolic syndrome: exacerbation of spatial perfusion abnormalities." Joint Meeting of MCS/BMS, Oxford, UK, 2012
80. "Perfusion Heterogeneity and Microvascular Rarefaction in the Metabolic Syndrome: The '1-2 Punch' for Non-Atherosclerotic Peripheral Vascular Disease"; Department of Cardiology Grand Rounds, West Virginia University School of Medicine, 2013
81. "Altered Spatial and Temporal Microvascular Perfusion Heterogeneity in Metabolic Syndrome": International Union of Physiological Sciences; Invited Symposium Lecture; Birmingham, UK, 2013
82. "Peripheral Vascular Disease in the Metabolic Syndrome: Turning a Butterfly back into a Caterpillar?"; Department of Bioengineering, University of Washington, Seattle, WA, 2013
83. "Chronic Stress, Depression and Peripheral Vascular Disease: the Differential Impact of Gender"; Department of Cardiology Grand Rounds, West Virginia University School of Medicine, 2013
84. "Altered Intra-Organ Perfusion Distribution in the Metabolic Syndrome: A Decay in System Responsiveness": Joint Meeting of NAVBO and MCS, Cape Cod, MA, 2013
85. "Chronic Stress, Depression and Vascular Dysfunction: Risk Factors and Mechanistic Contributors"; Department of Cardiology Grand Rounds, West Virginia University School of Medicine, 2014

86. "Chronic Stress. Depression and Vascular Dysfunction: The Protective Effect of Gender"; Department of Psychology, West Virginia University, 2014
87. "Modeling the Development of Peripheral Vascular Disease: Venturing into Mechanistic Epidemiology"; School of Public Health; West Virginia University, 2014
88. "A Progressive Loss of System Flexibility in the Microcirculation: the Critical Contributor to Poor Organ Performance in the Metabolic Syndrome? Featured Lecture, Mathematical Biosciences Institute (The Ohio State University); Summer Quarter Session: "Workshop on Molecular to Systems Physiology", Columbus, OH, 2014
89. "Altered Spatial Perfusion Distribution and Temporal Activity at Bifurcations Impairs Microvascular Blood Flow Distribution in Metabolic Syndrome: Does a Shifted Attractor Define Peripheral Vascular Disease?" ECSS 2014 Annual Meeting, Amsterdam, Netherlands, 2014
90. "Altered Perfusion Distribution at Arteriolar Bifurcations in Metabolic Syndrome: Do Damaged Butterflies and the "1-2 Punch" define Peripheral Vascular Disease?" Vascular Biology Institute, Kings College London, London, UK, 2014
91. "Altered Spatial Perfusion Distribution and Temporal Activity at Bifurcations Impairs Microvascular Blood Flow Distribution in Metabolic Syndrome: Does a Shifted Attractor Define Peripheral Vascular Disease?" The Physiological Society Annual Meeting, London, UK, 2014
92. "Altered Perfusion Distribution at Arteriolar Bifurcations in Metabolic Syndrome: Do Damaged Butterflies and the "1-2 Punch" define Peripheral Vascular Disease?" Department of Exercise Sciences, Liverpool John Moores University, Liverpool, UK, 2014
93. "Altered Perfusion Distribution at Arteriolar Bifurcations in Metabolic Syndrome: Do Damaged Butterflies and the "1-2 Punch" define Peripheral Vascular Disease?" Department of Pharmacology, Oxford University, Oxford, UK, 2014
94. "Oxidative Stress and Inflammation," Contributors to the '1-2' Punch of Vascular Disease in the Metabolic Syndrome"; Vascular Biology 2014, Monterey, CA.
95. "Publishing Your Scientific Manuscript: Tools of the Trade"; WV-CTSI Research "Boot Camp"; Morgantown, WV, 2014
96. "Altered Perfusion Distribution at Arteriolar Bifurcations in Metabolic Syndrome: Do Damaged Butterflies and the "1-2 Punch" define Peripheral Vascular Disease?" Department of Physiology, Louisiana State University HSC, Shreveport, LA, 2015
97. "Peripheral Vascular Disease Risk and the Metabolic Syndrome: Remember the Butterflies?"; Department of Veterinary Physiology and Pharmacology, Texas A&M University, College Station, TX, 2015
98. "Altered Chaotic Attractor For Microvascular Perfusion With Progressive Elevations In Cardiovascular Disease Risk Severity"; "; Department of Cellular and Integrative Physiology; University of Indiana School of Medicine, Indianapolis, IN, 2015
99. "Altered Chaotic Attractor For Microvascular Perfusion With Progressive Elevations In Cardiovascular Disease Risk Severity"; "; Department of Cardiology/Heart Institute Grand Rounds; West Virginia University HSC, Morgantown, WV, 2015
100. "Mistakes and Misperceptions: Hard Lessons in Peripheral Vascular Disease Research"; Department of Physiology and Pharmacology; West Virginia University HSC, Morgantown, WV, 2015

TRAINING AND EDUCATIONAL EFFORTS

Administration

2015 – present Director; Clinical and Translational Sciences Doctoral Program; West Virginia University

Clinical Faculty

2014 – present Khumara Huseynova, Division of Vascular/Endovascular Surgery, West Virginia University
2014 – 2015 Sana Akbar, Department of Nephrology, West Virginia University

Research Faculty

2008 – 2009 David Williamson, Division of Exercise Physiology, West Virginia University

Postdoctoral Fellows (Clinical)

2006 – 2007 Chetan Khamare, Department of Medicine (Cardiology), West Virginia University

Graduate Students Mentored

2015 – present Kristin Grogg, Clinical and Translational Science, West Virginia University
2014 – present Trey Rottgen, Division of Exercise Physiology (MD/PhD), West Virginia University
2014 – 2015 Holly McGinnis, Public Health (Epidemiology), West Virginia University
2014 – 2015 Kristin Grogg, Public Health (Epidemiology), West Virginia University
2012 – present Steven D. Brooks, Neuroscience; West Virginia University
2012 – 2015 Shyla C. Stanley, Cellular and Integrative Physiology; West Virginia University
2010 – 2014 Joshua T. Butcher, Cellular and Integrative Physiology; West Virginia University
2010 – 2011 Courtney Pawlak, Cellular and Integrative Physiology; West Virginia University
(Master's degree student; co-mentor with S.J. Frisbee)
2009 – 2012 Paula Prentice, Department of Psychology, West Virginia University
(co-mentor with Kevin Larkin)
2006 – 2011 Adam G. Goodwill; Department of Physiology/Pharmacology; West Virginia University
Winner, 2009 Zweifach Student Travel Award, Microcirculatory Society

Invitee, 2010 Lindau Meeting of Nobel Laureates (60th Annual)
Winner, 2011 ASPET Graduate Student Travel Award
Winner, 2011 SEBM Graduate Student Travel Award

2006 – 2010 Phoebe A. Stapleton, Division of Exercise Physiology, West Virginia University
2009 Stavros Atsas, Division of Exercise Physiology, West Virginia University
2004 – 2007 Julie Balch-Samora; Department of Physiology/Pharmacology; West Virginia University (co-mentor with M.A. Boegehold)

Doctoral Dissertation Committee

2015 – present Alaeddin Abukabda; Department of Physiology/Pharmacology; West Virginia University
2014 – present Molly Crowe; Department of Psychology; West Virginia University
2014 – present Evan DeVallance; Division of Exercise Physiology; West Virginia University
2014 Shiquing (Grace) Li; Vascular Biology Center, Medical College of Georgia
2012 – 2015 Sara Fournier, Division of Exercise Physiology, West Virginia University
2010 – 2015 Valerie Minarchik, Department of Physiology/Pharmacology; West Virginia University
2011 Steven Denniss, Department of Kinesiology, University of Waterloo
2010 – 2011 Gerald Audet, Division of Exercise Physiology; West Virginia University
2008 – 2012 Jianying Huang, Department of Physiology/Pharmacology; West Virginia University
2008 – 2012 Megan James, Department of Physiology/Pharmacology; West Virginia University
2008 – 2012 Himani Vejandla, Department of Physiology/Pharmacology; West Virginia University
2010 Mohammed Irfan Ali; Vascular Biology Center, Medical College of Georgia
2007 – 2010 Erinne Dabkowski, Division of Exercise Physiology, West Virginia University
2009 – 2012 Jacqueline E. Vigilance, Department of Basic Medical Sciences; The University of the West Indies
2006 – 2009 Reyna van Gilder, Department of Pharmacological Sciences, West Virginia University
2006 – 2008 Jonathan Peterson, Division of Exercise Physiology, West Virginia University
2006 – 2008 Amanda Jo LeBlanc; Department of Physiology/Pharmacology; West Virginia University
2005 – 2008 James R. Schmidt; Department of Physiology, Medical College of Wisconsin
2002 – 2004 Shane A. Phillips; Department of Physiology; Medical College of Wisconsin

Undergraduate and Medical Students Mentored

2015 – present Whitney Sheets, Department of Exercise Physiology, West Virginia University
2014 – 2015 Whitney Poling; Department of Biology, West Virginia University, (WV-INBRE)
2014 – 2015 Camille Leon, Department of Biology (Capstone), West Virginia University ***(Winner of 2014 Undergraduate Summer Research Fellowship; American Physiological Society)***
2014 Kelly Devlin, Exercise Physiology Student, (via STEM Program), West Virginia University ***(Winner of 2014 Honors SURE Fellowship)***
2013 Matthew Bologna; Medical Student, West Virginia University
2013 Benjamin Smith; Medical Student, West Virginia University
2012 – 2013 Kelsey Browning, Division of Exercise Physiology, West Virginia University
2012 – 2014 Paulina Skaff, Department of Biology (Capstone), West Virginia University
2009 Jennifer Casey, Department of Chemical Engineering, West Virginia University
2009 – 2010 Jordan Beckett, Department of Biology, W.Virginia Wesleyan University, (WV-INBRE)
2008 Joseph Widemeyer, Department of Chemical Engineering, West Virginia University
2007 – 2008 Jason P. Kudurogianis; Division of Exercise Physiology, West Virginia University
2007 Katie MacGregor; Davis and Elkins College, West Virginia (WV-INBRE Program)
2006 – 2007 Nunzio P. Pagano; Division of Exercise Physiology, West Virginia University
2005 Coben D. Thorn; Concord University, Athens, West Virginia (WV-INBRE Program)
2002-2003 Matthew A. Beulow; University of Wisconsin – La Crosse (with J.H. Lombard)

Undergraduate:

Human Physiology Laboratory/Seminar, University of Guelph, 1994-1995
Human Neuromuscular Physiology Laboratory/Seminar, University of Guelph, 1993

Graduate/Medical:

Director; "Foundations of Clinical and Translational Sciences"; BMS 793E; Clinical and Translational Sciences Doctoral Program; 2015-present

Director; "Clinical and Translational Sciences Journal Club"; BMS 794A; Clinical and Translational Sciences Doctoral Program; 2015-present

BMS 793B (Foundations/Diabetes Capstone); lectures on cardiovascular structure and function, lectures on diabetic end-organ damage (8 total lectures); Fall 2015

Supervisor; Special Topics in Cardiovascular Health (Course for Master of Science – Clinical and Translational Science, BMS 793A); Spring Semester 2015
Lecture on Clinical and Translational Research (MD/PhD Student Journal Club); "Cardiovascular Implications of Aspirin Resistance: Translating from Animal Models to Human Disease" (with Alexandre d'Audiffret, MD); 2015

Graduate Physiology and Pharmacology I (PSIO 793A); West Virginia University Health Sciences Center; Cellular and Integrative Physiology Program; Fall 2013, Fall 2015
Case Studies: General and Cellular Physiology, Cardiovascular Physiology, and Respiratory Physiology

Director; "Translational Cardiovascular Sciences (BMS 793)"; West Virginia University Health Sciences Center; Center for Cardiovascular and Respiratory Sciences); Summer 2013, 2015

Cardiovascular and Respiratory Biology (BMS 732), West Virginia University School of Medicine 2013
"The Cardiac Cycle/Cardiac Work"
"Cardiac Output and Venous Return"
"Lung Mechanics: Volumes and Capacities"
"Airway Resistance and Airflow"
"Alveoli, Gas Diffusion, O_2/CO_2 Transport"

Cardiovascular Physiology, Cellular and Integrative Physiology Program, West Virginia University School of Medicine 2012
"Homeostasis and Cardiovascular Transport"
"Basic Cardiac Structure and Function"
"The Peripheral Vascular System"
"Venous Return, Cardiac Output and Regulation of Arterial Pressure"

Director; "Discussions and Perspectives in Biomedical Research"; Center for Cardiovascular and Respiratory Science; West Virginia University School of Medicine; 2010-2011
"Fractal Geometry"
"Chaos Theory"
"Control Theory/Physiological Feedback Mechanisms"
"Epigenetics"
"Systems Biology"
"Physiological Genomics"
"Socio-Economic Models of Health and Disease"

Cardiovascular and Respiratory Biology, Department of Physiology and Pharmacology, West Virginia University School of Medicine, 2008 – 2012
"Microvascular Structure, Hemodynamics, Structural Determinants of Perfusion"
"Case Studies in Organ Perfusion"
"Introduction of Fractal Physiology"

Topics in Scientific Integrity; West Virginia University School of Medicine, Department of Graduate Studies, 2008 - present
"Authorship and Peer Review"

Director; Small Groups Learning; West Virginia University School of Medicine 2008 – 2012
"Human Form and Function"
- sections for Department of Physiology and Pharmacology Graduate Students
- sections for School of Medicine Medical Students (M-1)

Advanced Cardiovascular Physiology, Department of Physiology and Pharmacology, West Virginia University School of Medicine, 2008

"Adiponectin and Cardiovascular Disease"
"Case Studies in Impaired Organ Perfusion"
"Fractals in Cardiovascular Physiology"

Small Group Learning Facilitator, West Virginia University School of Medicine, 2006 – 2008
"Human Form and Function" – sections for Department of Physiology and Pharmacology

Advanced Cardiovascular Physiology, Department of Physiology and Pharmacology, West Virginia University School of Medicine, 2007

"Contributors to Impaired Organ Perfusion"

Advanced Cardiovascular Physiology, Department of Physiology and Pharmacology, West Virginia University School of Medicine, 2007

"Inflammation and Cardiovascular Disease"

Special Topics in Cardiovascular/Respiratory Physiology, West Virginia University School of Medicine, 2006
"Microvascular Structure, Hemodynamics, Structural Determinants of Perfusion"

Human Form and Function: Section on Gastro-Intestinal Physiology/Pathophysiology; West Virginia University School of Medicine, 2005

Human Form and Function: Section on Regulation of Food Intake, Obesity and Starvation; West Virginia University School of Medicine, 2005.

Topics in Cardiovascular/Respiratory Physiology, West Virginia University School of Medicine, 2005
"Vascular Remodeling – Microvessels and Microvascular Networks"

Group Learning Facilitator, West Virginia University School of Medicine, 2004
Cardiovascular Physiology

General Human Physiology, Medical College of Wisconsin, 2004
Gastro-Intestinal Physiology

General Human Physiology Laboratory, Medical College of Wisconsin, 1997-2002
Skeletal Muscle Physiology
Smooth Muscle Physiology
Cardiovascular Mechanics (1997-1998)
Cardiovascular Regulation

Other:

President (Mountaineer Hockey Inc.) and General Manager (WVU Mountaineers Hockey Team; ACHA Division 1); 2014 – present
Board of Directors, West Virginia University Hockey Team; 2010 - 2014
Faculty Advisor, West Virginia University Hockey Team; 2004 - 2014
Advisor; Special Projects in Human Biology, University of Guelph, 1993-1995
Instructor, Ontario Association of Applied Kinesiology; Clinical Exercise Physiologist Certification, 1994-1995

Technical:

Head Technician; Gross Human Anatomy Laboratory, University of Guelph, 1994-1996
Use of Animals in Teaching and Research, West Virginia University, 2004
Use of Radioisotopes in Teaching and Research, West Virginia University, 2005
Use of Animals in Teaching and Research, Medical College of Wisconsin, 1997
Use of Radioisotopes in Teaching and Research, University of Washington, 1996
Use of Animals in Teaching and Research, University of Washington, 1996
Magnetic Resonance Imaging Training, University of Guelph, 1994
Use of Animals in Research and Teaching, University of Guelph, 1993

Use of Radioisotopes in Teaching and Research, University of Guelph, 1993, 1995

CURRICULUM VITAE

Date: September 2020

NAME: Robert Leonard Goodman, Ph.D.

SOCIAL SECURITY #: ***-**-8777

SEX: Male

BIRTH DATE: June 5, 1947

BIRTH PLACE: San Francisco, California

ADDRESS: 77 Delrose Dr.
Morgantown, West Virginia 26508

Department of Physiology
West Virginia University Health Sciences Center
Box 9229
Morgantown, West Virginia 26506

TELEPHONE: (home) (304) 291-6875
(office) (304) 293-1496
(FAX) (304) 293-3850
(cell) (304) 906-7073
(e-mail) rgoodman@hsc.wvu.edu

EDUCATION:

Swarthmore College, Swarthmore, PA
1965-1969: B.A. with honors, major in chemistry.

Duke University, Durham, NC, 1969-1970,
Department of Physiology.

University of Pittsburgh, Pittsburgh, PA,
1972-1977: Ph.D. in Physiology.
Advisor: Dr. Ernst Knobil

EMPLOYMENT:

1970-1972
Research Technician, Laboratory of Dr. Ernst Knobil, Department of Physiology
University of Pittsburgh, Pittsburgh, PA

1977-1980
Postdoctoral Fellow, Reproductive Endocrinology Program, Department of Pathology
The University of Michigan, Ann Arbor, MI
Advisor: Dr. Fred Karsch

1980-1985
Assistant Professor, Department of Physiology
West Virginia University, Morgantown, WV

1985-1990,
Associate Professor, Department of Physiology
West Virginia University, Morgantown, WV

March-September 1989
Visiting Scientist with Dr. Jane Robinson
Department of Neuroendocrinology
AFRC Institute of Animal Physiology and Genetics Research
Babraham, England

1990-1998
Professor, Department of Physiology
West Virginia University, Morgantown, WV

February-August 1997
Visiting Scientist with Dr. Jean-Claude Thiery and Dr. Benoit Malpaux
Station de Physiologie de la Reproduction des Mammiferes Domestiques
Institute National de la Recherche Agronomique
Nouzilly, France

1998-2001
E. J. Van Liere Professor and Chairman, Department of Physiology
West Virginia University, Morgantown, WV

2001-2012
E. J. Van Liere Professor and Chairman, Department of Physiology and Pharmacology
West Virginia University, Morgantown, WV

January-July, 2007
Visiting Scientist with Dr. Iain Clarke and Jeremy Smith
Monash University
Melbourne, Australia

2012-present
Professor, Department of Physiology and Pharmacology
West Virginia University, Morgantown, WV

MEMBERSHIP IN PROFESSIONAL SOCIETIES:
Endocrine Society
Society Study of Reproduction
Society for Neuroscience

EDITORIAL RESPONSIBILITIES:
Editorial Board of Biology of Reproduction, 1983-1987
Editorial Board, American Journal of Physiology, 1988-1994
Editorial Board, Journal of Reproduction and Fertility, 1997-2000
Editorial Board, Reproduction, 2001-2007
Editorial Board, Domestic Animal Endocrinology, 2013-present
Editor of sub-section on Neuroendocrine Control of Reproduction in *Knobil and Neill's Physiology of Reproduction 4th edition* (Elsivier), 2012-2014
Editorial Advisory Board, Journal of Neuroendocrinology. 2016-2020

Ad hoc reviewer for:
American Journal of Physiology
Biology of Reproduction
Endocrinology
Journal of Animal Science
Neuroendocrinology
Proceedings, National Academy of Science

GRANT REVIEWER:
Ad hoc reviewer for National Science Foundation and USDA
Special Reviewer, Reproductive Endocrinology Study Section, National Institutes of Health, 1988
Panel member, Reproductive Biology of Animals Program, NRICGP, USDA, 1991-1992
Temporary Reviewer, Biochemical Endocrinology Study Section, National Institutes of Health, 1998
Site Visitor for Program Project, NICHD, 1998
Member, Biochemical Endocrinology Study Section, NIH, 1999-2004
Panel member, NIH SEP ZRG-06, 2008
Panel Member, NIH CTSA-2 Study Section, February 2009
Panel member, NIH Integrative & Cellular Endocrinology & Reproduction Study Section, May 2009
Panel member, NIH SEP ZRG1 EMNR-AS 95 S, May 2009
Ad hoc reviewer, Health Research Council of New Zealand, March 2011
Panel member, NIH Reproduction, Andrology & Gynecology Study Section, June 2012
Ad hoc reviewer, UK MRC, Sept 2012
Panel member, NIH Reproduction, Andrology & Gynecology Study Section, March, June, Oct 2013
Grant reviewer for the Health Research Council of New Zealand, 2013
Panel member, NIH Integrative & Cellular Endocrinology & Reproduction Study Section, Feb 2013
Member, NIH Reproduction, Andrology & Gynecology Study Section, 2014-2020

GRANTS:
Research (Funded extramural applications in bold):

1. **NSF Predoctoral Fellowship, 1969-1970; 1972-1974.**
2. **NIH Postdoctoral Fellowship, 1978-1980.**
3. Biomedical Research Grant (WVU Medical Corp.): Inhibition of LH by ovarian steroids 10/1/80-9/30/81: $2,800
4. **NIH R01-HD15654: Hypothalamic Regulation of Gonadotropin Secretion 7/1/81-6/30/84: $173,426**
5. Biomedical Research Grant (WVU Medical Corp.): Role of inhibitory neurotransmitters in control of seasonal breeding 11/1/82-9/1/83: $5,000
6. **NIH RO1-HD17864: Neuroendocrine Control of Seasonality in the Ewe 9/1/83-8/31/86: $140,597**
7. **NSF: Neuroendocrine Control of Seasonality in the Ewe: Funded, but withdrawn because redundant with NIH Grant.**
8. NIH RO1: Hypothalamic regulation of gonadotropin secretion: 12/1/84-11/30/87: Approved not funded
9. NIH RO1:Hypothalamic regulation of gonadotropin secretion:4/1/86-3/31/89: Approved not funded
10. NSF: Neuroendocrine control of seasonality in the ewe: 3/1/87-2/20/90: Approved not funded
11. **NIH RO1-HD17864: Neuroendocrine control of seasonality in the ewe: 7/1/87-6/30/90: $284,573**
12. Biomedical Research Grant (WVU Medical Corp): Analysis of the catecholaminergic systems controlling LH secretion in anestrous: 1/1/87-12/31/87: $4,932
13. Fogarty Senior International Fellowship: 3/1/89-8/31/89, Approved not funded
14. **NIH RO1-HD17864: Neuroendocrine control of seasonality in the ewe: 9/1/91 - 8/31/96: $484,190**
15. **NSF: Neuroendocrine control of seasonal reproduction in the ewe: 12/1/90-11/30/93 Funded, but withdrawn because redundant with NIH Grant**

18. NIH R01: (CoI) Neuroendocrine Basis of Seasonal Breeding: 12/1/94 - 11/30/98: Not Funded
19. NSF (CoI) Neuroanatomical Basis of the GnRH Pulse Generator: 12/1/94 - 11/30/97: Not funded
20. **NIH RO1-HD17864: Neuroendocrine Control of Seasonality in the Ewe: 2/1/97-1/31/02: $913,124**
21. **Fogarty Senior International Fellowship F06 TW02219: 2/17/97-8/16/97: $24,000**
22. **USDA97-02249 (CoI) Neuroanatomical Basis of the GnRH Pulse Generator: 9/15/97-9/14/02: $220,000**
23. **USDA98-35203-6321 (CoI) Anatomical Basis of Seasonal Plasticity in the GnRH System of the Ewe: 9/1/98-8/31/01 $180,000**
24. **NIH RO1-HD39916 (CoI) Opioid regulation of GnRH pulses: 9/1/01-8/31/05: $720,000**
25. **USDA 01-35202-10862 Neuroendocrine basis of seasonal breeding in the ewe: 9/1/01-8/31/04: $250,000**
26. **NIH R01-HD17864 Neuroendocrine Control of Seasonality in the Ewe: 7/01/02-6/30/07: $1,012,500**
27. **NIH R01-HD39916 (CoI) Opioid regulation of GnRH pulses: 9/1/06-8/31/11: $1,374,700**
28. **NIH F33 HD055789 Differential regulation of Kisspeptin, dynorphin, and NKB in the same Neurons 1/15/07-7/15/07 (Senior NRSA to support sabbatical) $55,000**
29. NIH-HD17864 Neuroendocrine Control of Seasonality in the Ewe: 7/1/07-6/30/12: Not funded
30. **Canadian Institutes of Health Research: Prenatal programming of the Reproductive Neuroendocrine System: 8/1/08-7/31/12: $ (subcontract)**
31. **2R56 HD017864-21A1 Neuroendocrine Control of Seasonality in the Ewe: 7/1/08-6/30/09: $217,459 One-year bridge grant**
32. **NIH R01-HD17864 Neuroendocrine Control of Seasonality in the Ewe: 7/1/09-6/30/14: $1,223,000**
32. USDA Proposal # 2013-67015-20956 (co-I, Stan Hileman PI) Role of KNDy neurons in ovine puberty: 9/1/13-8/31/16: $417,404
33. **NIH R01 HD39916 (PI, multi-PI application) Interactions of dynorphin, NKB, and kisspeptin in control of GnRH secretion: 7/15/13-4/30/18: $1,001,090**
34. NIH R01 HD082135 Role of NKB in the control of GnRH secretion by ovarian steroids
35. **1P20GM109098: (Co-I [Mentor], Jim Simpkins PI) West Virginia Stroke CoBRE: 9/8/14-5/31/19: $7,153,340; 15% effort**
36. **NIH R01 HD082135 Role of NKB in the control of GnRH secretion by ovarian steroids: 3/1/16-2/28/21: $2,008,340**
37. NIH R01 HD39916A1 (PI, multi-PI application) KNDy peptides and the control of GnRH secretion: 12/01/20-1/30/25: Scored, not funded
38. NIH RO1 HD105359-01 (PI, multi-PI application) Arcuate neural populations controlling GnRH secretion. 4/01/21-03/31/2026; Not funded (17th percentile)
39. NIH RO1 HD105359-01 (PI, multi-PI application) Arcuate neural populations controlling GnRH secretion. 10/01/21-09/30/2026; In preparation

Training:

1. **NIH Postdoctoral Training Grant in Endocrinology, T32 DK07312**
   Participant, 1980-1994; Director, 1992-1994

AWARDS AND HONORS:

1992-93 Benedum Distinguished Scholar Award in the Areas of Biosciences and Health Sciences
1995: Invited to present mini-symposium address at Annual Meeting of Society for the Study of Reproduction
1995: Invited to present the MRC Lecture at the Annual Meeting of the Australian Society for Reproductive Biology
1996: Invited to present an address at the First Jablonna Symposium on Neuroendocrine Aspects of Reproduction organized by The Kielanowski Institute, Polish Academy of Sciences
1996: Fogarty Senior International Fellowship (received a priority score of 100, given by Biological and Physiological Sciences Study Section)

1996: Photomicrograph from article selected for cover of Endocrinology
1997: Invited to present a symposium address at The International Congress of Chronobiology, Paris, France
1998: President, Northern West Virginia Chapter of the Society for Neuroscience
2001: Invited to present a symposium address at the 8th International Congress of Theriogeniology, Sun City, South Africa
2002: Invited present a symposium address at Joint annual meeting of the American and Canadian Animal Science and Dairy Science Societies, Quebec, Canada
2003: Photomicrograph from article selected for cover of Endocrinology
2007: Ruth L. Kirschstein NRSA Senior Fellow
2008: Invited present a symposium address at 6th International Congress on Farm Animal Endocrinology, Ronaoke, VA
2009: Invited to speak in a mini-symposium at the Annual Meeting of the Society for Study of Reproduction, Pittsburgh PA
2010: Keynote speaker at meeting of NICHD SCCPIR group, La Jolla CA
2010: Invited to speak at a mini-symposium at the 7th International Congress of Neuroendocrinology, Rouen, France
2010: Dean's Award for excellence in Research
2012: Invited to speak at a symposium at the Annual Meeting of the Endocrine Society, Houston TX, 2012
2012: Invited symposium speaker, 2nd World Conf on Kisspeptin Signaling in the Brain. Tokyo, Japan
2016 Organizing Committee and Session Chair, 3rd World Conf on Kisspeptin, Orlando FL

TEACHING:
1980-1989: Endocrine section of Physiology 743 (Dental): 45-65 students
1992-1994: Endocrine section of Physiology 241 (Nursing): 200 students
1985-1997: Endocrine section of Physiology 745 (Medical): 85-95 students
1980-2017: Neuroendocrinology, Animal Physiology 726 (Endo of Reproduction): 6-12 students
1985-2012: Endocrinology, Physiology 750 (Graduate): 3-5 students (coordinator: 1995-2102)
1989-present: Endocrine section of Physiology 791 (Advanced): 2-7 students
1998-2019: Endocrine portions of Human Function Course (Medical), 110 students
2008-2009: Endocrine portions of Physiology 743 (Dental/Pharmacy): 135 students
2003-2010: Endocrine and neural portions of Fundamentals of Integrated Systems (graduate): 20-30 students
2011-2013 Endocrine portions of Fundamentals of Integrated Systems: 20-30 students
2013-2015 Facilitate PBL session of MS1 students
2014-2018 Co-led and lectured in Diabetes Capstone of BMS793A: Foundations for Contemporary Biomedical Research
2014-Present: Endocrine portion of Graduate Physiology & Pharmacology, PSIO 750: 2-5 students
2014-Present: Neuroendocrine portion of Fundamentals of Neuroscience, NBAN791:6-7 students
2015-Present: Substitute facilitator for PBL sessions

GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS SUPERVISED:
1980-1986: Steve Meyer, Ph.D.
1982-1984: Therese Truppo, M.S.
1986-1988: Carl Brango, M.D.
1986-1988: Pacita David, M.D.
1986-1991: Dr. Scott Whisnant, Postdoctoral Fellow
1987-1992: Bob Havern, Ph.D.
1990-1992: Kelly Suter, M.S.
1992-1994: Dr. Brian Adrian, Postdoctoral Fellow
1995-1996: Dr. Rachid Boukhliq, Postdoctoral Fellow
1996-1997 Keith Chernock, M.S in Reproductive Physiology

1996-1998 Ivan Stefanovic, Ph.D.
1998-2000 Van Adams, M.S.
1996-2002 Steve Hardy, Ph.D.
1997-2000 Dr. Greg Anderson, Postdoctoral Fellow
2001-2006 Dr. Christie McManus, Postdoctoral Fellow
2004-2007 Adrienne Bogusz, M.S.
2005-2007 Dr. Sushma Singh, Postdoctoral Fellow
2006-2012 Casey Nestor, Ph.D.
2007-2010 Dr. Ida Holaskova, Postdoctoral fellow
2010-2013 Kati Porter, Ph.D.
2013-2016 Dr. Pasha Grachev, Postdoctoral Fellow
2013-2017 Dr. Richard McCosh, Ph.D.
2013-2018 Justin Lopes-M.S./Ph.D. student
2017-2018 Dr. Elizabeth Bowdridge, Postdoctoral Fellow

SERVED ON DOCTORAL COMMITTEES FOR:
Angelo Mariotti, Ph.D. in Pharmacology, 1982
Duane Kesler, Ph.D., Reproductive Physiology, 1984
Cathy Gust, Ph.D., Reproductive Physiology , 1985
Susan Fox, Ph.D, Department of Physiology, University of Pittsburgh, 1984
Dave Mallory, Ph.D., Reproductive Physiology, 1987
Domingo Tortonese, Ph.D., Reproductive Physiology, 1990
Pat Donnelley, Ph.D., Reproductive Physiology, 1990
Malay Dey, Ph.D., Physiology, 1993
Jimmy Yang, Ph.D., Reproductive Physiology, 1995
Laura Petrosky, Biochemistry, M.S., 1995
Sara Wright, M.S. Reproductive Physiology, 1995
David Wright, Ph.D. , Reproductive Physiology, 1997
Laura Petrosky, Ph.D. Candidate, Biochemistry,1999
Beth Santemiyer, M.D.-Ph.D. Physiology, 2000
Phil Bridges, Ph.D. Reproductive Physiology 2001
Aaron Erdley, PhD, Physiology and Pharmacology 2002
Saloni Sharma, M.S., Physiology and Pharmacology 2002
Alison Brown, PhD Reproductive Physiology 2003
Yucel Akgul, PhD, Physiology and Pharmacology 2007
Fernando Perea PhD, Reproductive Physiology, 2009
Val Minarchik, Cellular & Integrative Physiology, 2010
Michelle Bedenbaugh, PhD, Cellular & Integrative Physiology, 2018
Ashley Lindo, M.S., Reproductive Physiology, 2017
Peyton Weems, PhD Neuroscience, University of Mississippi Medical College 2017
Danielle Porter, PhD, University of Mississippi Medical College 2019
Eliana Aerts, Cellular Physiology and Pharmacology 2020-present

DEPARTMENTAL COMMITTEES:
Graduate Studies Committee, Physiology Department: 1981 - 1987 (Chairman: 1983-1987)
Ad hoc Departmental Committee to prepare LCME Report: 1985
Ad hoc Recruitment Committee: 1985
Promotion and Tenure Committee: 2016-2019
Marsh donation Committee: 2020-21

MEDICAL SCHOOL COMMITTEES:
Medical Technology Admissions Committee: 1980-2018
Health Professions Recruitment Committee: 1986-1989
Graduate Council: 1986-1989
Academic Review Committee for Department of Obstetrics and Gynecology: 1986

Search Committee, Assistant Dean for Research and Graduate Studies, 1989
Search Committee, Chair of Dept. of Obstetrics and Gynecology, 1990
Search Committee, Chair of Dept. of Physiology, 1992
Academic Review Committee for Dept. of Anatomy, 1993
Medical School Committee on Promotion and Tenure, 1989-1998, 2020-21
Research Advisory Council, 1993-1997
Curriculum Subcommittee to develop a map for the Medical Curriculum, 1996-1997
Teaching Metrics Design Committee for MBM, 1999-2000
Steering Committee, Center for Neuroscience, 2001-present
Ad hoc Committee on Graduate Curriculum, 2002-2003
Search Committee, Chair of Obstetrics and Gynecology, 2003-2004
Search Committee for Assistant Dean for Research, 2004
Admissions Committee for Medical Technology: 1980-present
Research Advisory Board, 2003-present
Chair, Ad Hoc committee on access to electronic journals, 2004
Council of Chairs, 2004-2010
Chairs and Center Directors, 2005-2007
Executive Fiscal Advisory Committee, 2006-2010
Chair, Search Committee for Rehabiliation Neuroscientist (PT)
Executive Council, 2010-2012
Member, Search Committee for Exercise Physiologist, 2011
Member, Search Committee for Director of Research, Dept of Neurosurgery, 2013-14
Member, Search Committee for Chair of Dept of Obstetrics and Gynecology, 2014-15

University Committees
Institutional Animal Care and Use Committee, 2015-present
Search Committee for Attending Veterinarian, 2016

INVITED PRESENTATIONS (Last 10 years):

4/09 28th Annual University of Kentucky Symposium on Reproductive Science and Women's Health
Lexington KY
Topic: Kisspeptin: the new neuropeptide critical for the regulation of GnRH secretion in sheep

7/09 42nd Annual meeting, Society for Study of Reproduction
Pittsburgh PA
Topic: Arcuate kisspeptin neurons play a key role in the feedback control of GnRH secretion in sheep

1/10 Meeting of NICHD SCCPIR group, La Jolla CA
Topic: From Kiss to KNDy: a single set of neurons produces three neuropeptides critical for the feedback regulation of GnRH

3/10 University of Pittsburgh, Pittsburgh PA
Topic: From Kiss to KNDy: is a single set of neurons the final common pathway for the feedback control of GnRH secretion?"

7/10 7th International Congress of Neuroendocrinology, Rouen, France
Topic: Neural systems mediating seasonal breeding in the ewe

7/12 Annual Meeting of the Endocrine Society, Symposium on NKB in reproduction
Topic: Role of NKB in control of LH secretion in sheep

11/12 2nd World conference on kisspeptin signaling in the brain, Tokyo, Japan
Topic: Comparison of the role of kisspeptin in three seasonally breeding mammals.

4/16 3rd World Conference on kisspeptin signaling in the brain, Orlando FL
Topic: What is the mechanistic basis of pulse generation?

PUBLICATIONS

PAPERS

1. Goodman RL, Hotchkiss J, Karsch FJ, Knobil E 1974 Diurnal variations in serum testosterone concentrations in the adult male rhesus monkey. Biol Reprod 11:624-630 PMID: 4477977

2. Goodman RL 1978 A quantitative analysis of the physiological role of estradiol and progesterone in control of tonic and surge secretion of luteinizing hormone in the rat. Endocrinology 102:142-150 PMID: 570477

3. Goodman RL 1978 The site of the positive feedback action of estradiol in the rat. Endocrinology 102:151-159 PMID 570478

4. Pang SF, Caggiula AR, Gay VL, Goodman RL, Pang CS 1979 Serum concentrations of testosterone, oestrogens, luteinizing hormone and follicle-stimulating hormone in male and female rats during the critical period of neural sexual differentiation J Endocrinol 80:103-110 PMID: 429945

5. Karsch FJ, Goodman RL, Legan SJ 1980 Feedback basis of seasonal breeding: Test of an hypothesis. J Reprod Fert 58:521-535 PMID: 7191896

6. Goodman RL, Legan SJ, Ryan KD, Foster DL, Karsch FJ 1980 Two effects of estradiol that normally contribute to the control of tonic LH secretion in the ewe. Biol Reprod 23:415-423 PMID 7191344

7. Goodman RL, Karsch FJ 1980 Pulsatile secretion of luteinizing hormone: Differential suppression by ovarian steroids. Endocrinology 107:1286-1290 PMID: 7000489

8. Goodman RL, Knobil E 1981The sites of action of ovarian steroids in the regulation of LH secretion. Neuroendocrinology 32:57-63 PMID: 7007907

9. Goodman RL, Pickover SM, Karsch FJ 1981 Ovarian control of follicle-stimulating hormone in the ewe: Evidence for selective suppression. Endocrinology 108:772-777 PMID: 6780323

10. Goodman RL, Legan SJ, Ryan KD, Foster DL, Karsch FJ 1981 Importance of variations in behavioral and feedback actions of estradiol to the control of seasonal breeding in the ewe. J Endocrinol 89:229-240 PMID: 7195422

11. Goodman RL, Reichert LE Jr., Legan SJ, Ryan KD, Foster DL,Karsch. FJ 1981 Role of gonadotropins and progesterone in determining the preovulatory estradiol rise in the ewe. Biol Reprod 25:134-142 PMID: 7197171

12. Goodman RL, Bittman EL, Foster DL, Karsch FJ 1981 The endocrine basis of the synergistic suppression of luteinizing hormone by estradiol and progesterone. Endocrinology 109:1414-1417 PMID: 7297483

13. Goodman RL, Karsch FJ 1981 A critique of the importance of steroid feedback to seasonal changes in gonadotrophin secretion. J Reprod Fert (Suppl. 30):1-13 PMID: 6820049

14. Goodman RL, Bittman EL, Foster DL, Karsch FJ 1982 Alterations in the control of LH-pulse frequency underlie the seasonal variation in estradiol negative feedback in the ewe. Biol Reprod 27:580-589 PMID: 6753958

15. Karsch FJ, Foster DL, Goodman RL, Bittman EL 1983 A role for estradiol in enhancing frequency on pulsatile LH secretion during the follicular phase of the estrous cycle of sheep. Endocrinology 113:1333-1339 PMID: 6684548

16. Goodman RL, Meyer SL 1984 Effects of pentobarbital anesthesia on tonic luteinizing hormone in the ewe: evidence for active inhibition of luteizining hormone in anestrus. Biol Reprod 30:374-381 PMID: 6538445

17. Karsch FJ, Bittman EL, Foster DL, Goodman RL, Legan SJ, Robinson JE 1984 Neuroendocrine Basis of Seasonal Reproduction. Recent Prog Horm Res 40:185-225 PMID: 6385166

18. Goodman RL, Daniel K 1985 Modulation of pulsatile luteinizing hormone secretion by ovarian steroids in the rat. Biol Reprod 32:217-225 PMID: 3986263

19. Truppo RM, Goodman RL 1985 Evidence that the anterior hypothalamus contributes to the control of tonic secretion of follicle-stimulating hormone in the female rat. Biol Reprod 32:753-760 PMID: 3924130

20. Meyer SL, Goodman RL 1985 Neurotransmitters involved in mediating the steroid-dependent suppression of pulsatile luteinizing hormone secretion in anestrous ewes: effects of receptor antagonists. Endocrinology 116:2054-2061 PMID: 2859194

21. Legan SJ, Goodman RL, Ryan KD, Foster DL, Karsch, FJ 1985 Can the transition into anestrous in the ewe be accounted for solely by insufficient tonic luteinizing hormone secretion? J Endocrinol 106:55-60 PMID: 3926932

22. Meyer SL, Goodman RL 1986 Separate neural systems mediate the steroid-dependent and steroid-independent suppression of tonic luteinizing hormone secretion in the anestrous ewe. Biol Reprod 35:562-571 PMID: 2878692

23. Foster DL, Ryan KD, Goodman RL, Legan SJ, Karsch FJ, Yellon SM 1986 Delayed puberty in lambs chronically treated with oestradiol. J Reprod Fert 78:111-117 PMID: 3761261

24. Dailey RA, Deaver DR, Goodman RL 1987 Neurotransmitter regulation of luteinizing hormone and prolactin secretion. J Reprod Fertil Suppl 34:17-26 PMID: 3305917

25. Huffman LJ, Inskeep EK, Goodman RL 1987 Changes in episodic luteinizing hormone secretion leading to puberty in the lamb. Biol Reprod 37:755-761 PMID: 3120813

26. Whisnant CS, Goodman RL 1988 Effects of an opioid antagonist on pulsatile luteinizing hormone secretion in the ewe vary with changes in steroid negative feedback. Biol Reprod 39:1032-1038 PMID: 3219376

27. Goodman RL 1989 Functional organization of the catecholaminergic neural systems inhibiting luteinizing hormone secretion in anestrous ewes. Neuroendocrinology 50:406-412 PMID: 2812274

28. Whisnant CS, Goodman RL 1990 Further evidence that serotonin mediates the steroid-independent inhibition of luteinizing hormone secretion in anestrous ewes. Biol Reprod 42:656-661 PMID: 2140702

29. Brango CW, Whisnant CS, Gooodman, RL 1990 A role for catecholaminergic neurons in the suppression of pulsatile luteinizing hormone secretion in the prepubertal ewe lamb. Neuroendocrinology 52:448-454 PMID: 2126353

30. Havern RL, Whisnant CS, and Goodman RL 1991 Hypothalamic sites of catecholamine inhibition of luteinizing hormone in the anestrous ewe. Biol Reprod 44:476-482 PMID: 1673066

31. Ryan KD, Goodman RL, Karsch FJ, Legan SJ, Foster DL 1991 Patterns of circulating gonadotropins and ovarian steroids during the first periovulatory period in the developing sheep. Biol Reprod 45:471-477 PMID: 1782296

32. Whisnant CS, Havern RL, and Goodman RL 1991 Endogenous opioid suppression of luteinizing hormone pulse frequency and amplitude in the ewe: hypothalamic sites of action. Neuroendocrinology 54:587-593 PMID: 1784345

33. Whisnant CS, Curto K, Goodman RL 1992 Immunocytochemical localization of beta-endorphin and gonadal steroid regulation of proopiomelanocortin messenger ribonucleic acid in the ewe. Neuroendocrinology 56:812-821 PMID: 1369589

34. Whisnant CS, Goodman RL 1994 Effect of anterior hypothalamic deafferentation on the negative feedback of gonadal steroids on luteinizing hormone pulse frequency in the ewe. Domest Anim Endocrin 11:151-159 PMID: 8045097

35. Havern RL, Whisnant CS, Goodman RL 1994 Dopaminergic structures in the ovine hypothalamus mediating estradiol negative feedback in anestrous ewes. Endocrinology 134:1905-1914 PMID: 7907976

36. Goodman RL, Robinson JE, Kendrick KM, Dyer RD 1995 Is the inhibitory action of estradiol on luteinizing hormone pulse frequency in anestrous ewes mediated by noradrenergic neurons in the preoptic area? Neuroendocrinology 61:284-292 PMID: 7898633

37. Goodman RL, Parfitt DB, Evans NP, Dahl GE, Karsch FJ 1995 Endogenous opioid peptides control the amplitude and shape of gonadotropin-releasing hormone pulses in the ewe. Endocrinology 136: 2412-2420 PMID: 7750462

38. Goodman RL, Havern RL, Whisnant CS 1996 Alpha-adrenergic neurons inhibit luteinizing hormone pulse amplitude in breeding season ewes Biol Reprod 54:380-386 PMID: 8788189

39. Goodman RL 1996 Neural systems mediating the negative feedback actions of estradiol and progesterone in the ewe. Acta Neurobiologiae Experimentalis 56: 727-741 PMID: 8917901

40. Lehman MN, Durham DM, Jansen HT, Adrian BA, Goodman RL 1996 Dopaminergic A14/A15 neurons are activated during estradiol negative feedback in anestrous, but not breeding season, ewes. Endocrinology 137: 4443-4450 PMID: 8828506

41. Lehman MN, Goodman RL, Karsch FJ, Jackson GL, Berriman SJ, Jansen HT 1997 The GnRH system of seasonal breeders: anatomy and plasticity. Brain Res Bull 44:445-457 PMID: 9370210

42. Skinner DC, Evans NP, Delaleu B, Goodman RL, Bouchard P, Caraty A 1998 The negative feedback actions of progesterone on gonadotropin-releasing hormone secretion are transduced by the classical progesterone receptor. Proc Nat Acad Sci 95: 10978-10983 PMID: 9724815

43. Coolen LM, Jansen HT, Goodman RL, Wood RI, Lehman MN 1999 Simultaneous demonstration of anterograde and retrograde connections in the brain: Co-injections of BDA and cholera toxin. J Neurosci Meth 91: 1-8 PMID: 10522819

44. Boukhliq R, Goodman RL, Berriman SJ,Adrian B, Lehman MN 1999 A subset of gonadotropin-releasing hormone neurons in the ovine medial basal hypothalamus is activated during increased pulsatile luteinizing hormone secretion. Endocrinology 140: 5929-5936 PMID: 10579360

45. Stefanovic I, Adrian B, Jansen HT, Lehman MN, Goodman RL 2000 The ability of estradiol to induce Fos expression in a subset of estrogen receptor-α containing neurons in the preoptic area of the ewe depends on reproductive status. Endocrinology 141: 190-196 PMID: 10614639

46. Goodman RL, Thiery JC, Delaleu B, Malpaux B 2000 Estradiol increases multi-unit electrical activity in the A15 area of ewes exposed to inhibitory photoperiods. Biol Reprod 63:1352-1357 PMID: 11058538

47. Anderson GM, Connors JM, Hardy SL, Valent M, Goodman RL 2001 Oestradiol microimplants in the ventromedial preoptic area inhibit secretion of luteinising hormone via dopaminergic neurons in anoestrous ewes. J Neuroendocrinol 13:1051-1058 PMID: 11722701

48. Anderson GM, Connors JM, Hardy SL, Valent M, Goodman RL 2002 Thyroid hormones mediate steroid-independent seasonal changes in luteinizing hormone pulse frequency in the ewe. Biol Reprod 66:701-706 PMID: 11870077

49. Billings HJ, Viguie C, Karsch FJ, Goodman RL, Connors JM, Anderson GM 2002 Temporal requirements of thyroid hormones for seasonal changes in luteinizing hormone secretion. Endocrinology 143:2618-2625 PMID: 12072394

50. Foradori CD, Coolen LM, Fitzgerald ME, Skinner DC, Goodman RL, Lehman MN 2002 Colocalization of progesterone receptors in the parvicellular dynorphin neurons of the ovine preoptic area and hypothalamus. Endocrinology 143: 4366-4374 PMID: 12399433

51. Hardy SL, Anderson GM, Valent M, Connors JM, Goodman RL 2003 Evidence that estrogen receptor alpha, but not beta, mediates seasonal changes in the response of the ovine retrochiasmatic area to estradiol. Biol Reprod 68: 846-852 PMID: 12604634

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46. Durham DM, Jansen HT, Adrian BA, Goodman RL, Lehman MN 1995 Dopaminergic A14/A15 neurons are activated during estradiol negative feedback in the anestrous ewe. Annual Meeting Society for Study of Reproduction

47. Adrian BA, Jansen HT, Lehman MN, Goodman RL 1995 Estradiol increases Fos expression in a subset of estrogen receptor-containing neurons in the preoptic area. Annual Meeting Society for Neuroscience

48. Goodman RL, Gibson M, Boukhliq R, Adrian BA 1996 Progesterone acutely stimulates LH pulse frequency in the ewe by non-opioid mechanisms. Annual Meeting Society for Study of Reproduction

49. Boukhliq R, Goodman RL, Adrian BA 1996 Estrous ewe introduction increases Fos expression in a subset of gonadotropin-releasing hormone-containing neurons in the medial basal hypothalamus of the male sheep. Annual Meeting Society for Neuroscience

50. Goodman RL 1997 The proximal neuroendocrine components involved in seasonal changes in the GnRH pulse generator: evidence from the ewe. Chronobiology International 14 (Suppl 1): 57

51. Lehman MN, Jansen HT, Goodman RL, Wood RI, Coolen LM 1997 Simultaneous demonstration of anterograde and retrograde connections in the brain: co-injections of BDA and cholera toxin. Annual Meeting of the Society for Neuroscience

52. Jansen HT, Auyung E, Stefanovic I, Lehman MN, Goodman RL 1997 The neural afferents and efferents of the hypothalamic A15 region in the ewe: combined anterograde and retrograde tract-tracing. Annual Meeting of the Society for Neuroscience

53. Chenock K, Goodman RL 1998 Effects of ACTH on the estrogen-induced LH surge. Annual Meeting of the Society for the Study of Reproduction

54. Goodman RL, Thiery JC, Delaleu B, Malpaux B 1998 Estradiol increases multi-unit electrical activity in the A15 region in the ewe. Annual Meeting Society for Neuroscience

55. Stefanovic I, Adrian B, Goodman RL 1998 Seasonal nature of the estradiol-induced Fos expression in a subset of estrogen receptor-containing neurons in the preoptic area of the ewe. Annual Meeting Society for Neuroscience

56. Caraty A, Delaleu B, Goodman RL, Bouchard P, Skinner DC 1998 The inhibition of GnRH secretion by progesterone is transduced by its nuclear receptor. Annual Meeting Society for Neuroscience

57. Anderson GM, Connors JM, Hardy SL, Valent M, Goodman RL 1999 Seasonal changes in LH pulsatility in the ovariectomized ewe are not abolished by thyroidectomy. Annual Meeting of Society for Study of Reproduction

58. Goodman RL, Anderson GM, Connors JM, Hardy SH, Valent M, Lehman NM 1999 Endogenous opioid peptides (EOP) act via κ-receptors in the ovine mediobasal hypothalamus (MBH) to inhibit LH pulse frequency during the luteal phase. Annual Meeting of Society for Study of Reproduction

59. Anderson GM, Jansen HT, Goodman RL 1999 Noradrenergic A1 neurons are not activated by estradiol negative feedback on Lh secretion in anestrous ewes. Annual Meeting of Society for Neuroscience

60. Goodman RL, Coolen LM, Jansen HT, Lehman MN 1999 Close associations between dynorphin-containing boutons and gonadotropin releasing-hormone cells in mediobasal hypothalamus (MBH) of the ewe: possible role in inhibition of LH pulse frequency. Annual Meeting of Society for Neuroscience

61. Jansen HT, Cutter CT, Anderson GM, Hardy SL, Lehman MN, Goodman RL 1999 Restricted distribution of estrogen receptor-α containing afferents to the hypothalamic A15 region in the ewe. Annual Meeting of Society for Neuroscience

62. Anderson GM, Connors JM, Hardy SL, Valent M, Goodman RL. 2000 A site of action of estradiol suppression of LH secretion via dopaminergic neurons in the anestrous ewe. Annual Meeting of Society for Study of Reproduction

63. Billings HJ, Connors JM, Goodman RL, Karsch FJ, Viguie C, Anderson GM. 2000 Thyroid hormones and seasonal reproduction: Temporal aspects of thyroid hormone action and mode of interaction with a circannual rhythm. Annual Meeting of Society for Study of Reproduction.

64. Anderson GM, Billings HJ, Connors JM, Goodman RL, Karsch FJ. 2000 Thyroid hormones are required for the day-night rhythm of fos expression in the premammillary hypothalamic area (PMH) of the ewe. Annual Meeting of Society for Neuroscience.

65. Hardy SL, Anderson GM, Valent M, Connors JM, Goodman RL. 2000 Does estradiol act via β-estrogen receptors in the ovine retrochiasmatic area to inhibit LH secretion in anestrus? Annual Meeting of Society for Neuroscience.

66. Lehman MN, Coolen LM, Anderson GM, Hardy SL, Skinner DC, Goodman RL. 2000 Do dynorphin neurons in the sheep hypothalamus contain progesterone receptors? Annual Meeting of Society for Neuroscience.

67. Hardy SL, Connors JM, Valent M, Goodman RL 2001 Seasonal variation in the response to local administration of estradiol to the ovine retrochiasmatic area. Annual Meeting of Society for Study of Reproduction

68. Foradori CD, Coolen LM, Hardy SL, Goodman RL, Lehman MN 2001 Localization of preprodynorphin mRNA and dynorphin A cell bodies in the sheep diencephalon. Annual Meeting of Society for Neuroscience

69. Cutter C, Hardy SL, Anderson GM, Goodman RL, Lehman MN 2001 Preoptic area afferents contact A15 dopamine neurons in the sheep brain. Annual Meeting of Society for Neuroscience

70. Adams VL, Salm A, Connors JM Coolen LM, Goodman RL 2001 Seasonal plasticity of A15 dopaminergic neurons in the ewe. Annual Meeting of Society for Neuroscience

71 Hardy SL, Anderson GM, Valent M, Billings H, Connors JM, Goodman RL 2001 Evidence that thyroid hormones act in the premamillary region to allow seasonal anestrus in the ewe. Annual Meeting of Society for Neuroscience

72. Jansen HT, Cutter CT, Hardy S, Lehman NM, Goodman RL 2001 Plasticity in the GnRH system of the ewe: seasonal changes in identified afferents and glial association. Annual Meeting of Society for Neuroscience

73. Goodman RL, Adams VL. Valent M, Connors JM, Hardy SL, McManus CJ, Hileman SJ 2002 Progesterone increases dynorphin concentrations in CSF collected from the third ventricle of ewes. Annual Meeting of the Society for Study of Reproduction

74. Hardy SL, McManus CJ, Valent M, Hileman SJ, Connors JM, Goodman RL 2002 GABA-B Receptors in the A15 area mediate estradiol negative feedback in anestrous ewes Annual Meeting of the Society for Study of Reproduction

75. McManus CJ, Hardy SL, Valent M, Connors JM, Goodman RL 2002 Inhibition of nitric oxide synthase in the ventromedial preoptic area increases luteinizing hormone pulse frequency in the anestrous ewe. Annual Meeting of Society for Neuroscience

76. Sliwowska J, Foradori C, Coolen LM Goodman RL, Hardy SL, Anderson GM, Lehman MN 2002 The premammillary hypothalamus area of the ewe: anatomical characterization snd connections with circuitry mediating seasonal reproduction. Annual Meeting of Society for Neuroscience

77. Billings HJ, Connors JM, Goodman RL, Lehman MN 2002 A subset of GnRH neurons contacting cerebrospinal fluid in the ewe. Annual Meeting of Society for Neuroscience

78. Foradori C, Coolen LM, Hardy SL, Goodman RL, Lehman MN 2002 Does progesterone increase preprodynorphin mRNA levels in the sheep preoptic area and hypothalamus? Annual Meeting of Society for Neuroscience

79. Sliwowska JH, Goodman RL, Lehman MN 2002 Gama-amino butyric acid-B (GABA-B) receptors are colocalized in A15 and other dopaminergic cells of the sheep hypothalamus, but not in GnRH neurons. International Congress of Neuroendocrinology

80. Billings HJ, Tetel MJ, Goodman RL, Lehman MN 2002 Localization of steroid receptor coactivator-1 in the ewe preoptic area and hypothalamus: Coexpression in a subset of GnRH neurons. International Congress of Neuroendocrinology

81. Foradori C, Coolen LM, Goodman RL, Lehman MN 2002 GnRH neurons in the ovine preoptic area and hypothalamus lack somal immunoreactivity for the kappa opioid receptor. International Congress of Neuroendocrinology

82. Sliwowska J, Foradori C, Coolen LM Goodman RL, Lehman MN 2002 The premammillary hypothalamic area of the ewe: anatomical characterization and contribution to circuitry mediating seasonal reproduction. Proceedings of the 1st congress of the Polish Society of Neuroendocrinology.

83. McManus CJ, Valent M, Llanza NV, Goodman RL, Hileman SM 2003 Food restriction fails to alter estrogen receptor alpha expression in the preoptic area of young weathers. Annual Meeting of the Society for Study of Reproduction

84. Sliwowska JH, Billings HJ, Goodman RL, Lehman MN 2003 Presence of Gamma-Amino Butyric Acid (GABA)-B Receptors in GnRH Neurons Of The Ewe: A Seasonal Comparison. Annual Meeting of the Society for Study of Reproduction

85. Foradori CD, Goodman RL, Lehman MN 2003 Colocalization of orphanin FQ peptide in GnRH neurons of the ovine preoptic area and hypothalamus. Annual Meeting of the Society for Neuroscience

86. Lehman MN, Goodman RL, Foradori CD 2003 Colocalization of dynorphin A and neurokinin B immunoreactivity in the ovine arcuate nucleus. Annual Meeting of the Society for Neuroscience

87. Billings HJ, Hileman SM, Goodman RL, Coolen LM, Lehman MN 2003 GnRH neurons contacting cerebrospinal fluid in the ewe. Annual Meeting of the Society for Neuroscience

88. Hardy SL, Goodman RL 2003 Gamma amino butyric acid (GABA) neuronal inputs on A15 dopaminergic neurons in ewes: a seasonal comparison. Annual Meeting of the Society for Neuroscience

89. McManus CJ, Goodman, Llanza NV, Valent M, Dobbins AB, Connors JM, Hileman SM 2003 Intrahypothalamic administration of estradiol suppresses LH in food restricted castrate sheep. Annual Meeting of the Society for Neuroscience

90. Billings HJ, Lehman MN, Coolen LM, Connors JM, Hardy SL, Breen KM, Rutishauser U, Goodman RL, Karsch FJ 2004 Is polysialylated neural cell adhesion molecule (PSA-NCAM) required for the GnRH surge? Annual Meeting of the Society for Study of Reproduction

91. McManus CJ, Goodman RL, Llanza NV, Valent M, Dobbins AB, Connors JM, Hileman SM 2004 Administration of dihydrotestosterone (DHT) to the ventromedial hypothalamus does not suppress LH in food restricted castrate sheep. Annual Meeting of the Society for Study of Reproduction

92. Goodman RL, McManus CJ, Valent M, Connors JM, Hileman SH, Lehman MN. 2004 Evidence that γ-amino butyric acid (GABA) is part of the neural circuit mediating estradiol negative feedback in anestrous ewes. Annual Meeting of the Society for Neuroscience Abstr 143.5

93. Billings HJ, Lehman MN, McManus CJ, Goodman RL 2004 Estrogen receptor-α neuronal projections to A15 in ewes: Lack of seasonal differences. Annual Meeting of the Society for Neuroscience. Abtsr. 192.15

94. McManus CJ, Valent M, Connors JM, Hileman SH, Goodman RL 2004 Time of year alters response to nitric oxide synthase inhibition in the seasonally anestrous ewe. Annual Meeting of the Society for Neuroscience. Abtsr. 756.23

95. Amstalden M, Billings HJ, McManus CJ, Valent M, Coolen LM, Goodman RL, Lehman MN 2004 Location of dynorphin neurons that project to the median eminence in the ewe. Annual Meeting of the Society for Neuroscience, Abstr. 192.16

96. Amstalden M, Foradori CD, Coolen LM, Goodman RL, and Lehman MN 2005 Distribution of kappa opioid receptor mRNA in the preoptic area and hypothalamus of the ewe. Annual Meeting of the Society for Study of Reproduction

97. Billings HJ, Lehman MN, Goodman RL, Amstalden M, McManus CJ, Hileman SM 2005 GnRH neurons contacting cerebrospinal fluid in estrous ewes. Annual Meeting of the Society for Study of Reproduction

98. McManus CJ, Valent M, Connors JM, Goodman RL, Lehman MN 2005 A Neurokinin B agonist stimulates LH secretion in follicular, but not luteal phase, ewes. Annual Meeting of the Society for Neuroscience. Abtsr. 760.8

99. Goodman RL, McManus CJ, Lehman MN, Coolen LM, Singh SR 2005 A possible role for glutamatergic neurons in mediating estradiol negative feedback in anestrous ewes. Annual Meeting of the Society for Neuroscience Abstr 759.3

100. Amstalden M, Billings HJ, Hileman SM, McManus CJ, Valent M, Coolen LM, Goodman RL, Lehman MN 2005 Location of dynorphin neurons that project to the external zone of the median eminence in the sheep. Annual Meeting of the Society for Neuroscience, Abstr. 759.14

101. Singh SR, McManus CJ, Coolen LM, Lehman MN, Goodman RL 2006 Glutamate Input To A15 Dopamine Neurons Increases in Anestrous Ewes. Front Neuroendocrinol 27: 75

102. Lehman MN, Coolen LM, de Oliveira CVR, Clarke IJ, Goodman RL 2006 Kisspeptin is Colocalized in a Subset of Dynorphin Neurons in the Ovine Arcuate Nucleus. Front Neuroendocrinol 27: 73

103. Goodman RL, Singh SR, Valent, M, Connors JM. McManus CJ 2006 Glutamate input to A15 neurons may mediate estradiol negative feedback in anestrous ewes. Front Neuroendocrinol 27: 65

104. Goodman RL, Billings HJ 2006 Seasonal differences in neurokinin-3 receptor-containing inputs to A15 dopaminergic neurons in ewes. Front Neuroendocrinol 27: 75

105. Singh SR, McManus CJ, Nestor CC, Connors JM, Lehman MN, Goodman RL 2006 Orphanin-FQ inhibits episodic luteinizing hormone (LH) secretion in ewes. Annual Meeting of the Society for Neuroscience

106. Bogusz AL, Hardy SL, Billings HJ, McManus CJ, Goodman RL 2006 Gamma-amino butyric acid $(GABA)_A$ receptors are expressed in hypothalamic A15 dopamine neurons of anestrous ewes. Annual Meeting of the Society for Neuroscience

107. Billings HJ, Coolen LM, Goodman RL, Lee TM, Mahoney MM, Tetel MJ, Lehman MN 2006 GnRH neurons of diurnal but not nocturnal species contain steroid receptor coactivator-1. Annual Meeting of the Society for Neuroscience

108. Cheng G, Coolen LM, Reale M, Goodman RL, Padmanabhan V, Lehman MN 2007 Influence of Prenatal Androgens on Dynorphin and NKB-Expressing Neurons in the Mediobasal Hypothalamus of the Sheep. Annual meeting of Endocrine Society, Abstr 3-346

109. Cheng G, Coolen LM, Reale M, Goodman RL, Padmanabhan V, Lehman MN 2007 Sex differences in neuronal expression of dynorphin and neurokinin B in the control of gonadotropin-releasing hormone in sheep. 1st Annual Meeting, Canadian Association of Neuroscience

110. Cheng G, Coolen LM, Reale ME, Goodman RL, Lee TM, Padmanabhan V, Lehman MN 2007 Sex differences in kisspeptin neurons in the sheep hypothalamus. Annual Meeting Society for Neuroscience, Abstr 194.14

111. Reale ME, Coolen LM, Cheng G Goodman RL, Lehman MN 2007 Sexual dimorphism of dynorphin A and neurokinin B-containing inputs onto gonadotropin-releasing hormone neurons in the sheep. Annual Meeting Society for Neuroscience, Abstr. 194.13

112. Pitchers KK, Muscan LM, Cheng G, Coolen LM, Billings HJ, Nestor CC, Goodman RL, Lehman MN 2007 Seasonal changes in the number of kisspeptin-immunoreactive neurons in the ewe: possible role in seasonal reproductive transitions. Annual Meeting Society for Neuroscience, 194.13

113. Coolen LM, Smith JT, Clarke IJ, de Oliveira CVR, Jafarzadehshirazi MR, Iqbal J, Lehman MN, Goodman RL 2007 Arcuate kisspeptin neurons in the sheep contain both dynorphin and neurokinin B. Annual Meeting Society for Neuroscience

114. Hileman SM, Bogusz AL, Nestor C, Connors JM, Goodman RL, Billings HJ 2007 Neuropeptide Y (NPY)-1 receptors mediate the suppression of LH secretion by NPY in castrated male sheep. Annual Meeting Society for Neuroscience, Abstr 194.2

115. Billings HJ, Geer SN, Holaskova I, Goodman RL 2008 Estradiol in the arcuate nucleus inhibits LH pulse frequency and steroid receptor coactivator-1 colocalization with estrogen receptor-α. Annual Meeting Society for Study of Reproduction

116. Nestor CC, Holaskova I, Goodman RL, Billings HJ 2008 Surge-like release of LH following administration of a neurokinin-3 receptor agonist to the retrochiasmatic area of early follicular phase ewes. Annual Meeting Society for Study of Reproduction

117. Lehman MN, Cheng G, Goodman RL, Lee T, Padmanabhan V, Coolen LM 2008 Prenatal Testosterone Alters the Balance of Neuropeptide/Steroid Receptor Expression within a Single Subpopulation of the Arcuate Nucleus: A Model for PCOS? Annual Meeting of the Society for Behavioral Neuroscience

118. Maltby MJ, Brown E, Coolen LM, Cheng G, Goodman RL, Lehman MN 2008 Dopamine D2 receptors are colocalized in gonadotropin-releasing hormone (GnRH) and dynorphin neurons in the mediobasal hypothalamus of the anestrous ewe. Annual Meeting Society for Neuroscience

119. Amstalden M, Spell KM, Williams GL, Goodman RL, Lehman MN 2008 Neurokinin 3 receptor internalization in the arcuate nucleus is increased during the follicular phase of the estrous cycle in the sheep. Annual Meeting Society for Neuroscience

120. Goodman RL, Rao A, Smith JT Clarke IJ 2008 Negative feedback control of *Kiss-1* gene expression by estradiol and progesterone in the ewe. 1st World Congress on Kisspeptin Signaling in the Brain, Cordoba, Spain

121. Lehman MN, Cheng C, Goodman RL, Lee T, Padmanabhan V, Coolen LM 2008 Kisspeptin may play a pivotal role in neuroendocrine deficits associated with a sheep model of polycystic ovarian syndrome. 1st World Congress on Kisspeptin Signaling in the Brain, Cordoba, Spain

122. Goodman RL 2008 Kisspeptin neurons as integrators of reproduction. 6th International Congress on Farm Animal Endocrinology. Roanke VA

123. Merkley C, Coolen LM, Padmanabhan V, Jackson L, Goodman RL, Lehman MN 2009 Evidence for transcriptional activation of arcuate kisspeptin neurons, and glutamatergic input to kisspeptin during the preovulatory GnRH surge of the sheep. Annual meeting of the Endocrine Society

124. Billings HJ, Nestor CC, Hileman SM, Geer SN, Valent M, Goodman RL 2009 Estradiol in the arcuate nucleus inhibits LH pulse frequency via a non-dopaminergic pathway in anestrous ewes. Annual meeting of Society for Reproduction

125. Ladha Z, Coolen LM, Goodman RL, Lehman MN 2009 Reproductive seasonality and the effects of thyroid hormone on neurotrophin expression in the ewe. Annual meeting of Society for Reproduction

126. Goodman RL 2009 Arcuate kisspeptin neurons play a key role in the feedback control of GnRH secretion in sheep. Annual Meeting of Society for Study of Reproduction

127. Hileman SM, Bassin A, Nestor CC, Billings HJ, Connors JM, Holaskova I, Lehman MN, and Goodman RL 2009 Dopaminergic neurons act in the arcuate nucleus to hold LH pulse frequency in check in anestrous ewes. Annual Meeting of Society for Neuroscience

128. Goodman RL, Hileman S, Nestor CC, Holaskova I, Connors JM, Millar RP, Collen LM, Lehman MN 2009 Kisspeptin actions in the arcuate nucleus of ewes are necessary for episodic GnRH secretion. Annual Meeting of Society for Neuroscience

129. Nestor CC, Billings HJ, Hileman SM, Connors JM, Valent M, Salm AK, Lehman MN, Goodman RL 2009 Orphanin FQ acts primarily at the hypothalamus to inhibit pulsatile LH secretion in sheep. Annual Meeting of Society for Neuroscience

130. Goodman RL, Coolen LM, Lehman MN 2010 Neural systems mediating seasonal breeding in the ewe. 7th International Congress of Neuroendocrinology, Rouen, France. Abstr S-25

131. Goodman RL, Holaskova I, Nestor CC, Hileman SM, Connors JM, Billings HJ, Valent M, Lehman MN 2010 Evidence that dynorphin neurons in the arcuate nucleus mediate the negative feedback actions of progesterone in the ewe. 7th International Congress of Neuroendocrinology, Rouen, France Abstr P1-33

132. Merkley CM, Coolen LM, Goodman RL, Lehman MN 2010 Colocalization of glutamate within kisspeptin cells and their projections onto GnRH neurons in the ewe. 7th International Congress of Neuroendocrinology, Rouen, France Abstr P2-10

133. Lehman MN, Tseng AS, Whited B, Nestor CC, Millar RP, Hileman SM, Coolen LM, Goodman RL 2010 Evidence that dopamine acts via kisspeptin to hold GnRH pulse frequency in check in anestrous ewes. Annual Meeting of Society for Neuroscience

134. Goodman RL, Nestor CC, Connors JM, Holaskova I, Lehman MN 2010 The actions of neurokinin B in the arcuate nucleus are important for episodic LH secretion in ewes. Annual Meeting of Society for Neuroscience

135. Nestor CC, Seebaugh AM, Valent M, Connors JM, Goodman RL, Hileman SM 2010 Evaluation of neurokinin B and kisspeptin expression before and after puberty in sheep. Annual Meeting of Society for Neuroscience

136. Schafer R, Hileman SM , Goodman RL, Holaskova I 2011 The effect of neonatal androgen treatment on the enhancement of the humoral immune response by the novel endocrine disrupter, propanil. Annual Meeting, Society of Toxicology

137. Nestor CC, Nesselrod GL, Valent M, Connors JM, Hileman SM, Goodman RL 2011 Evidence that orphanin FQ is important for progesterone negative feedback in ewes. Annual Meeting of Society for Study of Reproduction

138. Lehman MN, Coolen LM, Cheng G, Goodman RL 2011 Orphanin FQ cells of the ovine hypothalamus express estradiol receptor-alpha and progesterone receptors, but not kisspeptin or tyrosine hydroxylase. Annual Meeting of Society for Study of Reproduction

139. Porter KL, Hileman SM, Drews S, Goodman RL 2011 Arcuate kisspeptin neurons are rapidly activated by removal of estrogen negative feedback in anestrous ewes. Annual Meeting of Society for Neuroscience

140. Merkley C, Coolen LM, Goodman RL, Lehman MN 2011 Direct projections of arcuate KNDy (Kisspeptin/Neurokinin-B/Dynorphin) neurons to GnRH neurons in the sheep. Annual Meeting of Society for Neuroscience

141. Merkley C, Coolen LM, Goodman RL, Lehman MN 2012 Colocalization of met-enkephalin, but not galanin or tyrosine hydroxylase, within kisspeptin neurons in the sheep. Annual Meeting of Endocrine Society

142. Goodman RL, Porter KL, Connors JM, Nestor CC, Lehman MN, Hileman SM 2012 Evidence that dynorphin, but not glutamate or GnRH, acts in the arcuate nucleus of the ewe to control episodic GnRH release. Annual Meeting of Society for Neuroscience

143. Goodman RL, Lehman MN 2012 Comparison of the role of kisspeptin in three seasonally breeding mammals. 2nd World Conference on Kisspeptin Signaling in the Brain. Tokyo, Japan

144. Lehman NM, Coolen LM, Goodman RL 2012 KNDy cells: Testing their role in GnRH pulse generation and beyond. 2nd World Conference on Kisspeptin Signaling in the Brain. Tokyo, Japan

145. Porter KL, Hileman SM, Hardy SL, Goodman RL 2013 Senktide acts in the retrochiasmatic area and preoptic area stimulates surge-like LH secretion in ewes. Annual Meeting of Endocrine Society

146. Goodman RL, Porter KL, Connors JM, Hileman SM 2013 Neurokinin B (NKB) and the NKB receptor agonist, senktide, act in the ovine arcuate nucleus to produce different patterns of LH release. Annual Meeting of Endocrine Society

147. Porter KL, Hileman SM, Hardy SL, Goodman RL 2013 Neurokinin B signaling in the retrochiasmatic area is essential for the full preovulatory LH surge in ewes. Annual Meeting of Society for Neuroscience. Abstr 274.03

148. Coolen LM, Smith TG, Lehman MN, Hileman SM, Connors JM, Goodman RL 2013 Arcuate KNDy neurons receive afferent projections from the retrochiasmatic area in the ewe. Annual Meeting of Society for Neuroscience. Abtsr. 274.06

149. McCosh RB, Katrina L. Porter KL, Donal C. Skinner DC, Goodman RL 2014 Activation of NK3R In the ovine preoptic area Increases LH secretion and inhibits activity of somatostatin containing cells. Annual Meeting of the Endocrine Society. Abstr.MON-606

150. Grachev P, McCosh RB, Lopez JA, Meadows LJ, Nesselrod GL, Valent M, Hardy S:, Connors JM. Hileman SM, Goodman RL 2014 Surge-like LH secretion induced by retrochiasmatic area NK3R activation is mediated by kisspeptin/GPR54 signaling in ovary-intact ewes. 8th International Congress of Neuroendocrinology, Sydney Australia

151. Lehman MN, Coolen LM, Goodman RL 2014 KNDy neurons, peptides and the control of GnRH secretion. 8th International Congress of Neuroendocrinology, Sydney, Australia

152. Grachev P, McCosh RB, Lopez JA, Nesselrod G, Valent M, Hardy SL, Connors JM, Hileman SM, Goodman RL 2014 The stimulatory effect of Neuromedin U on pulsatile LH secretion: insights from a seasonal mammal. Annual Meeting of Society for Neuroscience. Abstr 543.03

153. Lopez JA, Meadows L, McCosh RB, Goodman RL, Hileman SM 2014 Is Dynorphin Involved in the Prepubertal Suppression of LH Secretion by Estradiol in Female Sheep? Annual Meeting of Society for Neuroscience. Abstr 543.05

154. Witty CF, Weems PW, Goodman RL, Coolen LM, Lehman MN 2014 Kappa opioid receptor is present within a majority of KNDy neurons in the ewe. Annual Meeting of Society for Neuroscience. Abstr 543.04

155. Weems PW, Goodman RL, Coolen LM, Lehman MN 2014 Season- and steroid-dependent regulation of D2 dopamine receptor, kisspeptin, and neurokinin B in KNDy cells of the ovine arcuate nucleus. Annual Meeting of Society for Neuroscience. Abstr 543.02

156. Goodman RL, Mazzella L, Grachev P, McCosh RB, Connors JM, Hileman SM 2015 High Doses of Neurokinin A and Substance P Stimulate LH Secretion in Ewes. 97th Annual Meeting of the Endocrine Society, San Diego CA, March 5-8, Abstr FRI-437

157. Fergani C, Newcomb N, Goodman RL, Coolen LM, Lehman MN 2015 Anatomical relationships of kisspeptin to Substance P and Neurokinin-1 receptor in the sheep arcuate nucleus. Annual Meeting of the Endocrine Society, Abst THR-465

158. Lopez JA, McCosh RB, Nesselrod G, Bedenbaugh MN, Hardy SL, Goodman RL, Hileman SM 2015 Evidence That Alterations in Dynorphin Secretion Play an Important Role in Ovine Puberty. Annual Meeting of the Endocrine Society, Abstr FRI-431

159. Grachev P, Valent M, Goodman RL 2015 Neuromedins U and S differentially regulate pulsatile LH and prolactin secretion and are expressed in the suparoptic and paraventricular nuclei in ewes. Annual Meeting of Society for Neuroscience. Abstr 613.12

160. Bedenbaugh MN, Lopez JA, McCosh RB, Goodman RL, Hileman SM 2016 Characterization of neuronal nitric oxide synthase neurons in the hypothalamus of prepubertal sheep. 98th Annual Meeting of the Endocrine Society, Abstr. FRI-483

161. Weems PW, Goodman RL, Coolen LM, Lehman MN 2016 Phenotypic identification of Kappa opioid receptor-containing neurons in the ovine arcuate nucleus. 98th Annual Meeting of the Endocrine Society, Abstr. FRI-484

162. Weems PW, Coolen LM, Hileman SM, Hardy S, McCosh RB, Goodman RL, Lehman MN 2016 Kappa opioid receptors are internalized in arcuate KNDy cells during GnRH pulse termination in the ewe. Annual Meeting of Society for Neuroscience, San Diego CA, Abstr 60.04

163. McCosh RM, Bedenbaugh MN, Lopez JA, Hileman SM, Valent M, Grachev P, Goodman RL 2016 Blockade of somatostatin receptor 2 stimulates episodic LH secretion, but not surge LH secretion, in ewes. Annual Meeting of Society for Neuroscience, San Diego CA, Abstr 339.10

164. Grachev P, McCosh RB, Bedenbaugh MN, Valent M, Hardy S, Connors JM, Hileman SM, Goodman RL 2016 Stimulatory effect of neuromedin U on pulsatile LH secretion in ewes is dependent on melanocortin type 4 receptor. Annual Meeting of Society for Neuroscience, San Diego CA, Abstr 339.05

165. Bedenbaugh MN, Rainey CA, McCosh RB, Lopez JA, Goodman RL, Hileman SM 2016 Neurokinin B, but not dynorphin, acts in the arcuate nucleus of prepubertal female sheep to control LH secretion. Annual Meeting of Society for Neuroscience, San Diego CA, Abstr 339.11

166. Weems P, Coolen LM, Hileman SM, Hardy SL, McCosh RB, Goodman RL, Lehman MN 2017 Kappa opioid receptors are internalized in MBH GnRH cells during GnRH pulse termination. 99th Annual Meeting of the Endocrine Society, Orlando FL Abstr. 472

167. McCosh RB, Brett M Szeligo, Michelle N. Bedenbaugh, Justin A. Lopez, Steven L. Hardy, Stanley M. Hileman, John M Connors and Robert L. Goodman 2017 Somatostatin Receptor 2 Antagonist, CYN154806, Stimulates Steroid Independent Episodic LH Secretion in Ewes. 99th Annual Meeting of the Endocrine Society, Orlando FL Abstr. 473

168. DT Porter, AM Moore, JA Cobern, V. Padmanabhan, RL Goodman, LM Coolen, MN Lehman 2017 Prenatal testosterone exposure alters GABAergic input to GnRH and KNDy neurons in a sheep model of polycystic ovarian syndrome. 99th Annual Meeting of the Endocrine Society, Orlando FL Abstr. SAT-444

169. Moore AM, Lucas KA, Goodman RL, Coolen LM, Lehman MN. 2017 Visualization of the complete arcuate kisspeptin neuronal population in the ovine hypothalamus using optical tissue clearing. 99th Annual Meeting of the Endocrine Society, Orlando FL Abstr. OR23-1

170. Bedenbaugh MN, O'Connell RC, Lopez JA, McCosh RB, Goodman RL, Hileman SM 2017 Kisspeptin and GnRH Neurons in prepubertal female sheep express neuronal Nitric Oxide Synthase. 99th Annual Meeting of the Endocrine Society, Orlando FL Abstr. SUN-475

171. Porter DT, Goodman RL, Coolen LM, MN Lehman MN 2017 Simultaneous visualization of all three KNDy peptide mRNAs in the same neurons of the ovine arcuate nucleus. Annual Meeting of Society for Neuroscience, Washington DC, Abstr 785.25

172. Bedenbaugh MN, Rainey CA, McCosh RB, Lopez JA, Goodman RL, Hileman SM 2017 Examination of age-related changes in NK3R expression and colocalization of KOR with GnRH neurons in the hypothalamus of female sheep Annual Meeting of Society for Neuroscience, Washington DC, Abstr 785.25

173. Lopez JA, McCosh RB, Bedenbaugh MN, Lindo AN, Connors JM,. Hileman SM, Goodman RL 2018 The Response to Senktide Administration in the Retrochiasmatic Area is Sexually Dimorphic in Lambs. 9th International Congress of Neuroendocrinology, Toronto CA Abstr PS1.00125

174. Bedenbaugh MN, McCosh RB, Lopez JA, Connors JM, Goodman RL, Hileman SM. 2018 Neuroanatomical relationship of nNOS to GnRH and kisspeptin neurons in adult female sheep and primates. 9th International Congress of Neuroendocrinology, Toronto CA Abstr.PS1.00127

175. Porter DT, Goodman RL, Coolen LM, Lehman MN 2018 Estradiol levels that induce an LH surge also increase glutamatergic inputs onto KNDy cells in ewes. 9th International Congress of Neuroendocrinology, Toronto CA Abstr PS1.00135

176. Goodman RL, Coolen LM, McCosh RB, Lopez JA, Bedenbaugh MN, Connors JM, Hardy SL, Porter DT, Hileman SM, Lehman MN 2018 Lesions of NK3R-containing neurons in the retrochiasmatic area (RCh) blunts the LH surge in ewes. 9th International Congress of Neuroendocrinology, Toronto CA Abstr PS1.00142

177. Lopez JA, McCosh RB, Bedenbaugh MN,Lindo AN, Bowdridge EC, Hileman SM, Goodman RL 2018

Evidence for morphological sexual dimorphism in NK3R-containing neurons in the retrochiasmatic area of sheep. Annual Meeting of Society for Neuroscience, San Diego CA Abstr 773.19.

178. Goodman RL, Lopez JA, Bedenbaugh MN, , Connors JM, Hardy SL, Hileman SM, Coolen LM, Lehman MN 2018 Evidence that the LH surge in ewes involves both neurokinin B-dependent and -independent actions of kisspeptin. Annual Meeting of Society for Neuroscience, San Diego CA Abstr 773.20

179. Porter DT, Goodman RL, Staursky DA, Coolen LM, MN Lehman MN 2018 Kisspeptin, neurokinin B, and dynorphin mRNA regulation by ovarian steroids in the arcuate nucleus of the ewe: simultaneous analysis of all three KNDy mRNAs in individual neurons. Annual Meeting of Society for Neuroscience, San Diego CA Abstr 773.21

180. McCosh RB, Lopez JA, Bedenbaugh MN, , Connors JM, Hardy SL, Hileman SM, Goodman RL 2018 Evidence that Nitric Oxide from Somatostatin-containing Neurons is Critical for the LH Surge in Sheep. Annual Meeting of Society for Neuroscience, San Diego CA Abstr. 773.22

181. Porter DT, Moore AM, Goodman RL, Hileman SM, Coolen LM, Lehman MN 2019 Cell-specific ablation of GnRH neurons using kisspeptin-saporin in the preoptic area of sheep, but not mice. ENDO 2019, Abstr. SAT-421

182. He W, Coolen LM, Goodman RL, Lehman MN 2019 Co-localization of NK3R and KOR mRNA in KNDy and non-KNDy neurons in the ovine arcuate nucleus. Annual Meeting of Society for Neuroscience, Chicago IL

CURRICULUM VITAE – updated October, 2020

PERSONAL DETAILS

Name: Leah W. (Fink) Hammer, Ph.D.

Title: Teaching Associate Professor, Physiology and Pharmacology

Address: Dept. Physiology and Pharmacology
West Virginia School of Medicine
Robert C. Byrd Health Sciences Center, Box 9229
Morgantown, WV, 26506-9229

Telephone: phone) 304 293-1521
fax) 304 293-3850
email) lhammer@hsc.wvu.edu

Current Position: Teaching Associate Professor

EDUCATION

Undergraduate

B.Sc. Pharmacology & Toxicology; Zoology Monash University, Victoria, Australia 1987-1989

B.Sc.Hons Pharmacology; Monash University, Victoria, Australia; 1990 Thesis Title: Assessment of the dopaminergic properties of N-methyl-N-n-propyl 2-aminotetralin.

Postgraduate/Postdoctoral Training

Ph.D. Dept. Pharmacology, Monash University, Victoria, Australia. 1991-1994, Thesis Title: Changes in cardiovascular reactivity of the rat during pregnacy: a role for the vascular endothelium.

PROFESSIONAL EMPLOYMENT FULL-TIME

Current Academic Positions and Appointments

2008-current Teaching Associate Professor, Dept. Physiology and Pharmacology, WVU, Morgantown, WV, USA

Previous Academic Employment

2006-2008 Lecturer and Adjunct Assistant Professor, Dept. Physiology and Pharmacology, West Virginia University, Morgantown, West Virginia, USA.

2002-2006 Research Assistant Professor, Dept. Physiology and Pharmacology, West Virginia University, Morgantown, West Virginia, USA.

2000-2002 Instructor (Post doctoral fellow), Dept. Physiology and Biophysics, University of Mississippi Medical Center, Jackson, Mississippi, USA.

1999-2000 Research Associate (Post doctoral fellow), Dept. Physiology and Biophysics, University of Mississippi Medical Centre, Jackson, Mississippi, USA

1995-1997 Research Fellow, Pharmacology Unit, Dept. Medical Laboratory Science, RMIT University, Melbourne, Australia.

Other Appointments

1997-1998 Medical Representative, Wyeth Pharmaceuticals, Melbourne, Australia.

Previous Part-time Employment

1991-1994 Practical Class Demonstrator, Dept. Pharmacology, Monash University, Melbourne, Australia.

1994-1995 Demonstrator/Tutor, Human Physiology, School of Biological and Chemical Sciences, Deakin University, Melbourne, Australia.

1998-1999 Research Officer (Part-time), Demonstrator/Lecturer, Dept. Pharmacology, Monash University, Melbourne, Australia.

1998 Lecturer, Pharmacology, School of Biological Sciences, Victorian University of Technology, Melbourne, Australia

AWARDS AND HONORS

2010 American Society of Pharmacologists and Experimental Toxicologists, Education Division Travel Award for Experimental Biology

2000-2002 AHA Postdoctoral Fellowship

2000 Young Investigator Travel Award, Cardiovascular Section of the American Physiological Society.

1999 Postdoctoral Travel Grant (National Heart Foundation of Australia)

1995-1997 Postdoctoral Research Fellowship (RMIT University, Melbourne, Australia)

1994 Grant-in-Aid for International Conference Attendance (Monash University, Melbourne, Australia)

1994 International Travel Grant (Australasian Society of Clinical and Experimental Pharmacologists and Toxicologists)

1994 Monash University Postgraduate Writing-Up Award

1992 National Student Travel Grant (Australasian Society of Clinical and Experimental Pharmacologists and Toxicologists)

1991 National Student Travel Grant (Australasian Society of Clinical and Experimental Pharmacologists and Toxicologists)

1991-1994 Australian Postgraduate Research Award/Australian Postgraduate Award

1986 Scholarship (Rotary) A.I.D.C. National Science Summer School, Canberra, Australia.

PROFESSIONAL SOCIETIES

International Association of Medical Science Educators
American Dental Association
American Society for Pharmacology and Experimental Toxicology

INSTITUTIONAL COMMITTEES

Member SoM Admission Committee for MD Degree 2013 – 2020
Member MS Curriculum Committee 2013 – current
Member Curriculum Committee Neurosciences Sub-committee Jan 2019 - current
Member Course Directors' Sub-committee 2013 - current
Substitute (for Karen Woodfork) Member MSII Course Directors' Sub-committee 2013 - current
Chair Departmental Committee on Teaching Excellence 2012 – current
Department of Physiology and Pharmacology P&T Committee – Alternate years (current)
School of Dentistry Biomedical Sciences Committee 2005 - current
Member Institutional Review Board 2008 - 2012
Vice chair Institutional Review Board 2012 – 2013
Many ad hoc departmental committees including faculty search committees, finance committees, scholarship/award committees

Chair Faculty Events Committee – 2018-current

GRANTS AND CONTRACTS

Previously funded

2004-2007 NIH R21: “Age, Gender and Skeletal Muscle Microcirculation”

2003-2004 Research Development Grant, West Virginia University: “Effect of Aging on Microvascular Function.”

2000 – 2002 American Heart Association Postdoctoral Fellowship: “The Role of ATP in Metabolic Regulation of Blood Flow”.

1995-1997 Royal Melbourne Institute of Technology Postdoctoral Fellowship: “Role of Endothelin-1 in Vascular Reactivity, *in vivo*.”

TEACHING

Note that teaching listed is current teaching only. I have been teaching since I was a graduate student in Australia and topics are too extensive to list. Most of my previous teaching experiences were in pharmacology and include lectures and wet labs but I also did labs for physiology.

Undergraduate Medical Education

Course Coordinator PCOL 449, Drugs and Medicines
50 min. lectures on the following:

- Intro to PCOL
- Drug Metabolism
- Drug Excretion
- Adverse Drug Reactions
- Intro to Autonomic Drugs
- Adrenergic Antagonists
- Adrenergic Agonists
- Cholinergic Agonists
- Cholinergic Antagonists
- Drugs for Dyslipidemias
- Drugs for Diabetes and Thyroid Disorders
- Intro to CNS drugs
- Drugs for Neurodegenerative Disorders and Epilepsy
- Antihistamines and Drugs for Asthma and COPD
- Drugs of Abuse 1 and 2
- GI Drugs

Graduate Medical Education

Course Co-coordinator, PCOL 801, Medical Pharmacology
50 min. lectures on the following:

- Drug Metabolism I
- Drug Metabolism II
- Drug Excretion
- Adverse Drug Reactions
- Intro to Autonomic Pharmacology
- Norepinephrine transmission
- Adrenoceptors
- Drugs for Dyslipidemias
- Anxiolytics
- Antipsychotics
- Antidepressants
- Bipolar disorder
- ADHD
- Opioids I
- Opioids II
- Migraine
- Skeletal muscle relaxants
- Antiemetics and prokinetic drugs

In addition to lecturing and helping Karen Woodfork, I am responsible for putting together all 11 exams in medical pharmacology. These are held every three weeks throughout the academic year and involve much coordination with instructors in the course.

Course Coordinator, PCOL 549, Applied Pharmacology
50 min. lectures are the same as for PCOL449 (students from both classes are in the same lecture)

2 hour small group activities for PCOL 549 only

- Pharmacokinetics
- Pain and inflammation
- Drug Toxicity
- Advanced Autonomics
- Metabolic Diseases
- Performance Enhancing Drugs
- Pulmonary and Migraine Drugs
- Cancer and HIV

Health Professions Education

Course Coordinator PCOL 760, Pharmacology and Toxicology for Dental Students

- Intro to Dental Pharmacology
- Drug Metabolism and Excretion

Adverse Drug Effects
Intro to Autonomics
Adrenergic Pharmacology
Cholinergic Pharmacology
Intro to CNS Pharmacology
Muscle Relaxants
Sedative-Hypnotics
Asthma
Intro to endocrine drugs

Course Coordinator for PCOL 763: New course began fall 2016 for 3rd year dental students. 2 hrs of applied pharmacology once a week for 15 weeks. TBL-like format with some didactic.

Intro/Pharmacokinetics/Acetaminophen toxicity
Pregnancy and lactation
Treatment of pain
Sedative-hypnotics
Drugs of abuse
Cardiovascular
Cancer chemotherapy
Gastrointestinal drugs
Pharmacology board review

Course Instructor PCOL 260-Distance Learning, online summer offering

I teach this 3 credit section alone during the summer semester. I have been teaching it for over 10 years.

Course Coordinator, DENT 765, Applied Pharmacology for Dental Residents (online)

I teach this 1 credit course alone in the fall

Invited Lectures and Presentations

Hammer LW. (Fall 2020) Covid Chaos: Teaching higher education during an global pandemic – departmental seminar for Dept. of Physiology and Pharmacology, WVU

Hammer LW. (2015 – current) Every year I give a guest lecture for Dr. Corrie Mancinelli in her Geriatric Physical Therapy course. I lecture on polypharmacy in the elderly. Most years I have 2 hrs to give this lecture.

Woodfork, KW and Fink, LW. (2012) Developing good multiple choice questions. Departmental seminar series, open to all HSC faculty, staff, and graduate students.

Hammer L.W. (2007) Developing good multiple choice questions – presentation for WVU medical pharmacology teaching faculty, September 2007.

Hammer L.W., Smith D.J., and Woodfork, K.A. (2007) Multiple choice question writing workshop – workshop for WVU medical pharmacology teaching faculty, September 2007.

Hammer L.W. (2005) The effect of age and gender on skeletal muscle blood flow – departmental seminar for Dept. Physiology and Pharmacology, WVU.

Hammer L.W. (2004) Regulation of skeletal muscle microcirculation – invited lecture for cardiology residents, WVU.

Hammer L.W. (2004) Age, gender and the microcirculation – presentation for WVU Center for Cardiovascular and Respiratory Sciences.

Hammer L.W. (2001) Regulation of skeletal muscle microcirculation – invited lecture for Department of Pharmacology, Monash University, Australia

Hammer L.W. (2001) Regulation of skeletal muscle microcirculation – departmental seminar for Dept. Physiology and Biophysics, University of Mississippi Medical Center, MS.

Hammer L.W. (2000) How to give a scientific presentation – journal club presentation for post doctoral fellows and post graduate students in Dept. Physiology and Biophysics, University of Mississippi Medical Center, MS

Abstracts Presented:

Hammer, L.W., Davis, E.A. & Story, M.E. (1990). Peripheral dopamine receptors may be involved in the hypotensive actions of N-methyl-N-propyl-2-aminotetralin. *Clin. exp. Pharmacol. Physiol.,* **Suppl. 17:** 29.

Hammer, L., Davis, E.A. & Story, M.E. (1991). The rat autoperfused uterine vascular bed. *Clin. exp. Pharmacol. Physiol.,* **Suppl. 18:** 12.

Hammer, L.W., Okuniewski, R. & Davis, E.A. (1993). Endothelial modulation of rat uterine vascular reactivity may be influenced by ovarian steroids. *Clin. exp. Pharmacol. Physiol.*, **Suppl. 1:** 28.

Okuniewski, R., **Hammer, L.W**. & Davis, E.A. (1993). The effect of Nϖ-nitro-L-arginine (NOLA) on pressor responses to NA and angiotensin II (AII) varies with pregnancy and steroid hormone treatment in the rat. *Clin. exp. Pharmacol. Physiol.,* **Suppl. 1**: 54

Davis, E.A., **Hammer, L.W**. & Okuniewski, R. (1994). Ovarian steroids may selectively regulate endothelial modulation of uterine vascular reactivity during pregnancy. *Can. J. Physiol. Pharmacol.*, **72 (Suppl. 1):** 185.

Hammer, L.W., Davis, E.A. & Story, M.E. (1994). The rat autoperfused uterine vascular bed. *Can. J. Physiol. Pharmacol.,* **72 (Suppl. 1):** 185.

Hammer, L.W. & Reid, J.J. (1996). ET-1 enhances constrictor responses to noradrenaline in the mesenteric vasculature of anaesthetized rats. *Proc. Australas. Soc. Clin. Expet. Pharm. Tox.*, pg 100.

Hammer, L.W., Ligon, A.L. & Hester, R.L. (2000). Role for ATP in regulation of arteriolar diameter in the microcirculation of hamsters. *Proc. Experimental Biology, FASEB J.* **14(4):**A142

Hammer, L.W., Ligon, A.L. & Hester, R.L. (2000). Release of prostanoids from paired venules regulates functional vasodilation of 3rd-order but not 4th-order arterioles. *54th Annual Fall Conference & Scientific Sessions of the Council for High Blood Pressure Research.*

Hester, R.L., **Hammer L**. and Nuttle, L.C. Venular endothelial control of arteriolar diameter during functional hyperemia*. Annals of Biomedical Engineering 28:S-72, 2000.*

Choi, J, **Hammer, L.W.,** Ligon, A.L., Overstreet, C.R. and Hester, R.L. (2001) ATP-stimulated calcium-dependent synthesis of prostacyclin from venous endothelial cells. *55th Fall Conference of the High Blood Pressure Research Council, September, 2001, Chicago, IL.*

Hammer, L.W., Choi, A.L., Ligon, A.L., Overstreet, C.R. and Hester, R.L. (2001). Evidence of a role for ATP-stimulated release of venular prostacyclin in functional hyperemia. *7th World Congress for Microcirculation, August, 2001, Sydney, Australia.*

Hammer, L.W., Overstreet, C.R. & Hester, R.L. (2001) Inhibition of functional hyperemia by minimal concentrations of indomethacin in hamster cremaster muscle. *Proceedings for Experimental Biology, FASEB J. 15(4):*A123.

Hammer, L.W., Overstreet, C.R., Burton, A.R., Choi J. & Hester, R.L. (2002) ATP stimulates the release of prostacyclin from perfused veins from hamster hindlimb. *Proceedings for Experimental Biology, FASEB J. 16(3pt2),* A823.

Hammer, L.W., Overstreet, C.R. & Hester, R.L. (2003). Arachidonic acid metabolites regulate functional hyperemia*. Proceedings for Experimental Biology, April 2003, San Diego, USA.*.

Hammer, L.W. & Boegehold, M.A. (2004) Functional hyperemia is impaired in 12 month old male rats. *Proceedings for Experimental Biology, April 2004, Washington DC, USA*

Hammer, L.W & Boegehold, MA (2005) Active hyperemia is impaired in 12 month old female rats. *Proceedings for IUPS and Experimental Biology, April, 2005, San Diego, USA.*

Marvar, P.J., **Hammer L.W.,** & Boegehold, M.A. Dietary salt reduces hydrogen peroxide-dependent dilation in contracting muscle. *FASEB J, 2006 Abstract # 6799*

Peer-reviewed manuscripts:

Hammer, L.W., Davis, E.A. & Story, M.E. (1992). N-methyl-N-n-propyl-2-aminotetralin (MePr-2-AT) lowers blood pressure in anaesthetized rats via stimulation of DA_2 receptors. *Pharmacol. Comm*., **1**: 361-366.

Hammer, L.W., Storey, M.E. & Davis, E.A. (1996). Nω-nitro-L-arginine (NOLA) increases pressor responses to noradrenaline in late pregnant but not non-pregnant rats anaesthetized with α-chloralose and sodium pentobarbitone. *Pharmacol. Comm.*, **7**: 157-163.

Crachi, M.T., **Hammer, L.W.** & Hodgson, W.C. (1999). A pharmacological examination of venom from the Papuan taipan (*Oxyuranus scutellatus canni*). *Toxicon,* **37**:1721-1734.

Crachi, M.T., **Hammer, L.W.** & Hodgson, W.C. (1999). The effects of antivenom on the in vitro neurotoxicity of venoms from the taipans *oxyuranus scutellatus, oxyuranus microlepidotus* and *oxyuranus scutellatus canni*. *Toxicon*, **37**:1771-1778.

Hammer, L.W., Ligon A.L., Hester, R.L. (2001). Differential inhibition of functional dilation of small arterioles by indomethacin and glibenclamide. *Hypertension,* 37(2 Part 2):599-603.

Hammer, L.W., Ligon, A.L. & Hester, R.L. (2001). ATP-mediated release of arachidonic acid metabolites from venular endothelium causes arteriolar dilation. *Am J Physiol Heart Circ Physiol.,* 280(6):H2616-22.

Choi, J., **Hammer, L.W**. and Hester, R.L. (2002). Calcium-dependent synthesis of prostacyclin in ATP-stimulated venous endothelial cells. *Hypertension,* 39(2):581-585.

Hester, R.L. and **Hammer, L.W**. (2002). Venular-arteriolar communication in the regulation of blood flow. *Am. J. Physiol. Reg. Int. Comp. Physiol.* 282:R1280-R1285.

Hammer, L.W., Overstreet, C.R., Choi, J. and Hester, R.L. (2003) ATP stimulates the release of prostacyclin from perfused veins isolated from the hamster hindlimb. *Am J Physiol Regul Integr Comp Physiol.* 285(1):R193-R199.

Hammer, L.W & Boegehold, MA (2005). Functional hyperemia is reduced in skeletal muscle of aged rats. *Microcirculation*, 12(6):517-526.

Marvar, P.J., **Hammer, L.W.** & Boegehold, M.A. (2007) Hydrogen Peroxide-Dependent Arteriolar Dilation in Contracting Muscle of Rats Fed Normal and High Salt Diets. *Microcirculation*. 14(8):779-791

Adams, J. R. & **Hammer-Fink, L**., (2008). Shy children: How can we intervene? *Virginia Counseling Association Journal,* 30 (complete citation unknown – this publication came

from a class assignment when I was doing a part-time Masters in Counseling at WVU. Dr. Adams asked if she could write my assignment up for a journal and I consented.)

Theses and Dissertations:

Hammer, L.W. Assessment of the dopaminergic properties of N-methyl-N-n-propyl 2-aminotetralin. BSc (Hons) Thesis, Monash University, Australia, 1990.

Hammer, L.W. Changes in cardiovascular reactivity of the rat during pregnacy: a role for the vascular endothelium. Ph.D. Dissertation, Monash University, Australia, 1994.

RECEIVED
OCT - 1
DEPARTMENT OF PHYSIOLOGY

Curriculum Vita
John L. Hankinson, Ph.D.
September 1992

Education:

Public Schools	Valdosta, Georgia
B.E.E.	June 1965, Georgia Institute of Technology, Atlanta, Georgia
M.S.E.E.	June 1967, Georgia Institute of Technology, Atlanta, Georgia
Ph.D. Engineering	December 1974, West Virginia University, School of Engineering, Department of Electrical Engineering, Morgantown, West Virginia

Positions Held:

March 1981 to present - Chief, Clinical Investigations Branch, Division for Respiratory Disease Studies, NIOSH, Morgantown, West Virginia, Commissioned Officer U. S. Public Health Service (Engineer Director, O-6, USPHS, July 1982).

July 1986 to present - Adjunct Associate Professor, Department of Physiology, West Virginia University School of Medicine, Morgantown, West Virginia.

March 1989 - May 1989 - Acting Deputy Director, Division of Respiratory Disease Studies, NIOSH, Morgantown, West Virginia.

January 1986 to March 1989 - Acting Chief, Epidemiological Investigations Branch, Division of Respiratory Disease Studies, NIOSH, Morgantown, West Virginia.

January 1986 to October 1988 - Acting Chief, Examination Processing Branch, Division for Respiratory Disease Studies, NIOSH, Morgantown, West Virginia.

July 1976 to June 1986 - Adjunct Assistant Professor, Department of Physiology, West Virginia University School of Medicine, Morgantown, West Virginia.

November 1974 to March 1981 - Chief, Medical Instrumentation Section, Clinical Investigations Branch, Appalachian Laboratory for Occupational Safety and Health, NIOSH, Morgantown, West Virginia (Senior Engineer, O-5, USPHS, October 1976).

January 1972 to November 1974 - Graduate Trainee, Appalachian Laboratory for Occupational Safety and Health, and West Virginia University, Morgantown, West Virginia.

August 1968 to June, 1976 - Instructor (part-time), Physiology and Biophysics, West Virginia University School of Medicine, Morgantown, West Virginia.

August 1968 to January 1972 - Chief Biomedical Engineer, Appalachian Laboratory for Occupational Safety and Health, Morgantown, West Virginia (Senior Assistance Engineer, O-4 USPHS, October 1971).

November 1966 to August 1968: Chief of Calibration and Standardization Unit, Southwestern Radiological Health Laboratory,
U. S. Public Health Service, Las Vegas, Nevada.

Awards:

February 1971 and May 1977 - Medals of Commendation for contributions to the research programs on occupational diseases of the lungs.

1987 - Unit Commendation for contributions to the National Prevention Strategies for the Ten Leading Work-Related Diseases and Injuries.

May 29, 1987 - Meritorious Service Medal in recognition for exceptional work and contributions to the mission and programs of the United States Public Health Service, awarded by the Surgeon General.

1989 - Unit Commendation for contributions to the development of the HF4 spirometry system.

October, 1991 - Medal of Commendation for exemplary performance of duty.

Professional Societies:

Institute of Electrical and Electronic Engineers (Chairman, Upper Monongahela Subsection, June 1988 to May 1989).

Eta Kappa Nu, Honorary Engineering Society

American Thoracic Society

Past Committees:

Invited Member, American Thoracic Society, Lung Volumes Standardization Working Group (1990-present)

Member, National Institutes of Health Task Force on Research and Education for the Prevention and Control of Respiratory Disease (1989-September 1992)

Invited Participant, American Thoracic Society Workshop - Lung Function Testing: Selection of Reference Values and Interpretative Strategies

Board of Directors, American Lung Association of West Virginia (1978-1990) (1991-present), President of Board (1986-1988)

Invited Participant at Alta Conference on Standardization of Single Breath Diffusion Capacity (1984)

Steering Committee for Task Force on Pulmonary Technology, National Heart, Lung, and Blood Institute (September 1981)

Invited Participant at American Thoracic Society Snowbird Workshop on Standardization of Spirometry (1979)

Member, Spirometry Subcommittee, Association for Advancement of Medical Instrumentation (AAMI)

Occupational Lung Disease Committee, American Lung Association of West Virginia (past chairman)

Medical Devices Committee, American Thoracic Society (1978-80)

Current Committees:

Chairman, Proficiency Standards for Clinical Pulmonary Laboratories Committee, American Thoracic Society (1989-Present)

Chapter Representative to American Thoracic Society, West Virginia Thoracic Society (1986-Present)

Personal Data:

Date of birth: December 22, 1943

Place of birth: Atlanta, Georgia

Martial Status: Married Ellen Adair, June 25, 1967
Two Children

Programming Languages and Statistical Packages:

Turbo C++, SAS, MATLAB, FORTRAN, BASIC, and IBM-PC Assembly Language

Publications:

1. Hankinson JL, and Lapp NL: Time-pulse generator for flow-volume curves. J Appl Physiol 29:109-110, July 1970.

2. Lapp NL, Hankinson JL, Burgess D, and O'Brien R: Changes in ventilatory function in coal miners after a work shift. Arch Environ Health 24:204-208, 1972.

3. Hankinson JL and Rose WD: Automated spirometry system. Proc San Diego Biomedical Symposium 1974, Vol 13, San Diego, Calif, February 6-8, 1974.

4. Hankinson JL: Feature selection applied to coal miners' spirograms. PhD Dissertation, West Virginia University, 1974.

5. Lapp NL, Hankinson JL, Amandus H, and Palmes ED: Variability in the size of airspaces in normal human lungs as estimated by aerosols. Thorax 30:293-299, June 1975.

6. Fairman P, Hankinson JL, Imbus H, Lapp NL, and Morgan WKC: A pilot study of closing volume in byssinosis. Brit J Industr Med 32:235-238, 1975.

7. Hankinson JL, Reger RB, Fairman RP, Lapp NL, and Morgan WKC: Factors influencing expiratory flow rates in coal miners. Proc Fourth International Symposium on Inhaled Particles and Vapours, September 1975, Edinburgh, Scotland.

8. Hankinson JL: Computer determined closing volumes. Computers and Biomedical Research 10, 247-257, 1977.

9. Gardner RM, Hankinson JL, and West BJ: Testing spirometers - ATS Standards. Report of Snowbird Workshop on Standardization of Spirometry, American Thoracic Society News, Summer 1977, Vol 3, No. 3.

10. Hankinson JL, Reger RB, and Morgan WKC: Maximal expiratory flows in coal miners. Amer Rev Respir Dis 116:175-180, 1977.

11. Hankinson JL, Palmes ED, and Lapp NL: Pulmonary air spaces size in coal miners. Amer Rev Respir Dis 119:391-397, March 1979.

12. Hankinson JL and Gardner RM: Waveform selection for spirometer testing. Proc Annual Meeting, Assoc. for the Advancement of Medical instrumentation (AAMI), Las Vegas, Nevada, May 20-24, 1979.

13. Hankinson JL and Stewart JE: Problems associated with processing large numbers of chest radiographs. Proc Conference On Pattern Recognition, Institute of Electrical and Electronic Engineers (IEEE), Chicago, Ill., August 1979.

14. Gardner RM, Hankinson JL and West BJ: Evaluating Commercially Available Spirometers. Amer Rev Respir Dis 121:73, January 1980.

15. Hankinson JL: Computerized system for interpretation of radiographs for pneumoconiosis. Proc Symposium on the Optimization of Chest Radiography, Madison, Wis., April 30 - May 2, 1979, June 1980.

16. Gardner RM, Hankinson JL: Spirometer testing (correspondence). Amer Rev Respir Dis 122:1730175, 1980.

17. Hankinson JL: Instrument Specifications. Chapter VI, in NIOSH Spirometry Manual, NIOSH publication, November, 1981.

18. Gardner RM, Glindmeyer HW and Hankinson JL: Standardization of Lung Function Measurements: Spirometry and Field Testing. Chapter 4 in Occupational Lung Disease: Research Approaches and Methods, H. Weill and M. Turner-Warwick, eds., Marcel Dekker, Inc., New York, 1981.

19. Hankinson JL, and Gardner RM: Standard Waveforms for Spirometry Testing. Amer Rev Respir Dis, 126:362-64, 1982.

20. Hankinson JL: Automated pulmonary function testing: Interpretation and standardization. Annuals of Biomedical Engineering 9:633-643, 1981.

21. Ames RG, Attfield MD, Hankinson JL, Hearl F, and Reger RB: Acute respiratory effects of exposure to diesel emissions in coal miners, Amer Rev Respir Dis, 125:39-42, 1982

22. Hankinson JL: Quality Control of Computers Used in Pulmonary Function Laboratories, Respiratory Care 27(7):830-833, 1982.

23. Reger RB, Hancock J, Hankinson JL, Hearl F, and Merchant JA: Coal Miners Exposed to Diesel Exhaust Emissions, Ann Occup Hyg 26 (1-4) 799-815, 1982.

24. Cocke JB, Castellan RM, Sasser PE, and Hankinson JL: Pulmonary function response to washed and unwashed cotton, Proc Seventh Cotton Dust Research Conference, San Antonio, TX, 1983.

25. Gardner RM, Crapo R, Billings RG, Shezeoka JW and Hankinson JL: Spirometry - What Paper Speed, Chest 84(2):161-165, 1983.

26. Hankinson JL, and Viola JO: Dynamic BTPS correction factors for spirometric data, J Appl Physio 55(4):1354-1360, 1983.

27. Millner PD, Perkins HH, Jacobs RR, Castellan RM, and Hankinson JL: Microbiological characteristics of dusts from standard and washed cotton, Proc Seventh Cotton Dust Research Conference, San Antonio, TX, 1983.

28. Hodous TK, Petsonk L, Boyles CB, Hankinson JL, and Amandus H: Effects of added resistance in obstructive lung disease, Amer Rev Respir Dis, 1983; 128:943-48.

29. Castellan RM, Hankinson JL, and Olenchock SA: Acute human ventilatory response to card-generated dust from cotton representing reference standard cotton dust, Proc Eighth Cotton Dust Research Conference, 35-37, 1984.

30. Olenchock SA, Castellan RM, Hankinson JL: Endotoxin contamination of cotton: Area of growth/varieties. Proc Eighth Cotton Dust Research Conference, 1984.

31. Sepulveda M-J, Hankinson JL, Castellan RM and Cocke JB: Cotton-induced bronchoconstriction detected by a forced random noise oscillator. British Journal of Industrial Medicine 1984; 41:480-86.

32. Castellan RM, Olenchock SA, Hankinson JL, Millner PD, Cocke JB, Bragg K, Perkins HH, and Jacobs RR. Acute bronchoconstriction induced by cotton dust: Dose-related responses to endotoxin and other dust factors. Annuals of Internal Medicine, 1984; 101:157-63.

33. Sepulveda M, Castellan RM, Hankinson JL, and Cocke JB: Acute lung function response to cotton dust in atopic and non-atopic individuals. British Journal of Industrial Medicine 1984; 41:487-91.

34. Sepulveda M, and Hankinson JL, Castellan RM: Helium-oxygen spirometry in experimental cotton dust exposure. Lung 1984; 162:347-56

35. Castellan RM, and Hankinson JL, Cocke JB: Acute respiratory reactions to cotton dust in health non-textile workers. Proc Beltwide Cotton Dust Research Conference, January 1985, New Orleans, LA.

36. Petersen M, and Hankinson JL: Spirometry reference values for nonexposed blue-collar workers. Journal of Occupational Medicine, 1985; 27:644-50.

37. Hankinson JL, Keimig DG, Kinsley KB, and Castellan RM: Effects of spirometer temperature on FEV1 shift changes. Proc Beltwide Cotton Dust Conference, January 1986, Las Vegas, Nevada.

38. Hankinson JL: Pulmonary function testing in the screening of workers: Guidelines for instrumentation, performance, and interpretation. Journal of Occupational Medicine, 1986; 28:1081-1092.

39. Hankinson JL, Castellan, RM, Kinsley, KB and Keimig, DG: Effects of spirometer temperature on FEV1 shift changes. Journal of Occupational Medicine, 1986; 28:1222-1225.

40. Hankinson JL, Doemeny L, Gamble J, Green F, Hearl F, Hodous TK, Major PC, Melius JM, Moorman WJ, and Sepulveda M-J. Proposed National Strategies for the Prevention of Leading Work-Related Diseases and Injuries, Part 1, Occupational Lung Diseases. Published by the Association of Schools of Public Health under a Cooperative Agreement with the National Institute of Occupational Safety and Health, 1986.

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Steven L. Hardy, Ph.D.
Curriculum Vitae

Date: November 10, 2021

Home Address: 937 Pride Ridge Road, Fairmont, WV 26554

Office Address: 3077A Health Sciences Center North, Morgantown, WV 26506

Phone: 304.293.1501

FAX: 304.293.3850

E-mail: shardy@hsc.wvu.edu

Date of Birth: December 27, 1973

Place of Birth: Fairfax, VA

Citizenship: United State of America

Current Position: Teaching Professor, Department of Physiology and Pharmacology, West Virginia University

Education

Degree	School	Years
BA – Biology	WVU	1992-96

Postgraduate/Postdoctoral Training

Degree	School	Years
Ph.D. – Physiology	WVU	1996-2003
N/A	UPMC	2003-4

Current Academic Positions and Appointments

Appointment	Years
Teaching Professor, Dept. of Phys/Pharm	2019-present

Previous Academic Appointments

Appointment	Years
Teaching Associate Professor, Dept. of Phys/Pharm	2010-2019
Assistant Professor, Pierpont C&TC	2004-10
Adjunct Assistant Professor, WVU	2006-2010
Adjunct Faculty, Chatham College	2003

Professional Societies

Role	Society	Years
Member	West Virginia Community College Association	2005-2010
Member	Human Anatomy and Physiology Society	2006-2012
Member	American Physiological Society	2010-present
Member	Society for Neuroscience	2001-present

Institutional Committees

Role	Committee	Years
Member	Excellence in Teaching C.	2010-present
Member	MD Course Directors C.	2012-2021
Member	SOM Curriculum C.	2012-2021
Member	Student Instruction C.	2011-2013
Member	University C. on Student Rights and Responsibilities	2011-2018
Member	Non-Human Use of Radiation and Radionuclides C.	2014-present
Member	SOM Committee on Admissions	2015-2021, 2022-present

Health Professions Education - Current

FALL – blocks of teaching

PSIO 743: Human Physiology; Nervous System, Digestive System, Respiratory System; Dental section (100) Coordinator

CCMD 801: Medical Biochemistry and Cell Function; Thyroid hormone and Steroid hormone synthesis and function (4 lecture hours)

PSIO 820: Principles of Medical Physiology; Digestive System (8 lecture hours)

SPRING – full semester

PSIO 107: Anatomy and Physiology, All physiological systems; Pre-nursing/Dental Hygiene, *Coordinator*

PSIO 820: Principles of Medical Physiology; Temperature Regulation (1 lecture hour)

SPRING – partial semester

PSIO 760/820 –blended online, Cellular, Muscle, Respiratory Physiology, Leave-of-absence medical students*; Coordinator*

SUMMER -6- and 12-week courses

PSIO 107 – online (12-week), Anatomy and Physiology, Pre-nursing/Dental Hygiene, *Coordinator*

PSIO 801 – online (6-week), 2 sections, Physiology, Remediating medical students, *Coordinator*

PSIO 760 – online (6-week), 2 sections, Physiology, Remediating dental students, *Coordinator*

Health Professions Education – Past

FALL – full semester

Problem Based Learning, basic science concepts in relationship to disease states, Medical Students, Co-coordinator (2011-2019)

PSIO 241 – UG physiology course, Respiratory and Endocrine systems (2011-2017)

PSIO 441 – UG physiology course, Respiratory, Endocrine and Reproduction systems (2010-2016)

PCOL 549, Thyroid and Diabetes pharmacology lectures (2)

Graduate Education

FALL – blocks of teaching

BMS 747/777, Foundations 1& 2: Neuromuscular anatomy/physiology lectures (6 lectures), Basic Science graduate students (2015-2020)

BMS 793A Section 002: Introduction to Disciplines in the Biomedical Sciences: Foundations in Physiology Module; Excitable Cells and Neuromuscular Communication; Coordinator

SPRING – block of teaching

PSIO 751: Graduate Physiology and Pharmacology 2, neurophysiology block, Phys/Pharm graduate students (2014-current)

Health Professions Education at Other Institutions

Regularly taught courses at Pierpont Community and Technical College

BIOL 1170, Human Anatomy and Physiology Lecture, multiple sections in the Fall and Spring semesters, one section each in Summer I and II, and one full-summer section, pre-nursing and nursing and other Allied Health students

BIOL 1170, Human Anatomy and Physiology Laboratory, multiple sections in the Fall and Spring semesters, two sections for each of Summer I and II, and one full-summer section, pre-nursing and nursing and other Allied Health students

BIOL 1170, Human Anatomy and Physiology Online, one section Summer II semester (2007), pre-nursing and nursing and other Allied Health students

VETT 1170, Anatomy and Physiology for Veterinary Technicians Lecture, one section in the Fall semester, veterinary technician students

VETT 1170, Anatomy and Physiology for Veterinary Technicians Laboratory, one section in the Fall semester, veterinary technician students

VETT 1199, Reproductive Physiology for Veterinary Technicians, one section in the Fall Semester, veterinary technician students

SCIE 1110, Chemistry of Life, one section in the Spring semester, general undergraduate students

Occasionally taught courses at Pierpont Community and Technical College

EMMS 1199, Human Anatomy and Physiology for EMS Lecture, one section in the Fall 2004 semester, emergency medical technician students

VETT 2299-01, Diagnostic Imaging, one section in the Fall 2004 semester, veterinary technician students

VETT 2299-02, Advanced Anatomy and Physiology, one section in the Fall 2004 semester, veterinary technician students

Course taught at Chatham College

BIO 701: Human Physiology (for Physical Therapy graduate students), one section in the Fall 2003 semester, physical therapy students

Other Educational Duties Concerning Health Professions Education

FALL – full semester

Problem Based Learning, Co-Coordinator, planning, in charge of WV-STEPS activities

SPRING – full semester

PSIO/NBAN 107, Coordinator and sole Instructor, all duties

Problem Based Learning, Co-Coordinator, planning, in charge of WV-STEPS activities, substitute facilitator

PSIO 760 - online, Coordinator, scheduling, answer student questions, meet with students each week for exams/discussion sessions, format/administer/grade exams

SUMMER – 6 week courses

PSIO 770 – online, Coordinator, scheduling, answer student questions, instructor-to-student liaison, organization, format/administer/grade exams, organize and administer NBME Subject Exam in Physiology

PSIO 801 – online, Coordinator, scheduling, answer student questions, instructor-to-student liaison, organization, format/administer/grade exams

SUMMER – 12 week course

PSIO 107, Coordinator and sole Instructor, all duties

Invited Lecture

"Entertaining the Masses, Teaching Generation Z", April 23, 2018, North Carolina State University, Animal Sciences Seminar Series, guest of Dr. Casey Nestor, Assistant Professor, Genetics Program

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Jansen HT, Cutter CT, Anderson GM, Hardy SL, Lehman MN, Goodman RL. 1999 Restricted distribution of estrogen receptor-α containing afferents to the hypothalamic A15 region in the ewe. Annual Meeting of Society for Neuroscience.

Anderson GM, Connors JM, Hardy SL, Valent M, Goodman RL.. 2000 A site of action of estradiol suppression of LH secretion via dopaminergic neurons in the anestrous ewe. Annual Meeting of Society for Study of Reproduction.

Hardy SL, Anderson GA, Valent M, Connors JM, Goodman RL.. 2000 Does estradiol act via β-estrogen receptors in the ovine retrochiasmatic area to inhibit LH secretion in anestrus? Annual Meeting of Society for Neuroscience.

Lehman MN, Coolen LM, Anderson GM, Hardy SL, Skinner DC, Goodman RL. 2000 Do dynorphin neurons in the sheep hypothalamus contain progesterone receptors? Annual Meeting of Society for Neuroscience.

Hardy SL, Anderson GM, Valent, M, Billings HJ, Connors JM, Goodman RL. 2001 Evidence that thyroid hormones (T4) act in the pre-mammallary region (PMR) to allow seasonal anestrus in the ewe. Annual Meeting of Society for Neuroscience

Hardy SL, Valent M, Connors JM, Goodman RL 2001 Seasonal response to local administration of estradiol to the ovine retrochiasmatic area. Annual Meeting of Society for the Study of Reproduction.

Goodman RL, Anderson GM, Hardy SL, Connors JM, Valent M, Lehman MN. 2002 Neural circuitry responsible for the inhibition of reproductive function in seasonally anestrous ewes. XVIII The International Conference on Reproduction of Farm Animals.

Hardy SL, Anderson GM, Valent M, Connors JM, Lehman MN, Goodman RL.. 2002 The role of the retrochiasmatic area in the seasonal inhibition of reproductive function in the ewe. XVIII The International Conference on Reproduction of Farm Animals.

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Goodman RL Adams, VL, Valent M, Connors JM, Hardy SL, McManus CJ, Hileman SM. 2002 Progesterone increases dynorphin concentrations in the CSF collected from the thrid ventricle of ewes. Annual Meeting of Society for the Study of Reproduction.

Hardy SL, Hileman SM, McManus CJ, Llanza N, Valent M. 2002 Influence of insulin-like growth factor-1 (IGF-1) on circulating levels of tetraiodothyronine (T4) and triiodothyronine (T3) in fasted ewes. Annual Meeting of Society for Neuroscience.

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Book Chapters

Hardy, Steven L. May 2021 *Introduction to Human Anatomy and Physiology, Revised Edition*, Kendall/Hunt Publishing Company, Dubuque, Iowa (eBook format)
Chapter 5: Integumentary System, published May, 2021

Hardy, Steven L. May 2019 *Introduction to Human Anatomy and Physiology, Revised Edition*, Kendall/Hunt Publishing Company, Dubuque, Iowa (eBook format)
Chapter 4: Tissues, published May, 2019

Hardy, Steven L. May 2018 *Introduction to Human Anatomy and Physiology, Revised Edition*, Kendall/Hunt Publishing Company, Dubuque, Iowa (eBook format)
Chapter 3: Cellular Structure, Function, and Metabolism, published May, 2018

Hardy, Steven L. May 2017 *Introduction to Human Anatomy and Physiology, Revised Edition*, Kendall/Hunt Publishing Company, Dubuque, Iowa (eBook format)
Chapter 2: Basic Body Chemistry, published May, 2017

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Web-based Content

Kendall Hunt Publishing Company web-based eBook, assessment and course admin tool: Introduction to Human Anatomy and Physiology for PSIO 107, published – May, 2019.

Manuscript Reviewer

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CURRICULUM VITAE

NAME: **Pingnian He**

EDUCATION:

1982 MD. Tianjin Medical University, Tianjin, People's Republic of China.

1990 Ph.D. Dept. of Human Physiology, School of Medicine, University of California, Davis. Major: Physiology. Minor: Pharmacology. Subspecialty: Cardiovascular system.

POSTDOCTORAL TRAINING:

1990-92 Dept. of Human Physiology, School of Medicine, University of California, Davis (Mentor: F. E. Curry). Research Project: The role of endothelial cell $[Ca^{2+}]_i$ in the regulation of microvessel permeability in response to inflammatory mediators.

PROFESSIONAL EXPERIENCE

1982-84 Assistant Professor, Dept. of Neurology in the Affiliated Hospital to Tianjin Medical University, Tianjin, People's Republic of China.

1984-85 Research Fellow, Dept. of Pharmacology and Neurology, School of Medicine, University of California, Davis.

1985-90 Postgraduate Researcher, Dept. of Human Physiology, School of Medicine, University of California, Davis.

1992-98 Assistant Research Physiologist, Dept. of Human Physiology, School of Medicine, University of California, Davis.

1999-01 Associate Research Physiologist, Dept. of Human Physiology, School of Medicine, University of California, Davis.

2001-06 Associate Professor, Dept. of Physiology, School of Medicine, West Virginia University.

2006-present Professor, Dept. of Physiology and Pharmacology, School of Medicine, West Virginia University.

2013-Jan-Jun Visiting Professor, Department of Vascular and Cellular Biology, Joslin Diabetes Center, Harvard Medical School.

HONORS & AWARDS:

1989 The Grega-Zacharkow Young Investigator Award from Microcirculatory Society for the manuscript entitled "Time course of cytoplasmic calcium $[Ca^{2+}]_i$ in endothelial cells and pericytes during ionomycin induced changes in microvessel hydraulic conductivity.".

1990 Postdoctoral Fellowship Award by "Tobacco-Related Disease Research Program" of University of California.

1991 Travel Award for new investigator in 1991 from the Fifth World Congress for Microcirculation.

1991 The Loren Carlson Award in Physiology for research and teaching from UC Davis

1992 New Investigator Award by "Tobacco-Related Disease Research Program" of University of California.

1995 Dean's Research Awards for application "3D imaging of microvascular structure and endothelium ion concentration *in vivo* using confocal microscopy".

1995 Hibbard E. Williams Award from School of medicine, UC Davis.

1996 FIRST Award: National Heart, Blood, and Lung Institute.

1998 UC Davis Health Science Research Award.

2001 WVU Research Development Award

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PROFESSIONAL SOCIETIES:

American Physiological Society (1989-present)
The Microcirculation Society US (1989-present)
European Microcirculation Society (2006-present)
North American Vascular Biology Organization (2008-present)

PROFESSIONAL SERVICE:

National Committees:

1996-1999 Member and chairman of the Membership Committee of Microcirculatory Society.

1997-2000 American Heart Association, Western States and Texas Affiliates Peer Review Committee.

2003 NIH Heart and Lung Institute, Cardiovascular and Renal (CVB) study section Ad Hoc member.

2003-2007 American Heart Association, Southern and Ohio Valley Affiliate Research Committee.

2004-2010 Editorial Board Member of the journal of *Microcirculation*

2005-2009 Regular member, NIH Heart and Lung Institute, Hypertension and Microcirculation (HM) study section

2007-2009 Member of American Heart Association, Great River Affiliate Research Committee.

2009 Member of NIH CVS special emphasis panel ZRG1 VH-B 95S.

2009- present Member of NIH CSR special emphasis panel ZRG1 VH-B (02).

2010- Editorial board member of Frontiers in Vascular Physiology

2011, 2013 Ad Hoc reviewer NIH Heart and Lung Institute, Hypertension and Microcirculation (HM) study section

2011-2013 Reviewer of NIH CVS special emphasis panel VH-JO2.

Editorial Reviewer:

Am. J. Physiol. (Heart Circ. Physiol.; Lung Cellular and Molecular Physiol.); Microcirculation; Microvascular Research; Rev. Ann. Biomed. Eng.; J. Cell Science; J. Vascular Research, British Journal of Pharmacology, Life Sciences, J. Physiology; Cardiovascular Research; Biomechanics and modeling in mechanobiology; Bioengineering; Nitric Oxide, Circulation Research.

Institutional Committees

2002 Department faculty search committee

2003 Health Sciences Center Graduate Student Admission Sub-committee

2004-2005 Cardiovascular Center faculty search committee

2006-2007 Search Committee for director of Center for Diabetes and Obesity Research

2003-present Research Development and Bridge Grant Review Committee

2010-present Department of promotion and tenure committee

2011-2012 Steering Committee of Cardiovascular center

2011-present Member of faculty mentoring committee

TEACHING/MENTORING

PSIO 241 Elementary Physiology (Paramedical): 2002-2010

Cardiac physiology; Blood vessels and blood pressure; Blood and body defenses

PSIO 791 Advance Physiology Cardiovascular section (Graduate course): 2002-present

Course coordinator, 2007-present

Graduate student lab rotation

Graduate Student Advisory/Thesis Committee

Heath D Skinner MD/Ph.D.	Department of Microbiology
Julie Balch MD/Ph.D.	Department of Physiology
Paul Marvar Ph.D.	Department of Physiology
Wentao Zhang Ph.D.	Department of Physiology
Lori King PhD.	Depart of Physiology
Yen-Chang Lin Ph.D.	Depart of Physiology
Xueping Zhou Ph.D.	Department of Physiology
Sulei Xu Ph.D.	Department of Physiology (Current)
Isha Pradhan Ph.D.	Department of Basic Pharmaceuticals Sciences (Current)

Summer Research Program Mentor

2004 WV-Biomedical Research Infrastructure Network (WV-BRIN) Summer Research program Faculty fellowship mentor

2004 AHA Ohio Valley Affiliate Summer Undergraduate Research Program sponsor.

Postdoctoral Fellows and students Mentor:

Previous (1997-2012):

Postdoctoral Fellow and exchange scholar

Longkun Zhu; Youngjun Li; Ling Ai; Min Zeng; Hong Zhang; Jianjie Wang; Bing Liu; Ke Wen; Qian Wang; Yanyan Jiang, Yanchun Xu, Yan Qian, Gengqian Zhang, Jisiu Zhang, Mingxia Wang, Xiaohui Tan

PhD student: Xueping Zhou

Undergraduate students

Michelle Ilardi; Ballengee, Cortney; Warnick, Natacia; Julian Nwoko; Shan Chen

Current:

Postdoctoral Fellow: Dong Yuan, Christian Stock, Devent Sawant

Graduate student: Sulei Xu (Ph.D), Pete Patrides (MS), Guo Ge (MS)

Undergraduate Student: Shil Parag

GRANT SUPPORT:

Principal Investigator (Pingnian He):

Active:

1/01/07-12/31/13 NIH RO1, National Heart, Blood, and Lung Institute, "Nitric Oxide and Microvessel Permeability in vivo". $1,642,500.

12/01/96-05/31/14 NIH RO1 National Heart, Blood, and Lung Institute, Competing renewal "Cellular Modulation of Microvessel Permeability *in vivo*" $1,831,250 (current cycle of 5 years).

09/01/13-08/31/17 NIH RO1, National Institute of Diabetes and Digestive and Kidney Diseases, "Microparticles and microvascular dysfunction in diabetes". $1,850,000.

Completed:

7/01/90-7/01/92 Postdoctoral Fellowship Award by "Tobacco-Related Disease Research Program" of University of California for the grant entitled "Endothelial barrier injury by tobacco smoke". $40,000.

7/01/92-6/30/95 New Investigator Award by "Tobacco-Related Disease Research Program" of University of California for the grant entitled "Endothelial barrier injury by tobacco smoke", $225,000.

7/01/95-6/30/96 Hibbard E. William's Award for the grant entitled "Endothelial calcium and nitric oxide modulate microvessel permeability", $47,500.

7/01/96-6/30/00 National American Heart Association, Grant-In-Aid application "Functional Calcium-Dependent Modulation of Microvessel Permeability". $132,000.

7/01/98-6/30/00 UC Davis Health Science Research Award, "Microvessel permeability in breast cancer metastasis". $100,000.

7/01/01-6/30/02 WVU Research Development Grant "Cellular Modulation of Microvessel Permeability in Vivo", $12,000.

1/07/03-1/06/04 WVU Program to Stimulate Competitive Research "Confocal Microscopy: in vivo and ex-vivo applications in cardiovascular research" $50,000.

7/01/05-6/30/07 American Heart Association, Ohio Valley Affiliate Grant-In-Aid application "Nitric Oxide and Microvessel Permeability" $130,000.

9/01/12-4/30/13 WV-INBRE pilot grant "Microparticles and diabetes" $25,000.

Co-Investigator:

Active:

7/01/08-06/30/13 NIH-HLBI Training Grant "Research Training in Cardiovascular and Pulmonary Diseases". P.I.: Jamal Mustafa.

Completed:

7/01/92-6/30/01 NIH "Transport Across Capillary Endothelium", (P.I. F.E. Curry).

7/01/98-6/30/00 UC Davis Health Science Research Award, (P.I. C. P. Evans) "Regulation of endothelial cells in human prostate cancer". .

8/11/03-12/30/06 NIH RO1 "Adherens Junction Integrity and Barrier Function" (P.I. Fred Minnear).

7/01/07-12/30/10 American Heart Association, Great River Affiliate Grant-In-Aid (P.I Michel Miller) "Lyme carditis: Borrelia burgdorferi interaction with microvessel in vivo".

Sponsor and mentor:

Active:

4/03/12-3/31/15 NIH National Heart, Blood, and Lung Institute, F32 Ruth L. Kirschstein National Research Service Awards (NRSA) for Individual Postdoctoral Fellows (PI Christian Stork). "Microparticles and vascular dysfunction in diabetes"

7/01/12-6/30/14 American Heart Association, Great River Affiliate, Pre-doctoral fellowship (PI Sulei Xu). "Role of shear stress in microvessel functions".

Completed:

7/01/10-6/30/12 American Heart Association, Great River Affiliate, Pre-doctoral fellowship (PI Xueping Zhou). "ROS and microvessel permeability".

2003 American Heart Association, Undergraduate summer research fellowship.

2005 WV BRIN research program, faculty research fellowship.

PUBLICATIONS

Articles:

1986 Stark, L. G., T. E. Albertson, R. M. Joy, **P. He,** and J. Streisand. The acquisition of a kindled response in developing rats using 24-h intertrial intervals. Dev. Brain Res., 24: 291-294.

1987 Curry, F. E., W. L. Joyner and **P. He**. Modulation of transcapillary exchange in individually perfused microvessels. In "Microcirculation, An Update". (M. Tsuchiya, et al., eds.) Excerpta Medica, Amsterdam. 1987, vol. 1, p.105-108.

1990 **He, P.** The role of calcium as a modulator of permeability in single perfused microvessels. Dissertation. University of California Davis.

1990 **He, P.**, S. N. Pagakis and F. E. Curry. Measurement of cytoplasmic calcium in single microvessels with increased permeability. Am. J. Physiol. 258: H1366-H1374.

1991 **He, P**. and F. E. Curry. Depolarization modulates endothelial cell calcium influx and microvessel permeability. Am. J. Physiol. 261: H1246-H1254.

1993 **He, P**. and F. E. Curry. Albumin modulation of capillary permeability: The role of endothelial cell $[Ca^{2+}]_i$. Am. J. Physiol. 265: H74-H82.

1993 **He, P**. and F. E. Curry. Differential actions of cAMP on changes in microvessel permeability and cell calcium after exposure to ATP. Am. J. Physiol. 265: H1019-H1023.

1994 **He, P**. and F. E. Curry. Endothelial cell hyperpolarization increases $[Ca^{2+}]_i$ and venular microvessel permeability. J. Appl. Physiol. 76(6) 2288-2297.

1995 **He, P**. and F. E. Curry. Measurement of membrane potential of endothelial cells in single perfused microvessels. Microvascular Research. 50: 183-198.

1995 **He, P**. and R. H. Adamson. Visualization of endothelial clefts and nuclei in living microvessels with combined reflectance and fluorescence confocal microscopy. Microcirculation 2: 267-276.

1996 **He, P.**, X. Zhang, and F. E. Curry. Calcium entry through conductive pathway modulates receptor-mediated increase in microvessel permeability. Am. J. Physiol. 271:H2377-H2387.

1997 **He, P.** and F. E. Curry. Use of confocal microscopy to measure $[Ca^{2+}]_i$ in individual endothelial cells in single perfused microvessels. In "Microcirculation", International

Academic Publisher, Beijing.

1997 **He, P.**, B. Liu, and F. E. Curry. Effect of nitric oxide synthase inhibitors on endothelial $[Ca^{2+}]_i$ and microvessel permeability. Am. J. Physiol. 272: H176-H185.

1997 **He, P.**, M. Zeng, and F. E. Curry. Effect of nitric oxide synthase inhibitors on basal microvessel permeability and endothelial $[Ca^{2+}]_i$. Am. J. Physiol. 273: H747-H755.

1998 **He, P.**, M. Zeng, and F. E. Curry. Cyclic-GMP modulates basal and activated microvessel permeability independently of $[Ca^{2+}]_i$. Am. J. Physiol. 274: H1865-H1874.

1999 **He, P.** Understanding vascular structure and function by confocal imaging of endothelial cells *in vivo*. Microscopy and Analysis. 39 (Sept): 9-11, 1999.

2000 **He, P.**, M. Zeng, and F. E. Curry. Dominant role of cAMP in regulation of microvessel permeability. Am. J. Physiol. 278: H1124-H1133.

2000 **He, P.**, J. Wang, and M. Zeng. Leukocyte adhesion and microvessel permeability. Am. J. Physiol. 278: H1686-H1694.

2002 Zeng, M, Zhang H, Lowell, C, and **He P**. Tumor necrosis factor-alpha-induced leukocyte adhesion and microvessel permeability. Am. J. Physiol.Heart and Circ Physiol 283: H2420-2430.

2004 Zhu, L, Schwegler-Berry D, Castranova V, and **He P**. Internalization of caveolin-1 scaffolding domain facilitated by Antennapedia homeodomain attenuates PAF-induced increase in microvessel permeability. Am. J. Physiol.Heart and Circ Physiol. 286: H195-H201.

2005 Bernatchez PN, Bauer PM, Yu J, Prendergast JS, **He P**, Sessa WC. Dissecting the molecular control of endothelial NO synthase by caveolin-1 using cell-permeable peptides. Proc Natl Acad Sci U S A. 102: 761-766.

2005 Zhu, L, Castranova V, and **P He**. FMLP-stimulated neutrophils increase endothelial $[Ca^{2+}]_i$ and microvessel permeability in the absence of adhesion: Role of reactive oxygen species. Am. J. Physiol.Heart and Circ Physiol. 288: H1331-H1338.

2005 Zhu, L and **He P**. Platelet activating factor increases endothelial $[Ca^{2+}]_i$ and nitric oxide production in individually perfused intact microvessels. Am J Physiol, Heart and Circ Physiol 288: H2869-H2877.

2005 Minnear F. L., Zhu L, **He P**. Sphingosine 1-Phosphate Prevents Platelet Activating Factor-Induced Increase in Hydraulic Conductivity in (rat) Mesenteric Venules: Pertussis toxin-sensitive. Am J Physiol, Heart and Circ Physiol. 289: H840-H844.

2006 Zhu, L and **He P**. FMLP-Stimulated Release of Reactive Oxygen Species from TNF-□-Induced Adherent Leukocytes Increases Microvessel Permeability. Am J Physiol, Heart and Circ Physiol. 290: H365-H372.

2006 **He, P**, Zhang H, and Zhu L. Jiang Y. and Zhou X. Leukocyte/Platelet Aggregate Adhesion and Vascular Permeability in Rat Mesenteric Venular Microvessels. Am J Physiol, Heart and Circ Physiol. 291: H591-H372 **(F1000Prime Recommended)**.

2008 Jiang Y, Wen K, Zhou X, Schwegler-Berry D, Castranova V, and **He P**. Three-dimensional localization and quantification of PAF-induced gap formation in intact venular microvessels. Am J Physiol, Heart and Circ Physiol. 295: H898-H906.

2008 **He, P.,** X. Zhou, Y. Jiang, and K. Wen Confocal microscopic investigation of cellular regulation of permeability in intact microvessels. 16th International conference on mechanics in medicine and biology.

2008 Zhou X, Miller MR., Motaleb M, Charon N and **He P.** *Borrelia burgdorferi* directly increases permeability of individually perfused microvessels of rat mesentery via a plasmid-encoded mediator. PLoS One, 3(12): e4101. doi:10.1371/journal.pone.0004101.

2009 Zhou X, Wen K, Yuan Dong; Ai L, and **He P.** Calcium influx-dependent differential actions of superoxide and hydrogen peroxide on microvessel permeability. Am J Physiol, Heart and Circ Physiol. 296: H1096-H1107.

2009 **He, P.** Beyond tie-ing up endothelial adhesion: New insights into the action of Angiopoietin-1 in regulation of microvessel permeability. Cardiovascular Research, 83(1):H1-2.

2010 Zhou X and **He, P.** Endothelial $[Ca^{2+}]_i$ and caveolin-1 antagonistically regulate eNOS activity and microvessel permeability in rat venules. Cardiovascular Research, 87, 340-347.

2010 **He, P.** Leucocyte/endothelium interactions and microvessel permeability: coupled or uncoupled? Cardiovascular Research, 87, 281-290.

2010 Zhang, G, Xu, S, Qian, Y and **He, P.** Sphingosine 1-phosphate (S1P) prevents permeability increases via activation of endothelial S1P receptor 1 in rat venules. Am J Physiol, Heart and Circ Physiol. 299: H1494-1504.

2011 Zhou, X and **He, P.** Improved measurements of intracellular nitric oxide in intact microvessels using 4,5-diaminofluorescein diacetate. Am J Physiol Heart Circ Physiol Heart and Circ Physiol. 301: H108-114, 2011.

2011 Zhou, X and **He, P.** Temporal and spatial correlation of platelet activating factor-induced increases in endothelial $[Ca^{2+}]_i$, NO production, and endothelial gap formation in intact venules. Am J Physiol Heart Circ Physiol. H1788–H1797, 2011. PMID: 21873500.2012.

2012 Yuan, D and **He, P.** Inflammation-induced vascular remodeling alters adhesion protein and cytoskeleton reactions to platelet activating factor and potentiates the permeability increase in rat venules. J Appl Physiol 113: 1110-1120. 2012. PMID: 22837164.

2013 Zhou, X, Wang, M, and **He P.** H_2O_2-induced endothelial NO production contributes to vascular cell injury and increased permeability in rat venules Am J Physiol Heart Circ Physiol. 304: H82-93, 2013. PMID:23086988.

2013 Xu S, Zhou X, Xu Y, Yuan D, and **He P.** Caveolin-1 scaffolding domain promotes leukocyte adhesion by reduced basal endothelial nitric oxide-mediated ICAM-1 phorsphorylation in rat venules. Am J Physiol Heart Circ Physiol 2013 Sep 16. [Epub ahead of print].

Invited Presentations:

1997 Invited Speaker in 2nd Asian Microcirculation Congress, Beijing. "Use of confocal microscopy to measure $[Ca^{2+}]_i$ in individual endothelial cells in single perfused microvessels".

1999 Invited speaker in Experimental Biology, Washington, D.C., Leukocyte-Endothelial Cell Interactions: "Leukocyte adhesion associated changes in ICAM-1 expression and permeability in single perfused rat mesenteric microvessels".

2001 Invited speaker in Experimental Biology, Orlando, Florida. Featured Topic Session "Role of the endothelium in GI inflammation": "PAF and TNF-α-Induced Leukocyte Adhesion and Microvessel Permeability".

2001 Invited seminar by Vascular Biology Institute, Medical College of Georgia, Augusta, GA. "The regulation of microvessel permeability in vivo".

2005 Invited speaker by Special Transatlantic Meeting of Microcirculatory Society and The British Microcirculation Society, New Hampshire "Priming role of TNF-α in fMLP-stimulated neutrophil respiratory burst and microvessel permeability".

2005 Invited seminar by skimmal Cancer Center, San Diago, CA. "The regulation of microvessel permeability in vivo".

2006 Invited seminar by Microvascular laboratory, Bristol University, UK. "The regulation of microvessel permeability in vivo".

2006 Invited seminar by Department of Pharmacology, School of Medicine, Temple University, PA "The regulation of microvessel permeability in vivo".

2007 Invited seminar by Department of Physiology, Medical College of Augusta, "The regulation of microvessel permeability in vivo".

2008 Invited speaker in 16th International conference on mechanics in medicine and biology, Pittsburgh, PA, USA "Confocal microscopic investigation of cellular regulation of permeability in intact microvessels".

2008 Invited seminar at Beijing University Medical Molecular Institute, China, "The regulation of microvessel permeability in vivo" Oct 2008.

2008 Invited Seminar at Tianjin Medical University, China, "The regulation of microvessel permeability in vivo". Oct 2008.

2008 Invited seminar by Department of Pharmacology, University of Illinois College of Medicine. "The regulation of microvessel permeability in vivo" Nov. 2008

2009 Invited seminar by Department of Physiology and Biophysics, University of Louisville School of Medicine: "Inflammation and microvessel permeability" Sept. 2009.

2010 Invited speaker by Beijing University, China for the establishment of Western-Chinese integrated medicine department, Sept. 2010.

2011 Invited speaker by 8th Asian Congress for Microcirculation "Inflammation-induced microvessel remodeling and enhanced permeability response in rat venules". Oct 2011, Bangkok, Thailand.

2013 Invited seminar by Beth Israel Deaconess Medical Center, Hemostasis & Thrombosis division, Harvard Medical School "Microparticles and diabetes-associated microvascular dysfunction". April, 2013.

2013 Invited speaker at Vascular and Cellular Biology, Joslin Diabetes Center, Harvard Medical School "In vivo approaches of investigating microvessel permeability and cell signaling". June, 2013.

Recent Abstracts (5 years):

2009 Zhou, Xueping and **He, Pingnian**. Temporal and spatial investigations of the cellular mechanisms of H_2O_2-induced increases in microvessel permeability in individually perfused rat mesenteric venules. Experimental Biology, New Orleans, 2009.

2009 Zhang, Gengqian, Wang, Qian and **He. Pingnian.** Differential actions of Sphingosine-1 Phosphate (S1P) receptors in the regulation of microvessel permeability in rat mesenteric venules. Experimental Biology, New Orleans, 2009.

2010 Zhang, Gengqian, Zhou, Xueping and **He, Pingnian**. Sphingosine 1-Phosphate (S1P) Prevents Platelet Activating Factor (PAF)-Induced Permeability Increases by activation of

Rac-1 Signaling in Intact Venules. Experimental Biology, Anaheim, 2010 (**Received 2010 Pappenheimer Postdoctoral Travel Award**).

2010 Dong Yuan, Xueping Zhou, and **Pingnian He**. Enhanced acute responses to inflammatory stimuli at early stage of microvessel remodeling. Experimental Biology, Anaheim, 2010.

2010 Xueping Zhou and **Pingnian He**. Cellular and molecular mechanisms of Hydrogen Peroxide (H_2O_2)-induced cell Injury and Barrier Dysfunction in Intact Venules. Experimental Biology, Anaheim, 2010 (**received 2010 Zweifach Graduate Student Travel Awards**).

2010 Xueping Zhou and **Pingnian He** Role of nitric oxide in peroxynitrite-induced increases in microvessel permeability. The 9th World Congress for Microcirculation, Paris, 2010 (**Received World Congress Travel Award**).

2011 Dong Yuan, Xueping Zhou, Sulei Xu and **Pingnian He**. Streptozotocin-induced diabetes enhances microvessel permeability responses to acutely applied inflammatory mediator in rat mesenteric venules. Experimental Biology, Washington DC, 2010. **Received Pappenheimer Postdoctoral Travel Award from Microcirculatory Society.**

2011 Xueping Zhou, Yanchun Xu, Yan Qian, and **Pingnian He**. The effects of peroxynitrite on eNOS activation and Microvessel Permeability in Intact Venules. Experimental Biology, Washington DC, 2010.

2011 Sulei Xu, Xueping Zhou, Yanchun Xu, Dong Yuan and **Pingnian He**. Caveolin-1 scaffolding domain induces leukocyte adhesion without increasing permeability in intact rat mesenteric venules. Experimental Biology, Washington DC, 2010. **Received Zweifach Student Travel Award from Microcirculatory Society**.

2012 Yuan, Dong and **He, Pingnian**. Rho-dependent upregulation of endothelial contractility and adhesion disassembly contributes to the enhanced permeability responses to inflammation in diabetic venules. Experimental Biology, San Diego, CA, 2012.

2012 Stork, Christian and **He, Pingnian**. Increased circulating microparticles in diabetic rats mediate leukocyte adhesion in intact venules. Experimental Biology, San Diego, CA, 2012. **Received Pappenheimer Postdoctoral Travel Award from Microcirculatory Society.**

2012 Xu, Sulei, Yuan, Dong, and **He, Pingnian**. Shear Stress Generated by Different Fluid Compositions Induces Differential Endothelial Signaling in Intact Venules. Experimental Biology, San Diego, CA, 2012.

2012 Wang, Mingxia, Yuan, Dong, and **He, Pingnian**. Increased nitric oxide is necessary but not sufficient to increase permeability in the absence of calcium influx in intact rat venules. Experimental Biology, San Diego, CA, 2012.

2013 Yuan, Dong and **He, Pingnian**. Time course of changes in microvessel permeability in streptozotocin (STZ)-induced diabetic rats. Experimental Biology, Boston, MA, 2013. **Received 2013 Caroline tum Suden/Francis A. Hellebrandt Professional Opportunity Awards from American Physiological Society.**

2013 Stork, Christian and **He, Pingnian**. Increased Circulating Microparticles in Diabetic Rats Actively Serve as Mediators of Inflammation. Experimental Biology, Boston, MA, 2013. **Received Pappenheimer Postdoctoral Travel Award from Microcirculatory Society.**

2013 Xu, Sulei, and **He, Pingnian**. Impaired glycocalyx increases the endothelial susceptibility to shear stress in diabetic rat venules. Experimental Biology, Boston, MA, 2013. **Received 2013 SEBM Young Investigator Award.**

2013 Xu, Sulei, and **He, Pingnian**. Shear stress-induced differential endothelial signaling in the presence and absence of erythrocytes in intact rat venules. Vascular Biology Oct 2013, Hyannis MA.

Rec'd 11/12/10

CURRICULUM VITAE

Thomas Arthur Heming, Ph.D. **November 12, 2010**

PRESENT POSITION AND ADDRESS

1. Vice Dean for Academic Affairs
Professor and Head of Physiology
Oman Medical College

P.O. Box 391, Postal Code 321
Al-Tareef, Sohar, Sultanate of Oman
Office Telephone: (00968) 2684 4004 or 2684 4140, extension 103
Office FAX: (00968) 2684 3545
GSMobile: (00968) 9234 2189
Email address: theming@omc.edu.om

2. Adjunct Professor
Department of Physiology and Pharmacology
School of Medicine
West Virginia University, Morgantown, West Virginia, USA 26506
Email address: theming@hsc.wvu.edu

BIOGRAPHICAL

Date of Birth:	June 3, 1953
Place of Birth:	Guelph, Ontario, Canada
Citizenship:	USA and Canada
Home Address:	P.O. Box 391, PC 321, Sohar, Sultanate of Oman
Home email:	tandl_heming@yahoo.com

EDUCATION

1984-1985	Postdoctoral Fellow (Physiology). Will Rogers Institute Pulmonary Research Laboratory, Department of Internal Medicine, School of Medicine, University of California at Los Angeles (UCLA)
1984	Ph.D. (Physiology). The University of British Columbia, Vancouver, BC, Canada
1979	M.Sc. (Environmental Physiology). University of Victoria, British Columbia, Canada
1976	B.Sc. Honours Biology. University of Guelph, Ontario, Canada

CURRENT CERTIFICATES

2007 Certificate in Health Professions Education. College of Medicine and Health Sciences, Sultan Qaboos University, Muscat, Sultanate of Oman

2006 Certificates in variety of quality assurance areas from Oman Accreditation Council and Ministry of Higher Education, Government of Oman.

(1) ADRI: a Quality Assurance Model for Self Reviewers
(2) Key Performance Indicators
(3) Documenting Policies & Manuals
(4) Benchmarking
(5) Strategic Planning
(6) Risk Management
(7) Quality Audit

POSITIONS HELD

Oman Medical College (Sohar, Sultanate of Oman: 2004 – present)

2008-present Vice Dean for Academic Affairs
2005-2008 Associate Dean for Academic and Student Affairs
2004-present Professor and Head of Physiology

West Virginia University (Morgantown, West Virginia, USA: 2004 – present)

2004-present Adjunct Professor, Department of Physiology and Pharmacology, School of Medicine

University of Texas (Health Science Center, Houston, Texas: 2002 – 2004)

2002-2004 Associate Professor, Department of Internal Medicine, School of Medicine
2002-2004 Director, Pulmonary Research Laboratories. Department of Internal Medicine, School of Medicine

University of Texas (Medical Branch, Galveston, Texas: 1987-2004)

2002-2004 Adjunct Associate Professor, Department of Physiology and Biophysics, School of Medicine
1993-2002 Associate Professor, Department of Internal Medicine, School of Medicine
1993-2002 Associate Professor, Department of Physiology and Biophysics, School of Medicine
1987-2002 Faculty, Cellular Physiology and Molecular Biophysics Program, Graduate School of Biomedical Sciences
1989-2002 Director, Pulmonary Research Laboratories. Department of Internal Medicine, School of Medicine
1987-2002 Adjunct Member, Marine Biomedical Institute
1987-1993 Assistant Professor, Department of Internal Medicine, School of Medicine

Alberta Department of Environment (Vegreville, Alberta, Canada: 1985-1987)

1985-1987 Head, Aquatic Toxicology Section. Alberta Environmental Centre

TEACHING EXPERIENCE: ADMINISTRATIVE

2004-present	Course Director, Human Function (CCMD 730). Oman Medical College
2004-2006	Course Director, Problem-Based Learning (PBL). Oman Medical College
2001-2002	Course Director, Cardiovascular and Respiratory Module (BBSC 6111), Graduate School of Biomedical Sciences, University of Texas Medical Branch
1999-2002	Course Director, Cardiovascular/Pulmonary Module of Integrated Medical Curriculum (IMC), School of Medicine, University of Texas Medical Branch
1999-2002	Course Director, Principles of Membrane Transport (BBSC 6109), Graduate School of Biomedical Sciences, University of Texas Medical Branch

TEACHING EXPERIENCE: LECTURES, LABORATORIES or SMALL GROUPS

2008-present	Human Function (CCMD 730). West Virginia University
2004-present	Human Function (CCMD 730). Oman Medical College
2004-2008	Problem-Based Learning (PBL). Oman Medical College
2008	Medical Pharmacology (PCOL 761). Oman Medical College
2008	Neurobiology (CCMD 775). Oman Medical College
2006	Epidemiology and Biostatistics (CCMD 712). Oman Medical College
2005-2007	Biomedical Discourse Seminar (English 301). Oman Medical College
2004	Guest Lectures, Transport Phenomena in Physiological Systems. Biomedical Engineering Graduate Program, University of Houston, Texas
2002-2004	Problem Based Learning (PBL). School of Medicine, University of Texas Health Science Center
2001-2002	Cardiovascular and Respiratory Module (BBSC 6111). Graduate School of Biomedical Sciences, University of Texas Medical Branch
1999-2002	Cardiovascular/Pulmonary Module of Integrated Medical Curriculum (IMC). School of Medicine, University of Texas Medical Branch
1999-2002	Principles of Membrane Transport (BBSC 6109). Graduate School of Biomedical Sciences, University of Texas Medical Branch
1997-2002	Medical Physiology Prematriculation Program. School of Medicine, University of Texas Medical Branch
1996-2002	Research Topics (CPMB 6108). Graduate School of Biomedical Sciences, University of Texas Medical Branch
1994-1999	Integrated Learning Track (ILT). School of Medicine, University of Texas Medical Branch
1994-1999	Integrated Function Laboratory (IFL). School of Medicine, University of Texas Medical Branch
1993-1996	Introduction to Patient Evaluation (IPE). School of Medicine, University of Texas Medical Branch
1992-1994	Pathophysiology (GNRS 5355). School of Nursing, University of Texas Medical Branch
1987-2002	Integrated Curriculum Evaluation Exercise (ICEE). School of Medicine, University of Texas Medical Branch
1987-1998	Medical Physiology (PHBP 6501). School of Medicine, University of Texas Medical Branch
1986-1987	Guest Lectures, Environmental Physiology (Zoology 440). University of Alberta, Canada

1984	Guest Lectures, Comparative Physiology (Zoology 303). University of British Columbia, Canada
1981-1983	Teaching Assistant, Comparative Physiology (Zoology 303). University of British Columbia, Canada
1980	Teaching Assistant, Principles of Biology (Biology 101/102). University of British Columbia, Canada
1979	Teaching Assistant, Physiology Laboratory (Zoology 308). University of British Columbia, Canada
1977	Guest Lectures, Comparative Vertebrate Anatomy (Zoology 203). Malaspina College, Nanaimo, British Columbia, Canada
1976-1978	Teaching Assistant, Comparative Chordate Anatomy (Biology 207). University of Victoria, British Columbia, Canada

SUPERVISION OF GRADUATE STUDENTS

1989-1994	E. K. Stabenau, Ph.D. (Cellular Physiology & Molecular Biophysics). Dissertation title: Pulmonary CO_2 excretion and postcapillary CO_2-HCO_3^--H^+ equilibration in the turtle. University of Texas Medical Branch, Galveston, Texas. Present status – Professor and Chairman of Biology Department, Bradley University, Peoria, Illinois
1992-1994	L. A. Robinson, M.Sc. (Nursing). Thesis title: Effects of temperature elevation on mixed venous oxygen saturation after open heart surgery. University of Texas Medical Branch, Galveston, Texas. Present status – Registered Nurse

RESEARCH EXPERIENCE AND ACTIVITIES

A. Area of Research

Primary interest:	Physiology and pathophysiology of the respiratory tract
Secondary interest:	Environmental physiology and toxicology

B. Research Experience

2002-2004	Consultant to Boehringer Ingelheim Pharmaceutical Inc., Ridgefield, CT. Clinical trial 1182.55: The pharmacodynamic/pharmacokinetic interaction of tipranavir and ritonavir with loperamide in healthy volunteers
2002-2004	Director of Pulmonary Research Laboratories. Department of Internal Medicine, School of Medicine, University of Texas Health Science Center
2000-2004	Consultant to Dr. J. Zwischenberger (University of Texas Medical Branch, Galveston, Texas). Extracorporeal percutaneous arteriovenous carbon dioxide removal ($AVCO_2R$) defining critical limits of management: hemodynamic augmentation, heparin dosing and the pathophysiology of CO_2 homeostasis. Funded by Shriners' Burns Institute/Shriners' Hospital for Crippled Children
1991-1992	Consultant to Dr. M. G. Henry (Department of Fisheries and Wildlife, University of Minnesota, St. Paul, Minnesota) in studies of stress responses
1989-2002	Director of Pulmonary Research Laboratories. Department of Internal Medicine, School of Medicine, University of Texas Medical Branch

1984-1988	Delegate with USA-USSR Scientific Exchange Program Dealing with Cooperation in the Field of Environmental Protection (US Environmental Protection Agency, Washington, DC) in studies of environmental toxicology in the USA and USSR JULY-AUGUST 1984: Research with Dr. G. Vinogradov at Soviet Academy of Sciences, Institute of Biology, Borok, Nekouz Jaroslavl, USSR JULY-AUGUST 1986: Research with Dr. M. G. Henry at US Fish and Wildlife Service, Great Lakes Fishery Laboratory, Ann Arbor, Michigan JUNE-JULY 1987: Research with Dr. V. Komov at Soviet Academy of Sciences, Institute of Biology, Borok, Nekouz Jaroslavl, USSR JUNE-JULY 1988: Research with Dr. T. Haines at US Fish and Wildlife Service, Field Research Station-Orono, University of Maine, Orono, Maine
1982	Research Assistant with Dr. R. V. Thurston (Department of Biology, Montana State University, Bozeman, Montana) in studies of physiology and pathophysiology of cyanates
1975	Research Assistant with Dr. J. B. Sprague (Department of Zoology, University of Guelph, Ontario, Canada) in studies of toxicity of oil refinery effluents

C. Grant Support

2010-2013	Principal Co-investigator: Clinical and genetic assessment of cystic fibrosis (CF) in Omani patients. Concepts for an improved patient care by applied physiology and molecular predictive measures. Funded by Oman Research Board. (Direct costs: US $ 430,250.00). PI: S. M. Al-Khusaiby
2004	Co-investigator: Engineering particles for pulmonary drug delivery. Funded by Whitaker Foundation. PI: A. Annapragada
2000-2004	Co-Investigator: Alveolar macrophage pH_i regulation and cell function. Funded by National Institutes of Health. PI: A. Bidani
1995-2000	Co-Investigator: Alveolar macrophage pH_i regulation and cell function. Funded by National Institutes of Health. PI: A. Bidani
1995-1997	Co-Investigator: Regulation of alveolar macrophage dysfunctions after thermal and inhalation injuries. Funded by Shriners' Burns Institute/Shriners' Hospital for Crippled Children. PI: A. Bidani
1995-1997	Co-Investigator: Evaluation of a new physiological strategy for the management of patients with the Adult Respiratory Distress Syndrome. Funded by The Moody Foundation. PI: A. Bidani
1992-1995	Principal Investigator: Acid-base homeostasis in *Lepidochelys kempi*. Funded by Texas A&M Sea Grant College Program
1992-1994	Principal Investigator: Ionic channels in alveolar macrophages. Funded by American Lung Association, Texas Affiliate
1992-1994	Co-Investigator: Regulation of lung cell functions during and following lung injury. Funded by The Moody Foundation. PI: A. Bidani
1992-1994	Co-Investigator: Effects of smoke inhalation on intracellular pH regulation in lung cells. Funded by Shriners' Burns Institute/Shriners' Hospital for Crippled Children. PI: A. Bidani
1992-1993	Principal Investigator: Respiration and energy metabolism of squids. Funded by NATO Grant for International Collaboration in Research
1992-1993	Principal Investigator: Chloride channels in alveolar macrophages. Funded by UTMB Small Grants Program

1990-1992	Co-investigator: Cellular mechanisms regulating lung repair following acute lung injury. Funded by The Moody Foundation. PI: A. Bidani
1990-1991	Principal Investigator: Acid-base consequences of enforced diving in *Lepidochelys kempi*. Funded by Texas A&M Sea Grant College Program
1989	Principal Investigator: Effects of trawl escapement on the respiratory, acid-base, and ionic status of Kemp's ridley sea turtles. Funded by HEART (Help Endangered Animals, Ridley Turtles)
1988-1989	Principal Investigator: Kinetics of anion exchange in erythrocytes. Funded by UTMB Small Grants Program
1988-1989	Principal Investigator: Cellular biology of molluscan hemocytes. Funded by Texas A&M Sea Grant College Program

COMMITTEE AND OTHER RESPONSIBILITIES

A. National / International

2010-present	Associate Editor, International Journal of Drug Discovery.
2009	External Auditor. Universities Quality Assurance International Board, Knowledge & Human Development Authority, Government of Dubai, United Arab Emirates.
2008-present	Editorial Review Board, Scientific Journals International.
2008-present	Editorial Review Board, Egyptian Journal of Radiation Sciences and Application.
2008-present	Rustaq Regional Hospital-Oman Medical College, Joint Executive Board. Ministry of Health, Government of Oman.
2007-present	External Reviewer. Oman Academic Accreditation Authority, Government of Oman Quality Audit Panel Member, Oman Dental College, January 2010. Quality Audit Panel Member, University of Nizwa, March 2011.
2007-present	Steering Committee (Chairman 2008-2009) of the Annual Conference on Quality Management and Enhancement in Higher Education, Oman Quality Network, Sultanate of Oman
2006-present	Oman Quality Network (Executive Chairman 2008-2010), Sultanate of Oman
2006-present	Research and Ethical Review Committee for North Batinah Region, Ministry of Health, Government of Oman.
2005-present	Sohar Regional Hospital-Oman Medical College, Joint Executive Board. Ministry of Health, Government of Oman.
2003-2004	Western Review Consortium Peer Review Committee, American Heart Association, Burlingame, California
1988-1992	Objectives Evaluation Committee, Great Lakes Water Quality Board. International Joint Commission on the Great Lakes, Detroit, Michigan
1985-1987	Organizing Committee of the Annual Applied Aquatic Studies Workshop. University of Alberta, Edmonton, Alberta, Canada
1985-1987	Intergovernmental Aquatic Toxicology Committee. Environment Canada, Ottawa, Canada
1981-1982	Standardization of Terminology Committee (Chairman), Early Life History Section, American Fisheries Society

B. Institutional

2008-present	Quality Steering Committee (Chairman), Oman Medical College
2004-present	Academic Standards Committee (Chairman), Oman Medical College
2004-present	Dean's Executive Committee, Oman Medical College
2004-present	Curriculum Committee (Chairman), Oman Medical College
2004-2006	IT Committee (Chairman), Oman Medical College
2004-2006	Recruitment Committee, Oman Medical College
2004-2006	Examination Committee (Chairman), Oman Medical College
2002-2004	Problem Based Learning Executive Committee. School of Medicine, University of Texas Health Science Center
2002-2004	Problem Based Learning, Principles Working Group. School of Medicine, University of Texas Health Science Center
2002-2004	Animal Welfare Committee, University of Texas Health Science Center
1998-2002	Departmental Research Advisory Committee. Department of Internal Medicine. School of Medicine, University of Texas Medical Branch
1998-2002	Graduate School Recruitment Committee. Graduate School of Biomedical Sciences. University of Texas Medical Branch
1993-2002	Animal Care and Use Committee (Chairman of Education and Training Subcommittee). University of Texas Medical Branch
1993-2002	Departmental Recruitment Committee (Chairman). Department of Physiology and Biophysics, School of Medicine, University of Texas Medical Branch

C. Civic

2007-present	USA Embassy Warden for North Batinah, Embassy of the United States of America, Muscat, Sultanate of Oman
2005-2008	Founding member of Sohar-So-Good Expatriate Group, Sohar, Sultanate of Oman
1997-1998	Board of Directors, Galveston Municipal Utilities District #13 (Deputy Secretary)
1993-1997	Board of Directors, Brittany Bay Homeowners Association (Secretary 1994-1995, President 1995-1997)

HONORS AND AWARDS

1984	American Heart Association Research Fellowship
1984	NATO Science Fellowship
1984	Izaak Walton Killam Memorial Postdoctoral Fellowship
1983	The University of British Columbia, University Graduate Fellowship
1983	Montana Academy of Sciences, Best Student Paper Award
1980	American Fisheries Society, Best Student Paper Award
1979 & 1980	Natural Science and Engineering Research Council Postgraduate Scholarship
1977	University of Victoria, Graduate Fellowship
1976 & 1977	National Research Council Postgraduate Scholarship
1976	University of Guelph, Honours BSc, awarded with distinction
1972	University of Guelph, McArthur-Humphries Scholarship

BIBLIOGRAPHY

A. Articles in Peer-reviewed Journals

1. Smego, R. A., **Heming, T. A.,** Davis, L., Hossain, W., and and Al-Khusaiby, S. M. A personal computer-based undergraduate medical school curriculum using SOLE. Teach. Learn. Med. 21: 38-44, 2009.
2. Smego, R. A., **Heming, T. A.,** and Al-Khusaiby, S. M. A private-public partnership in the Gulf: the Oman Medical College. Oman Med. J. 22(1/2): 5-7, 2007.
3. Luo, C., Clark, J. W., **Heming, T. A.**, and Bidani, A. A macrophage cell model for pH and volume regulation. J. Theor. Biol. 238: 449-463, 2006.
4. Mukuwaya, G., MacGregor, T., Hoelscher, D., **Heming, T.,** Legg, D., Kavanaugh, K., Johnson, P., Sabo, J. P., and McCallister, S. Interaction of ritonavir-boosted tipranavir with loperamide does not result in loperamide-associated neurologic side effects in healthy volunteers. Antimicrob. Agents Chemotherapy. 49: 4903-4910, 2005.
5. Ng, A. W., Bidani, A., and **Heming, T. A.** Innate host defense of the lung: effects of lung-lining fluid pH. Lung 182: 297-317, 2004.
6. Luo, C., Clark, J. W., Jr., **Heming, T. A.**, and Bidani, A. A simplified model for V-ATPase H^+ extrusion. IEEE Trans. Nanobioscience 3: 257-264, 2004.
7. **Heming, T. A.**, and Bidani, A. Intracellular pH regulation in U937 human monocytes: roles of V-ATPase and Na^+/H^+ exchange. Immunobiol. 207: 141-148, 2003.
8. **Heming, T. A.**, Bulayeva, N. N., and Bidani, A. Cell alkalosis elevates cytosolic calcium in rabbit resident alveolar macrophages. Clin. Sci. 105: 21-28, 2003.
9. **Heming, T. A.,** and Bidani, A. Effects of pH on plasma membrane potential of rabbit resident alveolar macrophages: importance of plasmalemmal V-ATPase. Lung 181: 121-135, 2003.
10. Stabenau, E. K. and **Heming, T.** Pulmonary carbonic anhydrase in vertebrate gas exchange organs. Comp. Biochem. Physiol. A, Mol. Integr. Physiol. 136: 271-279, 2003.
11. **Heming, T. A.**, and Bidani, A. Plasmalemmal H^+ extruders in mammalian alveolar macrophages. Comp. Biochem. Physiol. 133: 143-150, 2002.
12. Bidani, A., Luo, C., Clark, J. W., and **Heming, T. A.** Ion transport in lung cells: from cellular homeostatis to pulmonary gas exchange. EMBS/BMES J. 2: 1485-1486, 2002.
13. Luo, C., Clark, J. W., **Heming, T. A.**, and Bidani, A. Mathematical analysis of alveolar macrophage pH regulation. EMBS/BMES J. 2: 1540-1541, 2002.
14. Savage, C., Zwischenberger, J. B., Deyo D. J., **Heming, T. A.**, Alpard, S. K., and Bidani A. New technique for performing bronchoalveolar lavage in sheep. J. Bronchology 8: 17-20, 2001.
15. **Heming, T. A.**, Tuazon, D. M., Davé, S. K., Chopra, A. K., Peterson, J. W., and Bidani, A. Post-transcriptional effects of extracellular pH on tumor necrosis factor-α production in RAW 246.7 and J774 A.1 cells. Clin. Sci. 100: 259-266, 2001.
16. **Heming, T. A.**, Davé, S. K., Tuazon, D. M., Chopra, A. K., Peterson, J. W., and Bidani, A. Effects of extracellular pH on TNF-α production by resident alveolar macrophages. Clin. Sci. 101: 267-274, 2001.
17. Bidani, A., Reisner, B. S., Haque, A. K., Wen, J., Helmer, R. E., Tuazon, D. M., and **Heming, T. A.** Bactericidal activity of alveolar macrophages is suppressed by V-ATPase inhibition. Lung 178: 91-104, 2000.
18. Duarte, A. G., **Heming, T. A.**, and Bidani, A. Inhaled drug therapy during mechanical ventilation. Clin. Pulm. Med. 7: 140 - 146, 2000.
19. **Heming, T. A.**, Boyarsky, G., Tuazon, D. M., and Bidani, A. pH_i responses during osmotic cell shrinkage in the presence of open-system buffers. J. Appl. Physiol. 89: 1543 - 1552, 2000.

20. Bidani, A., Hawkins, H. K., Wang, C. Z., and **Heming, T. A.** Dose dependence and time course of smoke inhalation injury in a rabbit model. Lung 177: 111-122, 1999.
21. Koyayashi, H., Kobayashi, M., **Heming, T. A.**, Bidani, A., Pollard, R. B., and Suzuki, F. Cytokine production by rabbit alveolar macrophages: differences between activated and suppressor cell phenotypes. Immunol. Letters 69: 339-346, 1999.
22. Stabenau, E. K., and **Heming, T. A.** CO_2 excretion and postcapillary pH equilibration in blood-perfused turtle lungs. J. Exp. Biol. 202: 965-975, 1999.
23. Bidani, A., and **Heming, T. A.** Effects of concanavalin A on Na^+-dependent and Na^+-independent mechanisms for H^+ extrusion in alveolar macrophages. Lung 176: 25-34, 1998.
24. Bidani, A, Wang, C. Z., Saggi, S. J., and **Heming, T. A.** Evidence for pH sensitivity of TNFα release by alveolar macrophages. Lung 176: 111-121, 1998.
25. Cardenas, V., Jr., **Heming, T. A.**, and Bidani, A. Kinetics of CO_2 excretion and intravascular pH disequilibria during carbonic anhydrase inhibition. J. Appl. Physiol. 84: 683-694, 1998.
26. Morrison, R. J., Singhal, S. S., Bidani, A., **Heming, T. A.**, and Awasthi, S. Glutathione S-transferases of rabbit lung macrophages. Toxicol. Appl. Pharmacol. 148: 229-236, 1998.
27. Conrad, S. A., Brown, E. G., Grier, J., Baier, J., Blount, J., **Heming, T. A.**, Zwischenberger, J. B., and Bidani, A. Arteriovenous extracorporeal carbon dioxide removal. A mathematical model and experimental evaluation. ASAIO J. 44: 267-277, 1998.
28. Bidani, A., Wang, C. Z., and **Heming, T. A.** Cotton smoke inhalation primes alveolar macrophages for cytokine production and suppresses macrophage antimicrobial activities. Lung 176: 325-336, 1998.
29. **Heming, T. A.**, and Bidani, A. Bafilomycin A_1, a selective inhibitor of V-ATPase: influence on pH regulation and effector functions of alveolar macrophages. Current Topics Pharmacol. 4: 163-172, 1998.
30. Bidani, A., and **Heming, T. A.** Effects of lidocaine on cytosolic pH regulation and stimulus-induced effector functions in alveolar macrophages. Lung 175: 349-361, 1997.
31. Bidani, A., Wang, C. Z., and **Heming, T. A.** Early effects of smoke inhalation on alveolar macrophage functions. Burns 22: 101-106, 1996.
32. Bidani, A., Brown, S. E. S., and **Heming, T. A.** Cytosolic pH regulation in density-defined subpopulations of bronchoalveolar macrophages. Lung 174: 225-234, 1996.
33. Stabenau, E. K., Bidani, A., and **Heming, T. A.** Physiological characterization of pulmonary carbonic anhydrase in the turtle. Respir. Physiol. 104: 187-196, 1996.
34. Bidani, A., and **Heming, T. A.** Effects of bafilomycin A_1 on functional capabilities of LPS-activated alveolar macrophages. J. Leukoc. Biol. 57: 275-281, 1995.
35. **Heming, T. A.**, and Bidani, A. Effects of myristate phorbol ester on V-ATPase activity and Na^+-H^+ exchange in alveolar macrophages. J. Leukoc. Biol. 57: 600-608, 1995.
36. **Heming, T. A.**, and Bidani, A. Na^+-H^+ exchange in alveolar macrophages: activation by osmotic cell shrinkage. J. Leukoc. Biol. 57: 609-616, 1995.
37. Bidani, A., and **Heming, T. A.** Kinetic analysis of cytosolic pH regulation in alveolar macrophages: V-ATPase mediated responses to a weak acid. Am. J. Physiol. 269: L20-L29, 1995.
38. **Heming, T. A.**, Traber, D. L., Hinder, F., and Bidani, A. Effects of bafilomycin A_1 on cytosolic pH of ovine alveolar and peritoneal macrophages: evaluation of pH regulatory role of plasma membrane V-ATPase. J. Exp. Biol. 198: 1711-1715, 1995.
39. **Heming, T. A.**, Copello, J., and Reuss, L. Regulation of cAMP-activated apical membrane chloride conductance in gallbladder epithelium. J. Gen. Physiol. 103: 1-18, 1994.
40. Bidani, A., Brown, S. E. S., and **Heming, T. A.** pH_i regulation in alveolar macrophages: relative

roles of Na^+/H^+ antiport and H^+-ATPase. Am. J. Physiol. 266: L681-L688, 1994.

41. **Heming, T. A.**, Stabenau, E. K., Vanoye, C. G., Moghadasi, H., and Bidani, A. Roles of intra- and extracellular carbonic anhydrase in alveolar-capillary CO_2 equilibration. J. Appl. Physiol. 77: 697-705, 1994.
42. Stabenau, E. K., and **Heming, T. A.** The *in vitro* respiratory and acid-base properties of blood and tissue from the Kemp's ridley sea turtle (*Lepidochelys kempi*). Can. J. Zool. 72: 1403-1408, 1994.
43. Stabenau, E. K., and **Heming, T. A.** Determination of the constants of the Henderson-Hasselbalch equation, αCO_2 and pK_a, of sea turtle plasma. J. Exp. Biol. 180: 311-314, 1993.
44. Stabenau, E. K., Moon, P. F., and **Heming, T. A.** Resuscitation of sea turtles. Marine Turtle Newsl. 62: 3-5, 1993.
45. Copello, J., **Heming, T. A.**, Segal, Y., and Reuss, L. cAMP-activated apical membrane chloride channels in *Necturus* gallbladder epithelium: conductance, selectivity, and block. J. Gen. Physiol. 102: 177-199, 1993.
46. **Heming, T. A.**, Vanoye, C. G., Stabenau, E. K., Roush, E. D., Fierke, C. A., and Bidani, A. Inhibitor sensitivity of pulmonary vascular carbonic anhydrase. J. Appl. Physiol. 75: 1642-1649, 1993.
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48. Stabenau, E. K., **Heming, T. A.**, and Mitchell, J. F. Respiratory, acid-base, and ionic status of Kemp's ridley sea turtles (*Lepidochelys kempi*) subjected to trawling. Comp. Biochem. Physiol. 99A: 107-111, 1991.
49. Bidani, A., and **Heming, T. A.** Effects of perfusate buffer capacity on capillary CO_2-HCO_3^--H^+ reactions: theory. J. Appl. Physiol. 71: 1460-1468, 1991.
50. Stabenau, E. K., Vanoye, C. G., and **Heming, T. A.** Characteristics of the anion transport system in sea turtle erythrocytes. Am. J. Physiol. 261: R1218-R1225, 1991.
51. Brown, S. E. S., **Heming, T. A.**, Benedict, C. R., and Bidani, A. ATP-sensitive Na^+-H^+ antiport in type II alveolar epithelial cells. Am. J. Physiol. 261: C954-C963, 1991.
52. **Heming, T. A.**, Vanoye, C. G., Brown, S. E. S., and Bidani, A. Cytoplasmic pH recovery in acid-loaded hemocytes of squid (*Sepioteuthis lessoniana*). J. Exp. Biol. 148: 385-394, 1990.
53. **Heming, T. A.**, and Bidani, A. *In situ* characterization of carbonic anhydrase activity in isolated rat lungs. J. Appl. Physiol. 69: 2155-2162, 1990.
54. **Heming, T. A.**, Vanoye, C. G., and Bidani, A. Dipyridamole inhibition of HCO_3^--Cl^- exchange in human erythrocytes. J. Pharmacol. Exp. Therapeut. 255: 631-635, 1990.
55. **Heming, T. A.** Clinical studies of fish blood: importance of sampling and measurement technique. Am. J. Vet. Res. 50: 93-97, 1989.
56. **Heming, T. A.**, and Blumhagen, K. A. Factors influencing thiocyanate toxicity in rainbow trout *Salmo gairdneri*. Bull. Environ. Contam. Toxicol. 43: 363-369, 1989.
57. **Heming, T. A.**, Sharma, A., and Kumar, Y. Time-toxicity relationships in fish exposed to the organochlorine pesticide methoxychlor. Environ. Toxicol. Chem. 8: 923-932, 1989.
58. Bidani, A., Brown, S. E. S., **Heming, T. A.**, Gurich, R., and DuBose, Jr, T. D. Cytoplasmic pH in pulmonary macrophages: recovery from acid load is Na^+ independent and NEM sensitive. Am. J. Physiol. 257: C65-C76, 1989.
59. **Heming, T. A.**, and Blumhagen, K. A. Plasma acid-base and electrolyte states of rainbow trout exposed to alum (aluminum sulphate) in acidic and alkaline environments. Aquat. Toxicol. 12: 125-140, 1988.
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spiked-exposure to methoxychlor on the early life stages of rainbow trout. Bull. Environ. Contam. Toxicol. 40: 764-770, 1988.

61. **Heming, T. A.**, Vinogradov, G. A., Klerman, A. K., and Komov, V. T. Acid-base regulation in the freshwater pearl mussel *Margaritifera margaritifera*: effects of emersion and low water pH. J. Exp. Biol. 137: 501-511, 1988.
62. **Heming, T. A.**, Randall, D. J., and Mazeaud, M. M. Effects of adrenaline on ionic equilibria in red blood cells of rainbow trout (*Salmo gairdneri*). Fish Physiol. Biochem. 3: 83-90, 1987.
63. Iwama, G. K., Boutilier, R. G., **Heming, T. A.**, Randall, D. J., and Mazeaud, M. Effects of altering gill water-flow on gas transfer in rainbow trout. Can. J. Zool. 65: 2466-2470, 1987.
64. Vinogradov, G. A., Klerman, A. K., Komov, V. T., and **Heming, T. A.** Regulation of acid-base homeostasis of bivalve mollusc *Margaritana margaritifera* (Eulamellibranchia, Margaritiferidae) mantle fluids on drying up and acidification of medium. Zool. Zh. 66: 989-995, 1987. (In Russian).
65. **Heming, T. A.**, and Paleczny, E. J. Compositional changes in skin mucus and blood serum during starvation of trout. Aquaculture 66: 265-273, 1987.
66. **Heming, T. A.**, and Watson, T. A. Activity and inhibition of carbonic anhydrase in *Amia calva*, an air-breathing holostean fish. J. Fish Biol. 28: 385-392, 1986.
67. **Heming, T. A.**, Randall, D. J., Boutilier, R. G., Iwama, G. K., and Primmett, D. Ionic equilibria in red blood cells of rainbow trout (*Salmo gairdneri*): Cl^-, HCO_3^-, and H^+. Respir. Physiol. 65: 223-234, 1986.
68. Wright, P., **Heming, T.**, and Randall, D. Downstream pH changes in water flowing over the gills of rainbow trout. J. Exp. Biol. 126: 499-512, 1986.
69. Crandall, E. D., **Heming, T. A.**, Palumbo, R. L., and Goodman, B. E. Effects of terbutaline on sodium transport in isolated perfused rat lung. J. Appl. Physiol. 60: 289-294, 1986.
70. Geers, C., **Heming, T. A.**, Gros, G., Bidani, A., and Crandall, E. D. Effects of intra- and extracellular carbonic anhydrase on carbon dioxide excretion and intravascular pH equilibrium in the isolated perfused rat lung. Prog. Respir. Res. 21: 26-29, 1986.
71. **Heming, T. A.**, Geers, C., Gros, G., Bidani, A., and Crandall, E. D. Effects of dextran-bound inhibitors on carbonic anhydrase activity in isolated rat lungs. J. Appl. Physiol. 61: 1849-1856, 1986.
72. Boutilier, R. G., Iwama, G. K., **Heming, T. A.**, and Randall, D. J. The apparent pK of carbonic acid in rainbow trout blood plasma between 5 and 15°C. Respir. Physiol. 61: 237-254, 1985.
73. **Heming, T. A.**, Thurston, R. V., Meyn, E. L., and Zajdel, R. K. Acute toxicity of thiocyanate to trout. Trans. Am. Fish. Soc. 114: 895-905, 1985.
74. Rowe, D. W., Sprague, J. B., and **Heming, T. A.** Sublethal effects of treated liquid effluent from a petroleum refinery. I. Chronic toxicity to flagfish. Aquat. Toxicol. 3: 149-159, 1983.
75. Rowe, D. W., Sprague, J. B., **Heming, T. A.**, and Brown, I. T. Sublethal effects of treated liquid effluent from a petroleum refinery. II. Growth of rainbow trout. Aquat. Toxicol. 3: 161-169, 1983.
76. **Heming, T. A.** Effects of temperature on utilization of yolk by chinook salmon (*Oncorhynchus tshawytscha*) eggs and alevins. Can. J. Fish. Aquat. Sci. 39: 184-190, 1982.
77. **Heming, T. A.**, McInerney, J. E., and Alderdice, D. F. Effect of temperature on initial feeding in alevins of chinook salmon (*Oncorhynchus tshawytscha*). Can. J. Fish. Aquat. Sci. 39: 1554-1562, 1982.
78. **Heming, T. A.**, and Randall, D. J. Fish erythrocytes are bicarbonate permeable: problems with determining carbonic anhydrase activity using the modified boat technique. J. Exp. Zool. 219: 125-128, 1982.

79. Randall, D. J., Perry, S. F., and **Heming, T. A.** Gas transfer and acid-base regulation in salmonids. Comp. Biochem. Physiol. 73B: 93-103, 1982.
80. Daxboeck, C., and **Heming, T. A.** Bimodal respiration in the intertidal fish, *Xiphister atropurpureus* (Kittlitz). Mar. Behav. Physiol. 9: 23-33, 1982.
81. Perry, S. F., and **Heming, T. A.** Blood ionic and acid-base status in rainbow trout (*Salmo gairdneri*) following rapid transfer from freshwater to seawater: effect of pseudobranch denervation. Can. J. Zool. 59: 1126-1132, 1981.
82. **Heming, T. A.**, and Preston, R. P. Differential effect of formalin preservation on yolk and tissue of young chinook salmon (*Oncorhynchus tshawytscha* Walbaum). Can. J. Zool. 59: 1608-1611, 1981.

B. Books and Book Chapters

1. Bidani, A., Tuazon, D. M., and **Heming, T. A.** Regulation of whole body acid-base balance. *In:* Acid-base and Electrolyte Disorders, (T. DuBose, Jr. and L. Hamms, eds.) W. B. Saunders Co., Philadelphia, pp 1-21, 2002.
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109. Bidani, A., and **Heming, T. A.** Role of reaction and transport events in microvascular CO_2 exchange. Annual Conf. Biomed. Engineer. Res., Houston TX. 42, 1989.
110. **Heming, T. A.**, and Bidani, A. Effects of temperature on capillary CO_2 exchange. Physiologist 32: 211, 1989.
111. Vanoye, C. G., **Heming, T. A.**, and Bidani, A. Dipyridamole inhibition of HCO_3^-/Cl^- exchange in human erythrocytes. Physiologist 32: 223, 1989.
112. Stabenau, E. K., and **Heming, T. A.** Trawl stress in Kemp's ridley sea turtles. Am. Zool. 29: 139A, 1989.
113. **Heming, T. A.**, Brown, S., Vanoye, C., and Bidani, A. Control of pH_i in squid hemocytes. Intl. Union Biol. Sci., Proc. Second Intl. Congress Comp. Physiol. Biochem., Louisiana State University, Baton Rouge, LA. 322, 1988.
114. **Heming, T. A.**, Brown, S. E. S., Vanoye, C. G., and Bidani, A. Regulation of intracellular pH in squid leukocytes. Physiologist 31: A193, 1988.
115. Crandall, E. D., **Heming, T. A.**, Geers, C., Gros, G., and Bidani, A. Effects of dextran-bound carbonic anhydrase inhibitors on pH equilibrium in isolated rat lungs. Fed. Proc. 45: 394, 1986.
116. Bidani, A., **Heming, T. A.**, Geers, C., Gros, G., and Crandall, E. D. Effects of dextran-bound inhibitors on carbonic anhydrase activity in isolated rat lungs. Am. Rev. Respir. Disease 133: A201, 1986.
117. **Heming, T. A.**, Geers, C., Gros, G., Bidani, A., and Crandall, E. D. Localization of carbonic anhydrase in rat lung using macromolecular inhibitors: evidence for intravascular and extravascular enzymes with different physiological roles. Bull. Can. Soc. Zool. 17: 29, 1986.
118. Geers, C., **Heming, T. A.**, Bidani, A., Crandall, E. D., and Gros, G. Effects of macromolecular carbonic anhydrase inhibitors on carbon dioxide excretion and intravascular pH equilibrium in the isolated perfused lung. Pflugers Arch. 405: R21, 1985.
119. **Heming, T. A.**, Meyn, E. L., and Thurston, R. V. Effects of stress on the mechanism of thiocyanate toxicity in trout. Environ. Canada, Fish. Aquat. Sci. Techn. Report 1163: 211, 1983.
120. **Heming, T. A.**, and Daxboeck, C. Aerial respiration in the stichaeid fish, *Xiphister atropurpureus*. Bull. Can. Soc. Zool. 12: 55, 1981.
121. Davie, P. S., Daxboeck, C., Perry, S. F., and **Heming, T. A.** Gas exchange in spontaneously ventilating blood-perfused trout. Bull. Can. Soc. Zool. 12: 47, 1981.
122. Daxboeck, C., and **Heming, T. A.** The effect of coronary artery ablation upon swimming performance in *Salmo gairdneri*. Am. Zool. 20: 800, 1980.

Curriculum Vitae

Name: Stanley Michael Hileman

Work Address: Department of Physiology and Pharmacology
P.O. Box 9229
Robert C. Byrd Health Sciences Center
West Virginia University
Morgantown, WV 26506-9229
Telephone: 304-293-1502
Fax: 304-293-3850
Email: smhileman@hsc.wvu.edu

Home Address: 3162 Sylvan Circle
Morgantown, WV 26508
Telephone: 304-284-8385

Date of Birth: September 9, 1963

Education:

1985	B.S., Animal and Veterinary Science, West Virginia University, Morgantown, WV
1988	M.S., Animal Science, University of Kentucky, Lexington, KY Advisor: Dr. Keith K. Schillo Thesis Title: Effect of fasting on metabolic profiles in peripubertal lambs: implications for metabolic signals regulating puberty onset
1991	Ph.D., Animal Science, University of Kentucky, Lexington, KY Advisor: Dr. Keith K. Schillo Thesis Title: Metabolic signals regulating GnRH release

Professional Appointments

1985-1991	Research and Teaching Assistant, Department of Animal Science, University of Kentucky, Lexington, KY
1991-1992	NIH Postdoctoral Research Fellow, Reproductive Biology Training Program, University of Illinois, Champaign-Urbana, IL
1992-1994	Postdoctoral Research Fellow, Department of Veterinary Biosciences, University of Illinois, Champaign-Urbana, IL
1994-1996	U.S.D.A. Postdoctoral Research Fellow, Department of Veterinary Biosciences, University of Illinois, Champaign-Urbana, IL
1996-1998	Visiting Assistant Professor, Department of Veterinary Biosciences, University of Illinois, Champaign-Urbana, IL
1998-2000	Research Fellow, Department of Medicine, Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA
2000-2006	Assistant Professor, Department of Physiology and Pharmacology, Health Sciences Center, West Virginia University, Morgantown, WV

2006-2016 Associate Professor, Department of Physiology and Pharmacology, Health Sciences Center, West Virginia University, Morgantown, WV

2016-Present Professor, Department of Physiology and Pharmacology, Health Sciences Center, West Virginia University, Morgantown, WV

Teaching Experience

University of Kentucky

Lectured on Reproductive Neuroendocrinology and general Endocrinology in the Reproductive Physiology (undergraduate level) course in Spring, 1988

Lectured on Thyroid Hormone Function in the Mammalian Endocrinology Course (graduate level) in Spring, 1990

University of Illinois

Lectured on Neuroendocrinology, Puberty and Nutrition and LH release in the Reproductive Endocrinology Course (graduate level) in Spring, 1993 and Spring 1995.

West Virginia University

Small Groups Leader, Human Functions Course, Fall 2000-2010.

Lectured on Control of Food Intake in Advanced Physiology 491 (graduate level), Spring 2002, Fall 2003.

Lecture on Endocrinology in Physiology 241 (undergraduate level), Spring 2002 to 2010.

Lecture on Reproductive Physiology in Physiology 241 (undergraduate level), Spring 2004 to 2010.

Lecture on Mechanisms of Puberty Onset in Animal Physiology 726 (graduate level) in alternating spring semesters, 2003 to present.

Lectured on Obesity in Medical School 102 in Spring 2002.

Lectured on Female Reproduction, Pregnancy, and Endocrine Control of Growth in Physiology and Pharmacology 750 (graduate level) in Fall 2002.

Lecture on Neural control of food intake in the Neuroscience Module for 1st year graduate students, Spring 2004 to present.

Coordinate and lecture in the Regulatory Systems section of the Graduate Neuroscience Course, Fall 2004 to 2007, 2014.

Coordinated a Special Topics course on control of food intake, Summer sessions 1 and 2, 2004.

Lecture on leptinergic pathways involved in neural control of food intake or cardiovascular function for Advanced Endocrinology, Spring or Summer, 2001 – present.

Coordinate and lecture in special topics course on Endocrinology, Spring, 2012.

Lecture on Endocrinology, Reproductive Physiology, 12h, 1st year Dental and Pharmacy students, 2012-present.

Director, Spring semester, first year graduate course for students in Cellular and Integrative Physiology, 8h, 2014

Lecture on obesity and diabetes, 1h, Foundations Course for first year biomedical sciences graduate students, 2014.

Lecture on obesity and neural control of cardiovascular function, 2h, graduate students in the advanced neurosciences course.

Participate in journal clubs on reproductive physiology and homeostasis, 2000-present.

Facilitator for Problem Based Learning Group – 1st year medical students, 2015, 2016.

University Committees, Service, and Research Centers

Animal Quarters Facilities Planning Committee, 2002

Faculty Position Search Committee, Dept. of Neurobiology and Anatomy, 2002

Faculty Position Search Committee Member, Integrated Center for Neurobiology, Position in Stem Cell Research, 2004

Faculty Position Search Committee Member, Integrated Center for Neurobiology, Position in Regeneration Biology, 2004

Academic Integrity, Discovery Subcommittee, 2006

Faculty Advisory Council to the Chancellor – 2009-2013

Faculty Position Search Committee, Chair, Dept. of Physiology and Pharmacology, Position in the Pharmacology of Diabetes, 2014

Faculty Position Search Committee Member, Davis College of Agriculture, Natural Resources and Design, Div. of Animal and Nutritional Sciences, assistant professor position in reproductive physiology, 2016

Faculty Senate Member – 2008-2015, 2017-Present

Faculty Senate Curriculum Committee – 2009-2010

Faculty Senate Research and Scholarship Committee – 2006, 2011-2017 (Chair, 2014)

Member – WVU Center of Excellence for Women's Health

Member – WVU Blanchette Rockefeller Neuroscience Institute

Director, Julie Betschart Symposium and Award, 2004-Present

Nonhuman Use Radiological Safety Committee, 2004-Present (Chair 2006 to present)

WVU Radiation Safety Committee, 2007-Present

Dept. of Physiology and Pharmacology Promotion and Tenure Committee, 2014-2015, 2017-present (Chair, 2017-present).

WVU Athletic Council, 2016 – Present

Faculty Senate Executive Committee, 2016 - Present

President's Faculty Advisory Board, 2016 – Present

WVU Health Sciences Core resources management committee – 2016 - Present

WVU Health Sciences Flow Cytometry and Single Cell Core Facility Committee – 2016 - Present

WVU Academic Standards Committee – 2106 - Present

Van Liere Convocation Committee, 2001-present, Co-Chair, 2008-Present

Graduate Advisory Committee, Department of Physiology and Pharmacology, 2003-Present (Chair 2007-2008; 2019)

Member – WVU Board of Governors, 2016 – Present

Within the BOG, a member of the Divisional Campus Committee, Finances and Facilities and Revitalization Committee, and the Academic Affairs and Accreditation Committee, 2020 Nomination Committee

Program Coordinator, West Virginia Idea Network for Biomedical Research Excellence, 2016-Present

Member – working group to revise WVU Faculty Constitution, 2018

Member – Dept. of Physiology and Pharmacology Strategic Planning Committee, 2018
External Reviewer – Promotion File for Dr. Patrick Burns, Northern Colorado University, 2020

Graduate Student Degree Committees

Chair – Adam Dobbins, M.S., Dept. of Physiology and Pharmacology, 2004
Member – Timothy Maze, Ph.D., Dept. of Animal and Vet. Science, 2002
Member - Steve Hardy, Ph.D., Dept. of Physiology and Pharmacology, 2003
Member – Patricia Dickerson, Ph.D., Dept. of Neurobiology and Anat., 2005
Member – Melanie Starbuck, Ph.D., Dept. of Animal and Vet. Science, 2005
Member – Adrienne Bogusz, M.S., Dept. of Physiology and Pharmacology, 2006
Member – Yucel Akgul, Ph.D., Dept. of Physiology and Pharmacology, 2007
Member – Justin Rhinehart, Ph.D., Dept. of Animal and Vet. Science, 2007
Member – Jonathan Peterson, Ph.D., Dept. of Exercise Physiology, 2007
Member – Frederick Odhiambo, Ph.D., Dept. of Animal and Veterinary Science, 2008
Member – Reyna VanGilder, Ph.D., Dept. of Basic Pharmaceutical Sciences, 2009
Member – Janna Jackson, Ph.D., Cellular and Integrative Physiology, 2010
Member – Jesse Thompson, Ph.D. committee, Cellular and Integrative Physiology, 2010
Member – Adam Goodwill, Ph.D. Committee, Cellular and Integrative Physiology, 2011
Member – Tina Dow, Ph.D. committee, Dept. of Animal and Veterinary Science, 2012
Member – Holly Damron, Ph.D. Committee, Biochemistry, 2012
Member – Casey Nestor, Ph.D. committee, Cellular and Integrative Physiology, 2012
Member – Jianying Zhu, Ph.D. Committee, Cellular and Integrative Physiology, 2012
Member – Micah Waltz, M.S. Committee, Cellular and Integrative Physiology, 2015
Member – Christopher Krebs, Ph.D. Committee, Dept. of Psychology, 2014
Member – Kati Porter, Ph.D. Committee, Cellular and Integrative Physiology, 2013
Member – Rolf Hansen, Ph.D. Committee, Neuroscience, 2014
Member – Ashley Petrone, Ph.D. Committee, Neuroscience, 2015
Advisor – Justin Lopez, Master's committee, Animal Science, 2015
Chair – Peter Grachek, Master's committee, Cancer, 2015
Chair – Richard McCosh, Ph.D. committee, Cellular and Integrative Physiology, 2017
Member – Helen Rogers, Ph.D. Committee, Neuroscience, 2017
Advisor – Michelle Bedenbaugh, Ph.D. committee, 2018
Member – Lauryn Falcone, Ph.D. committee, Cellular and Integrative Physiology, 2018
Member – Marissa Turturici, Ph.D. committee, Dept. of Psychology, 2018
Member – Matthew Breit, M.S. committee, Exercise Physiology, 2017
Advisor – Ashley Lindo, M.S. committee, Reproductive Sciences Program, 2018
Member – Trey Rottgen, Ph.D. committee, Cellular and Integrative Physiology, 2018
Member – Hannah Hoskinson, M.S. Committee, Exercise Physiology, 2017
Member – Daniel Berrebi, Honors Biology Project committee, 2018
Member – Justin Lopez, Ph.D. committee, Reproductive Sciences Program, Present
Chair – Mackey Newman, Ph.D. Committee, Cellular and Integrative Physiology, Present
Chair – Drew Nickerson, Ph.D. Committee, Cellular and Integrative Physiology, Present
Member – Julie Griffith, Ph.D. Committee, Cellular and Integrative Physiology, Present
Member – Nairrita Majumder, Ph.D. Committee, Cellular and Integrative Physiology, Present
Chair – Krista Garner, Ph.D. Committee, Cellular and Integrative Physiology, Present

Member, Allison White, Ph.D. Committee, Cellular and Integrative Physiology, Present
Advisor, Ellie Aerts, Ph.D. Committee, Cellular and Integrative Physiology, Present
Advisor, Max Griesgraber, Ph.D. Committee, Cellular and Integrative Physiology, Present

Professional Societies

Society for the Study of Reproduction
University of Kentucky Forum for the Reproductive Sciences
Alpha Zeta
Society for Neuroscience
Gamma Sigma Delta
Endocrine Society

Awards and Honors

National Deans List
1991 SSR Trainee Travel Fellowship recipient
1991 NIH Postdoctoral Fellow
1995 USDA Postdoctoral Fellow
Judge – 2001-2005 Van Liere Student Research Competition
Member 2003-2005, Industry Relations Committee of the Society for the Study of Reproduction
Organizing Committee, 2006 International Symposium on "Appetite and Metabolic Function: Advances in Domestic Animals" held at West Virginia University

Grant and Journal Review

Member – 2016 National Science Foundation Graduate Research Fellowship Program review panel
Member – 2020 USDA Reproduction Grant Review Panel
Member – 2019 USDA Reproduction Grant Review Panel
Member – 2017 USDA Reproduction Grant Review Panel
Member – 2016 USDA Reproduction Grant Review Panel
Member – 2015 USDA Reproduction Grant Review Panel
Member – 2014 USDA Reproduction Grant Review Panel
Member-2000 USDA Reproductive Efficiency Grant Review Panel
USDA Ad Hoc Grant Reviewer – 1998, 1999, 2001-2004
Maryland Sea Grant Program Reviewer – 2001, 2002
Jeffress Memorial Trust Reviewer – 2001, 2003
BARD Grant Reviewer - 2009
WVU Research and Development Grant Reviewer – 2004
WVU Senate Research Grant Program Reviewer – 2006, 2012-Present
WVURC PSCoR Grant Reviewer – 2006
United Kingdom Medical Research Council, Neuroscience and Mental Health Board, Neurophysiology of systems, ad hoc grant reviewer – 2012
Ad hoc reviewer – Research Council UK, 2015
Grant Reviewer – National Science Center, Life Sciences, Krakow, Poland, 2018
Abstract Reviewer, 9th International Ruminant Reproduction Symposium, Obihiro Hokkaido, Japan – 2014

Abstract Reviewer, 10th International Ruminant Reproduction Symposium, Foz Do Iguacu, Brazil - 2018

Journal Reviewer:

American Journal of Physiology
Animal Reproduction
Biology of Reproduction
Biopolymers: Peptide Science
Diabetes
Diabetes Care
Domestic Animal Endocrinology
Endocrinology
Expert Opinions on Investigational Drugs
Hormones and Behavior
International Journal of Obesity
Journal of Clinical Endocrinology and Metabolism
Journal of Genetics
Journal of Endocrinology
Neuroendocrinology
Neuropeptides
Neuroscience Letters
Peptides
Public Library of Science ONE
Reproduction
Reproduction, Fertility and Development
Research in Veterinary Science
Scientifica

Editorial Board, Domestic Animal Endocrinology, 2007-2010

Editorial Board, ISRN Endocrinology, 2010 – present

Editor-In-Chief, Domestic Animal Endocrinology, 2018 - present

Funding

Active

USDA. $500,000 total costs). Neurokinin B and alpha-MSH in ovine puberty. The goal is to characterize the role of these two neuropeptides in normal puberty onset of female sheep and assess the impact of undernutrition on their expression, interaction, and function. Role: **PD, 5% effort.** 07/01/18-06/30/21.

NIH R01. $881,300 (total costs). Role of neurokinin B in regulating GnRH release in female sheep. The goal is to determine the role of NKB in regulating both the surge and tonic release of GnRH and examine potential sex differences in this regulation. **Co-I, 10% effort.** 7/01/16-6/30/21.

NIH-INBRE (NIGMS). Idea Network of Biomedical Research Excellence. A collaborative effort with Marshall University that focuses on the inclusion and training of undergraduate students in research from smaller institutions around the state. *My role is to manage the WVU portion of the program*. WVU Budget $10,763,482 (total costs), **Program Coordinator, 30% effort.** 5/01/14-4/30/19.

Pending

NIH R01. $3,466,362 (total costs). KNDy peptides and the control of GnRH secretion. Examines the role of neurons expressing receptors for neurokinin B, dynorphin and kisspeptin in regulating reproduction of both male and female sheep. **Co-I, 10% effort**, 12/01/2020-11/30/2025.

Completed

USDA $140,000, 1992-1995, Effect of testosterone on GnRH and POMC synthesis in the male

USDA $80,000, 1996-1997, Effect of estrogen on GnRH release during undernutrition

Hatch (State of Illinois) $24,000, 1994-1996, Effect of anterior hypothalamic lesions on puberty onset in female sheep.

USDA $170,000; 9/01/01-8/31/04, Influence of IGF-1 on GnRH release.

VA Stars and Stripes Healthcare Network $50,000; 1/31/03-12/31/04, Role of leptin in cancer growth. Co-PI.

WVU Research and Development Grant $11,575; 7/1/03-6/31/04, Sexual differentiation of body weight regulation. PI.

West Virginia Transgenic Mouse Core $46,370; 4/01/02-3/30/05, Effect of IGF-1 deletion fromGnRH neurons on reproduction. PI.

WVU RDG, $25,000, Role of the beta-3 subunit of the GABA A receptor POMC neurons in regulation of body weight. PI

WVU Bridge Grant, $40,000, 5/01/05-4/01/06. Sex-dependent regulation of body weight by leptin.

NSF, $300,000, 7/01/2004-6/30/2007. Role of cerebrospinal fluid GnRH in sexual behavior. Co-PI, 10% effort.

USDA, $425,724, 01/01/07-12/31/10. Role of central leptin and melanocortins in regulation of insulin-mediated glucose metabolism in peripheral tissues of underfed ruminants. Co-PI, 10% effort.

USDA. $292,183 direct costs ($417,404 total costs). Role of KNDy neurons in ovine puberty. The goal is to characterize the role of three neuropeptides (kisspeptin, neurokinin B, and dynorphin) that are coexpressed in the arcuate nucleus in puberty onset of female sheep. Role: **PD, 15% effort.** 09/01/13-08/31/18.

Invited Presentations

University of Illinois, "Nutritional control of reproduction in the female, 1991.

University of Wisconsin, "Nutritional control of reproduction in the female, 1991.

University of Maryland Eastern Shore, Neural regulation of LHRH secretion in the male", 1996.

Merck Research Company, "Neural Control of LHRH secretion in the male", 1997.

University of Massachusetts, "Neural and environmental regulation of LHRH release", 1997.

Beth Israel Deaconess Medical Center and Harvard Medical School, "Neural control of seasonal reproduction", 1998.

West Virginia University, Dept. of Physiology, "Blood brain barrier transport of leptin and leptin resistance", 2000.

West Virginia University, Dept. of Physiology, "Potential role of IGF-1 in reproduction", 2000.

West Virginia University, Dept. of Pharmacology and Toxicology, "Blood brain barrier transport of leptin: implications for obesity", 2000.

West Virginia University, M.D./Ph.D program, " Blood brain barrier transport of leptin: implications for obesity", 2001.
University of Michigan, “Potential Role of IGF-1 and leptin in reproduction”, 2001.
West Virginia University, Dept. of Biology, “Leptinergic control of body weight”, 2003.
West Virginia University, Dept. of Physiology and Pharmacology, “Sexual differentiation in body weight regulation”, 2003.
American Association of Laboratory Animal Scientists, Three Rivers Chapter, “Neurosurgical Approaches to Research in Sheep”, 2006.
Symposium on Appetite and Metabolic Function: Advances in Domestic Animals, “Nutritional regulation of GnRH secretion: role of sex and estradiol”, 2006.
University of Georgia, “Nutritional regulation of neuroendocrine function”, 2006.
University of Florida, “Role of sex in the nutritional regulation of neuroendocrine function”, 2006.
Cornell University, “Influence of sex in the control of food intake and reproduction”, 2007
8th International Conference, Slovak Conference of Animal Physiology, Račkova Dolina, Slovakia, “Neuropeptide Y-1 receptors mediate the suppression of LH secretion by NPY in castrated male sheep”, 2009.
Texas A&M University. “Regulation of LH release in the ewe by neurokinin B”, 2012.
USDA Meat Animal Research Center, Clay Center, NE. “Role of KNDy neurons in puberty”, 2016.
University of Aberdeen, Scotland. “A Potential Role for NKB in Integrating Nutrition and Puberty in Female Sheep”, Neurobiology of Obesity Symposium, 2017.
North Carolina State University, “Role of KNDy neurons in ovine puberty”, 2017.
West Virginia University, Dept. of Biology, “Role of KNDy neurons in ovine puberty”, 2017.

Publications

1. Estienne MJ, Schillo KK, Green MA, Hileman SM, Boling JA. N-methyl-d, l-aspartate stimulates growth hormone but not luteinizing hormone secretion in the sheep. Life Sci 44:1527-1533, 1989. PMID: 2659911
2. Estienne MJ, Schillo KK, Hileman SM, Green MA, Hayes SH. Effect of n-methyl-d,l-aspartate on luteinizing hormone secretion in ovariectomized ewes in the absence and presence of estradiol. Biol Reprod 42:126-130, 1990. PMID: 2178697
3. Estienne MJ, Schillo KK, Hileman SM, Green MA, Hayes SH, Boling JA. Effects of free fatty acids on luteinizing hormone and growth hormone secretion in ovariectomized lambs. Endocrinology 126:1934-1940, 1990. PMID: 2318150
4. Hileman SM, Schillo KK, Boling JA, Estienne MJ. Effects of age on fasting-induced changes in insulin, glucose, urea nitrogen, and free fatty acids in sera of sheep. Proc Soc Exp Biol Med 194: 21-25, 1990. PMID: 2183227
5. Estienne MJ, Schillo KK, Green MA, Hileman SM. Growth hormone release after N-methyl-D,L-aspartate in sheep: dose response and effect of an opioid antagonist. J Anim Sci 68:3198-3203, 1990. PMID: 2254196
6. Hall JB, Schillo KK, Hileman SM, Boling JA. Does tyrosine act as a nutritional signal mediating the effects of increased feed intake on luteinizing hormone patterns in growth restricted lambs? Biol Reprod 46: 573-579, 1992. PMID: 1576254
7. Hileman SM, Schillo KK, Estienne MJ. Effects of intracerebroventricular administration of D,L-2-amino-5-phosphonovaleric acid, an N-methyl-D-aspartate receptor antagonist, on

luteinizing hormone release in ovariectomized lambs. Biol Reprod 47:1168-1172, 1992. PMID: 1362895

8. Hileman SM, Schillo KK, Hall JB. Effects of acute, intracerebroventricular administration of insulin on serum concentrations of luteinizing hormone, insulin, and glucose in ovariectomized lambs during restricted and ad libitum feed intake. Biol Reprod 48:117-124, 1993. PMID: 8418899
9. Hileman SM, Lubbers LS, Kuehl DE, Schaeffer DJ, Rhodes L, Jackson GL. Effect of inhibiting 5 alpha-reductase activity on the ability of testosterone to inhibit luteinizing hormone release in male sheep. Biol Reprod 50: 1244-1250, 1994. PMID: 8080913
10. Hileman SM, Kuehl DE, Jackson GL. Effect of anterior hypothalamic area lesions on photoperiod-induced shifts in reproductive activity of the ewe. Endocrinology 135: 1816-1823, 1994. PMID: 7956905
11. McLeod KR, Harmon DL, Schillo KK, Hileman SM, Mitchell GE Jr. Effects of cysteamine on pulsatile growth hormone release and plasma insulin concentrations in sheep. Comp Biochem Physiol B Biochem Mol Biol 112:523-533, 1995. PMID: 8529029
12. Hileman SM, Lubbers LS, Peterson SL, Kuehl DE, Scott CJ, Jackson GL. Influence of testosterone on LHRH release, LHRH mRNA and proopiomelanocortin mRNA in male sheep. J Neuroendocrinol 8: 113-121, 1996. PMID: 8868258
13. Jansen HT, Hileman SM, Lubbers LS, Jackson GL, Lehman MN. A subset of estrogen receptor-containing neurons project to the median eminence in the ewe. J Neuroendocrinol 8: 921-927, 1996. PMID: 8953470
14. Jansen HT, Hileman SM, Lubbers LS, Kuehl DE, Jackson GL, Lehman MN. Identification and distribution of neuroendocrine gonadotropin-releasing hormone neurons in the ewe. Biol Reprod 56: 655-662, 1997. PMID: 9047010
15. Ferreira SA, Hileman SM, Kuehl DE, Jackson GL. Effects of dialyzing gamma-aminobutyric acid receptor antagonists into the medial preoptic area and arcuate ventromedial region on luteinizing hormone release in male sheep. Biol Reprod 58: 1038-1046, 1998. PMID: 9546737
16. Hileman SM, Kuehl DE, Jackson GL. Photoperiod affects the ability of testosterone to alter proopiomelanocortin mRNA, but not luteinizing hormone mRNA, levels in male sheep. J Neuroendocrinol 10:587-592, 1998. PMID: 9725710
17. Lubbers LS, Hileman SM, Kuehl DE, Ferreira SA, Jackson GL. Temporal effects of estradiol (E) on luteinizing hormone-releasing hormone (LHRH) and LH release in castrated male sheep. Domest Anim Endocrinol 15: 511-524, 1998. PMID: 9861542
18. Bjorbaek C, Elmquist JK, El-Haschimi K, Kelly J, Ahima RS, Hileman S, Flier JS. Activation of SOCS-3 messenger ribonucleic acid in the hypothalamus by ciliary neurotrophic factor. Endocrinology, 140:2035-2043, 1999. PMID: 10218952
19. Hileman SM, Lubbers LS, Jansen HT, Lehman MN. Changes in hypothalamic estrogen-receptor containing cell numbers in response to feed restriction in the female lamb. Neuroendocrinology, 69:430-437, 1999. PMID: 10364695
20. Hileman SM, Handa RJ, Jackson GL. Distribution of estrogen receptor-β messenger ribonucleic acid in the male sheep hypothalamus. Biol Reprod, 60:1279-1284, 1999. PMID: 10330081
21. Hileman SM, Tornoe J, Flier JS, Bjorbaek C. Transcellular transport of leptin by the short leptin receptor isoform Ob-Ra in Madin-Darby Canine Kidney cells. Endocrinology 141:1955-1961, 2000. PMID: 10830277

22. El Haschimi K, Pierroz D, Hileman SM, Bjorbaek C, Flier JS. Two defects contribute to hypothalamic leptin resistance in mice with diet-induced obesity. J Clin Inv 105:1827-1832, 2000. PMID: 10862798
23. Ziotopoulou M, Erani DM, Hileman SM, Bjorbaek C, Matzoros C. Unlike leptin, ciliary neurotrophic factor does not reverse the starvation-induced changes of serum corticosterone and hypothalamic neuropeptide levels, but induces expression of hypothalamic inhibitors of leptin signaling. Diabetes 49:1890-1896, 2000. PMID: 11078456
24. Ziotopoulou M, Mantzoros C, Hileman SM, Flier JS. Differential expression of hypothalamic neuropeptides in the early phase of diet-induced obesity in mice. Am J Physiol 279:E838-845, 2000. PMID: 11001766
25. Ahima RS, Hileman SM. Postnatal regulation of hypothalamic neuropeptide expression by leptin: implications for energy balance and neuroendocrine function. Regulatory Peptides 92:1-7, 2000. PMID: 11024558
26. Hileman SM, Pierroz D, Masuzaki H, Bjorbaek C, El-Haschimi K, Banks WA, Flier JS. Characterization of short isoforms of the leptin receptor in rat cerebral microvessels and of brain uptake of leptin in mouse models of obesity. Endocrinology 143:775-783, 2002. PMID: 11861497
27. Ahima RS, Patel HR, Takahashi N, Yong Qi, Hileman SM, Zasloff M. Appetite suppression and weight reduction by a centrally active aminosterol. Diabetes 51:2099-2104, 2002. PMID: 12086938
28. Nonaka N, Hileman SM, Shioda S, Banks WA. Leptin transport across the blood-brain barrier is modified by lipopolysaccharide. Brain Res 1016:58-65, 2004. PMID: 15234252
29. Dobbins A, Lubbers LS, Jackson GL, Kuehl DE, Hileman SM. Neuropeptide Y gene expression in male sheep: influence of photoperiod and testosterone. Neuroendocrinology 79:82-89, 2004. PMID: 15004430
30. Qi Y, Takahashi N, Hileman S, Berg AH, Pajvani UB, Scherer PE, Ahima RS. Adiponectin acts in the brain to decrease body weight. Nature Medicine 10:524-529, 2004. PMID:15077108
31. Somasundar P, Frankenberry KA, Skinner H, Vedula G, McFadden DW, Riggs D, Jackson B, VanGilder R, Hileman SM, Vona-Davis LC. Prostate cancer cell proliferation is influenced by leptin. Journal of Surgical Research 118:71-82, 2004. PMID: 15093720
32. McManus CJ, Goodman RL, Llanza NV, Valent M, Dobbins AB, Connors JM, Hileman SM. Inhibition of LH secretion by localized administration of estrogen, but not dihydrotestosterone, is enhanced in the ventromedial hypothalamus during feed restriction in the young wether. Biol Reprod 73:781-789, 2005. PMID: 15972883
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66. Porter KL, Hileman SM, Drews S, Goodman RL. Arcuate kisspeptin neurons are rapidly activated by removal of estrogen negative feedback in anestrous ewes. 2011 meeting of the Society for Neuroscience, Washington, D.C.
67. Goodman RL, Porter KL, Connors JM, Nestor CC, Lehman MN, Hileman SM. Evidence that dynorphin, but not glutamate or GnRH, acts in the arcuate nucleus of the ewe to control episodic GnRH release. 2012 annual meeting of the Society for Neuroscience, New Orleans, LA.
68. Porter KL, Hileman SM, Hardy SL, Goodman RL. Senktide administration in the retrochiasmatic area and preoptic area stimulates surge-like LH secretion in ewes. 2013 annual meeting of the Endocrine Society in San Francisco, CA.
69. Goodman RL, Porter KL, Connors JM, Hileman SM. Neurokinin B (NKB) and the NKB receptor agonist, senktide, act in the ovine arcuate nucleus to produce different patterns of LH release. 2013 annual meeting of the Endocrine Society in San Francisco, CA.
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71. Porter KL, Hileman SM, Hardy SL, Goodman RL. Neurokinin B signaling in the retrochiasmatic area is essential for the full preovulatory LH surge in ewes. 2013 annual meeting of the Society for Neuroscience in San Diego, CA.
72. Coolen LM, Smith TG, Lehman MN, Hileman SM, Connors JM, Goodman RL. Arcuate KNDy neurons receive afferent projections from the retrochiasmatic area in the ewe. 2013 annual meeting of the Society for Neuroscience in San Diego, CA.
73. Rastle-Simpson SL, Porter KL, D'Souza KN, Baptiste QS, Redhead A, Hileman SM, Knights M. The initial increase in LH following ram introduction is not associated with an increase in activation of arcuate kisspeptin neurons. 2013 annual meeting of the Society for the Study of Reproduction in Montrèal, Quèbec, Canada.'
74. Thorson JF, Prezotto LD, McCosh RB, Wright EC, Swanson KC, White BR, Freking BA, Oliver WT, Hileman SM, Lents CL. Effects of RFRP2 and RF9 on secretion of lutieinizing hormone in prepubertal gilts. 2014 Annual Meeting of the Endocrine Society, Chicago, IL.
75. Grachev P, McCosh RB, Lopez JA, Meadows LJ, Nesselrod GL, Valent M, Hardy SL, Connors JM, Hileman SM, Goodman RL. Surge-like LH secretion induced by retrochiasmatic area NK3R activation is mediated by kisspeptin/GPR54 signaling in ovary-intact ewes. 2014 International Congress of Neuroendocrinology, Sydney, Australia.
76. Lopez JA, Meadows LJ, McCosh RB, Goodman RL, Hileman SM. Is dynorphin involved in the prepubertal suppression of LH secretion by estradiol in female sheep? Society for Neuroscience, 2014 Annual Meeting, Washington, D.C.
77. Grachev P, McCosh RB, Lopez JA, Nesselrod G, Valent M, Hardy SL, Connors JM, Hileman SM, Goodman RL. The stimulatory effect of neuromedin U on pulsatile LH secretion: insights from a seasonal mammal. Society for Neuroscience, 2014 Annual Meeting, Washington, D.C.

78. Lopez JA, McCosh RB, Nesselrod G, Bedenbaugh MN, Hardy SL, Goodman RL, Hileman SM. Evidence that alterations in dynorphin secretion play an important role in ovine puberty. Endocrine Society, 2015 Annual Meeting, San Diego, CA.
79. Goodman RL, Mazzella L, Grachev P, McCosh R, Connors JM, Hileman SM. High doses of neurokinin A and substance P stimulate LH secretion in ewes. Endocrine Society, 2015 Annual Meeting, San Diego, CA.
80. Bedenbaugh MN, Lopez JA, McCosh RB, Goodman RL, Hileman SM. Characterization of the neuronal nitric oxide synthase neurons in the hypothalamus of prepubertal sheep. Endocrine Society, 2016 Annual Meeting, Boston, MA.
81. Weems PW, Coolen LM, Hileman SM, Hardy S, McCosh RB, Goodman RL, Lehman MN. Kappa opioid receptors are internalized in arcuate KNDy cells during GnRH pulse termination in the ewe. 2016 Society for Neuroscience Meeting, San Diego, Ca.
82. Grachev P, McCosh RB, Bedenbaugh MN, Valent M, Hardy SL, Connors JM, Hileman SM, Goodman RL. Stimulatory effect of neuromedin U on pulsatile LH secretion in ewes is dependent on melanocortin type 4 receptor signaling. 2016 Society for Neuroscience Meeting, San Diego, Ca.
83. McCosh RB, Bedenbaugh, MN, Lopez JA, Hileman SM, Valent M, Grachev P, Goodman RL. Blockade of somatostatin 2 receptor stimulates episodic LH secretion, but not surge secretion, in ewes. 2016 Society for Neuroscience Meeting, San Diego, Ca.
84. Bedenbaugh MN, Rainey CA, McCosh RB, Lopez JA, Goodman RL, Hileman SM. NKB, but not dynorphin, acts within the arcuate nucleus to influence LH secretion in prepubertal ewes. 2016 Society for Neuroscience Meeting, San Diego, CA.
85. Bedenbaugh MN, O'Connell RC, Lopez JA, McCosh RB, Goodman RL, Hileman SM. A high percentage of kisspeptin and GnRH neurons are colocalized with neuronal nitric oxide synthase in prepubertal female sheep. 2017 Endocrine Society Meeting in Orlando, FL.
86. McCosh RB, Szelligo BM, Bedendbaugh MN, Lopez JA, Hardy SL, Hileman SM, Connors JM, Goodman RL. Somatostatin receptor 2 antagonist, CYN154806, stimulates steroid independent episodic LH secretion in ewes. 2017 Endocrine Society Meeting in Orlando, FL.
87. Weems PW, Coolen LM, Hileman SM, Hardy SL, McCosh RB, Goodman RL, Lehman MN. Kappa opiod receptors are internalized in MBH GnRH cells during GnRH pulse termination in the ewe. 2017 Endocrine Society Meeting in Orlando, FL.
88. Bedenbaugh MN, McCosh RB, Lopez JA, Rainey C, Goodman RL, Hileman SM. Examination of age-related changes in NK3R expression and colocalization of KOR with GnRH neurons in the hypothalamus of female sheep. 2017 meeting of the Society for Neuroscience in Washington, D.C.
89. Lopez JA, McCosh RB, Bedenbaugh MN, Lindo AN, Connors JM, Hileman SM, Goodman RL. The response to senktide administration in the retrochiasmatic area is sexually dimorphic in lambs. 2018 International Congress of Neuroendocrinology meetings in Toronto, Canada.
90. Goodman RL, Coolen LM, McCosh RB, Lopez JA, Bedenbaugh MN, Connors JM, Hardy SL, Lehman MN. Lesions of NK3R-containing neurons in the retrochiasmatic area (RCh) blunt the LH surge in ewes. 2018 International Congress of Neuroendocrinology meetings in Toronto, Canada.
91. Bedenbaugh MN, McCosh RB, Lopez JA, Connors JC, Hardy SL, Goodman RL, Hileman SM. The neuroanatomical relationship of nNOS to kisspeptin and GnRH adult female sheep

and primates. 2018 International Congress of Neuroendocrinology meetings in Toronto, Canada.

92. Goodman RL, Lopez JA, Bedenbaugh MN, Connors JM, Hardy SL, Hileman SM, Coolen LM, Lehman MN. Evidence that the LH surge in ewes involves both neurokinin B-dependent and independent actions of kisspeptin. 2018 meeting of the Society for Neuroscience, San Diego, CA.
93. Lopez JA, McCosh RB, Bedenbaugh MN, Lindo AN, Bowdridge EC, Hileman SM, Goodman RL. Morphological evidence for sexual dimorphism of NK3R-containing neurons in the retrochiasmatic area of sheep. 2018 meeting of the Society for Neuroscience, San Diego, CA.
94. Goodman RL, He W, Hileman SM, Connors JM, Hardy SL, Coolen LM, Lehman MN. Receptors for each KNDy peptide within the arcuate nucleus of ewes contribute to GnRH pulse generation. Submitted to the 2020 Annual meeting of the Endocrine Society.

10/5/2007

CURRICULUM VITAE
Linda Jean Huffman

CONTACT INFORMATION:

77 Delrose Drive
Morgantown, WV 26508
Telephone: 304-291-6875
E-Mail: ljhhome10@hotmail.com

EDUCATION:

Institution	Major	Degree
Antioch College	Biology	B.S., 1970
University of Nebraska at Omaha	Psychology	M.A., 1978
University of Nebraska College of Medicine	Physiology	Ph.D., 1981

PROFESSIONAL EXPERIENCE:

Position	Instituition	Dates
Research Associate	Department of Physiology University of Nebraska College of Medicine	1981-1982
Postdoctoral Fellow	Department of Physiology West Virginia University School of Medicine	1982-1985
Research Assistant Professor	Department of Physiology West Virginia University School of Medicine	1985-1991
Visiting Scientist	Institute of Animal Physiology and Genetic Research Cambridge Research Station England	Mar.-Aug. 1989
Research Associate Professor	Department of Physiology West Virginia University School of Medicine	1991-1992
Senior Research Associate	NIOSH Division of Respiratory Disease Studies; Biochemistry Section	1992-1995
Adjunct Assistant Professor	Department of Physiology West Virginia University School of Medicine	1992-2001
Research Physiologist	NIOSH Health Effects Laboratory	1996-2005

	Division Pathology and Physiology Research Branch	
Adjunct Associate Professor	Department of Physiology and Pharmacology West Virginia University School of Medicine	2001-present

HONORS, AWARDS, AND FELLOWSHIPS:

Maude Hammond Fling Fellowship, University of Nebraska	1977-1978
Charles Frank Morsman Endocrinology Fellowship, University of Nebraska	1978-1980
Maude Hammond Fling Dissertation Travel Fellowship, University of Nebraska	1979
American Heart Associate, Nebraska Affiliate, Postdoctoral Fellowship	1981-1982
Individual Post-Doctoral Fellowship, National Research Service Award, NIH/NIADDK	1984-1985
Travel Award to 68th Annual Meeting of the Endocrine Society, U.S. Endocrine Society	1986
Faculty Development Grant, West Virginia University	1990
Resident Research Associateship Award, National Research Council	1992-1995

GRANT SUPPORT:

Co-investigator, NIH Research Grant AM35037 - Neuropeptide Control of Thyroid Secretion and Blood Flow (1985-1989; G.A. Hedge, Ph.D., Principal Investigator)

West Virginia University Senate Grant for Research or Scholarships - Localization and Characterization of Receptors for Vasoactive Intestinal Peptide in Rat Pancreatic Tissue (1987-1988)

Biomedical Research Support Grant - Somatostatin mRNA Production and Secretory Responses in Cultured Parafollicular Cells from Rat Thyroid Glands and in a Rat Medullary Thyroid Carcinoma Cell Line (1990-1991)

Co-Investigator, NSF Research Grant DCB-8904470-Neuropeptide Control of Thyroid Secretion and Blood Flow (1989-1992, G.A. Hedge, Ph.D., Principal Investigator)

National Research Council, Pulmonary Response to Agricultural Dust: Role of Neuropeptides (1992-1995)

TEACHING EXPERIENCE:

Endocrine Section of Physiology 141 (Nursing)
Physiological Methods 342 (Graduate Students)
Gastro-Intestinal Section of Physiology 343 (Dental)
Respiratory Section of Physiology 343 (Dental)
Respiratory Section of Physiology 241 (Undergraduates and Non-Physiology Graduates)

INTRAMURAL SERVICE:

Health Careers Opportunity Program advisor (1986; 1987; 1991), West Virginia University Medical Center

Minority High School Student Research Apprenticeship Program mentor (1987; 1988; 1993) West Virginia University Medical Center

Judge, Graduate Student Competition, Van Liere Research Convocation, West Virginia University Medical Center (1995)

Summer Research preceptor, Medical Student Summer Research, West Virginia University Medical Center (1996)

EXTRAMURAL SERVICE:

Review of Manuscripts for the Following Journals:
- Physiology and Behavior
- Biochemical Pharmacology
- Neuroendocrinology
- American Journal of Physiology
- Toxicology and Applied Pharmacology
- Pulmonary Pharmacology and Therapeutics

Review of Grants for the National Science Foundation

FULL PUBLICATIONS: (Asterisk denotes chapter, review, invited paper, etc.)

Huffman, L. and S.E. Hendricks. Prenatally injected testosterone propionate and sexual behavior of female rats. Physiol. Behav. 26:773-778, 1981.

Wesley, C.R., L.J. Huffman and J.P. Gilmore. Responsiveness of cerebral osmoreceptors in the anesthetized dog. Proc. Soc. Exptl. Biol. Med. 171:238-241, 1982.

Gilmore, J.P., C.R. Wesley, L. Huffman and M.N. Nemeh. Arginine vasotocin and renal function in the conscious dog. Peptides 3:937-940, 1982.

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Huffman, L.J., G.T. Campbell and J.P. Gilmore. Renal function and pituitary hormone release during cerebral osmostimulation and TRH in dogs. Peptides 4:843-847, 1983.

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Huffman, L.J., E.K. Inskeep and R.L. Goodman. Changes in episodic luteinzing hormone secretion leading to puberty in the lamb. Biology of Reproduction 37:755-761, 1987.
Huffman, L.J. and G.A. Hedge. Early development of the thyroid axis in the Brattleboro rat. Biology of the Neonate 53:305-314, 1988.

Huffman, L., J.M. Connors and G.A. Hedge. VIP and its homologs increase vascular conductance in certain endocrine and exocrine glands. Am. J. Physiol. (Endo. and Met.) 254:E435-E442, 1988.

Connors, J.M., L.J. Huffman, and G.A. Hedge. Effects of thyroid stimulating hormone on the vascular conductance of the thyroid gland. Endocrinology 122:921-929, 1988.

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*Hedge, G.A., M. Michalkiewicz, J.M. Connors, and L.J. Huffman. The role of TSH in mediating compensatory changes in the remaining thyroid lobe after hemithyroidectomy. In: The Thyroid 1988, Eds: S. Nagataki and K. Torizuka, Excerpta Medica, Amsterdam, p. 555-558, 1988.

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Huffman, L.J., M. Michalkiewicz, Z. Pietrzyk, and G.A. Hedge. Helodermin, but not cholecystokinin, somatostatin, or thyrotropin releasing hormone, acutely increases thyroid blood flow in the rat. Regulatory Peptides 31:101-104, 1990.

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*Hedge, G.A., Connors, J.M., L.J. Huffman, M. Michalkiewicz. Propylthiouracil alters the sensitivity of the thyroid gland to TSH-induced increases in blood flow. In: Progress in Thyroid Research, Eds: A. Gordon, J. Gross, and G. Hennemann, A.A. Balkema, Rotterdam, p. 127-130, 1991.

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Huffman, L.J., D.J. Prugh, K. Brumbauth, C. Platania, D.G. Frazer, J.S. Reynolds, and W.T. Goldsmith. Enhanced pulmonary inflammatory response to inhaled endotoxin in pregnant rats. J. Toxicol. Environ. Health (Part A) 67:125-144, 2004.

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Porter, D.W., M. Wolfarth, S.-H. Young, M.K. Rao, T. Meighan, M. Barger, M.E. Andrew, and L.J. Huffman. PGJ2 inhibition of LPS-induced inflammatory mediator expression from rat alveolar macrophages. J. Toxicol. Environ. Health (Part A) 70:1-10, 2007.

ABSTRACTS:

Huffman, L. and S. Hendricks. Varying effects of perinatally injected testosterone propionate. East. Conf. Reprod. Behav., p. 37, 1978.

Elias, K.A., L.J. Huffman, and C.A. Blake. Age of ovariectomy affects subsequent plasma LH responses in old age rats. 61st Meet. Endo. Soc.:106, 1979.

Huffman, L., G.T. Campbell, and J.P. Gilmore. Anterior pituitary hormone release in response to intracarotid hypertonic NaCl infusion in the dog. Fed. Proc. 39:588, 1980.

Wesley, C.R., L.J. Huffman, and J.P. Gilmore. Renal effects of intra-carotid (IC) infusion of hypertonic sodium chloride solution in the anesthetized dog. Fed. Proc. 40:493, 1981.

Zucker, I.H., A.J. Gorman, K.G. Cornish, L. Huffman, and J.P. Gilmore. Left ventricular receptors modulate plasma vasopressin in conscious dogs. Circulation 64:IV-155, 1981.

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Connors, J.M., L.J. Huffman, and G.A. Hedge. Characterization of TSH effects on thyroidal blood flow. 61st Meet. Amer. Thyroid Assoc.:T-16, 1986.

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Huffman, L.J., T.G. Bouder, and G.A. Hedge. VIP causes similar increases in endocrine organ vascular conductance (VC) in both conscious and anesthetized rats. FASEB J. 2:A530, 1988.

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Michalkiewicz, M., L.J. Huffman, J.M. Connors, and G.A. Hedge. High iodine diet (HID) decreases thyroid blood flow. 63rd Meet. Amer. Thyroid Assoc.: T55, 1988.

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Hedge, G.A., M. Michalkiewicz, J.M. Connors, and L.J. Huffman. The role of TSH in mediating compensatory changes in the remaining thyroid lobe after hemithyroidectomy. Int'l Thyroid Symposium, Tokyo: 103, 1988.

Michalkiewicz, M., J.M. Connors, L.J. Huffman, and G.A. Hedge. Anterior pituitary vasoactive intestinal peptide immunoreactivity (VIP-IR) is increased in hypothyroid rats. 71st Meet. Endo. Soc.: 65, 1989.

Hedge, G., J. Connors, L. Huffman, and M. Michalkiewicz. PTU- but not TRH-induced TSH raises thyroid blood flow. Proc. Int'l. Union Physiol. Sci.: 286, 1989.

Hedge, G., L. Huffman, B. Chang, and R. Dey. Normalization of thyroid blood flow (TBF) measurements to account for changes in the ratio of colloidal to cellular mass. Annals d'endocrinologie: 93, 1989.

Huffman, L.J., M. Michalkiewicz, J.M. Connors, Z. Pietrzyk, and G.A. Hedge. Functional significance of cholinergic and VIP-ergic effects at the thyroid gland. 19th Meet. Soc. for Neurosci.: 973, 1989.

Michalkiewicz, M., J. Connors, Z. Pietrzyk, L. Huffman, and G. Hedge. Acute iodide administration causes biphasic changes in thyroid blood flow in iodine deficient rats. 64th Meet. Amer. Thyroid Assoc.: T-50, 1989.

Michalkiewicz, M., J.M. Connors, L.J. Huffman, Z. Pietrzyk, and G.A. Hedge. Is thyroid blood flow a limiting factor for thyroid iodine supply? Intl. Symp. Thyroid Gland, Environment, and
Autoimmunity: 10, 1989.

Hedge, G.A., L.J. Huffman, M. Michalkiewicz, Z. Pietrzyk and M.Dey. Apparent regional differences in thyroid blood flow (TBF) responses to neuropeptides. 11th Annual Neuropeptide Conference, 1990.

Huffman, L., M. Michalkiewicz, Z. Pietrzyk and G.A. Hedge. Helodermin, but not SRIF, CCK-8, or TRH, acutely increases thyroid blood flow in the rat. FASEB J. 4:A303, 1990.

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Huffman, L.J., H. Kiyama, K.E. Vrana, H.M. Hallak, D.E.M. Lawson and P.C. Emson. Expression of the somatostatin gene in the rat thyroid gland. 72nd Meet. Endo. Soc.: 371, 1990.

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Hedge, G.A., Z. Pietrzyk, M. Michalkiewicz, L.J. Huffman and M. Dey. Vasoactive intestinal peptide (VIP) enhances thyroidal iodide uptake (U_pI) during dietary iodine deficiency. Symposium on Iodine and The Thyroid, Hellenic Endo. Soc.: 45, 1990.

Boegehold, M.A., L.J. Huffman and G.A. Hedge. Effect of dietary salt on peripheral vascular resistance and regional blood flows in Dahl rats. Clinical Research 38:867a, 1990.

Michalkiewicz, M., L. Huffman, M. Dey, and G.A. Hedge. Evidence that endogenous neuropeptide Y (NPY) is involved in the physiological regulation of thyroid blood flow (BF). Thyroid 1:S87, 1991.

Huffman, L.J., Michalkiewicz, M., K.E. Vrana, and G.A. Hedge. Effects of hypo- or hyperthyroid conditions on prepro-NPY mRNA and precursor-VIP/PHI mRNA levels in the superior cervical ganglia (SCG) and local thyroid ganglia (TG) of rats. 21st Meet. Soc. for Neurosci: 433, 1991.

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Huffman, L.J., M.A. Boegehold, J.M. Connors, and G.A. Hedge. Effect on dietary salt on thyroid function in the Dahl rat. The Physiologist: 34:251, 1991.

Michalkiewicz, M., L.J. Huffman, M. Dey, and G.A. Hedge. Vascular effects of systemic immunization against vasoactive intestinal peptide and neuropeptide Y. 22nd Meet. Soc. for Neurosci., 18:988, 1992.

Dey, M., M. Michalkiewicz, L.J. Huffman, and G.A. Hedge. Neuropeptide-Y (NPY), which decreases thyroid blood flow (TBF), is not a primary mediator of the acute TBF response to sympathetic nerve stimulation. 22nd Meet. Soc. for Neurosci., 18:820, 1992

Huffman, L.J. and C.S. Whisnant. Regulation of somatostatin gene expression by calcium and triiodothyronine in a rat medullary thyroid carcinoma cell line 22nd Meet. Soc. for Neurosci., 18:985, 1992.

Dey, M., M. Michalkiewicz, L.J. Huffman, and G.A. Hedge. A novel inositol phosphate, which inhibits NPY-induced thyroidal vasoconstriction, fails to block acute decreases in thyroid blood flow induced by sympathetic nerve stimulation. 14th Annual Neuropeptide Conference, 1993.

Michalkiewicz, M., L.J. Huffman, M. Dey, and G.A. Hedge. Passive immunization against vasoactive intestinal peptide (VIP) does not alter the thyroid blood flow response to iodine restriction. Proc. Int'l. Union Physiol. Sci.: 104, 1993.

Dey, M., M. Michalkiewicz, L.J. Huffman, and G.A. Hedge. Passive immunization against NPY inhibits NPY-induced thyroidal vasoconstriction, but does not prevent decreased thyroid blood flow after sympathetic nerve stimulation. Neuropeptide Y, Cambridge 1993: C5, 1993.

Huffman, L., A Hasan, D.J. Judy, V. Castranova, D. Gugliotta, and R. D. Dey. Effect of silica and rat interferon gamma on nitric oxide production by rat alveolar macrophages. Oxygen Radicals and Lung Injury Conference, 1993.

Russell, J., V. Castranova, V. Robinson, L. Huffman, D. Judy, and M. Whitmer. Effect of inhaled LPS on pulmonary vascular tone and alveolar macrophages in guinea pigs. Cotton Dust Conference, 1993.

Castranova, V., W.H. Pailes, D.J. Judy, and L.J. Huffman. Silica exposure increases nitric oxide (NO) production in rat alveolar type II cell fractions. Experimental Biology 94:A147, 1994.

Huffman, L.J., D.J. Judy, and V. Castranova. Effect of silica on nitric oxide (NO) production by rat alveolar macrophages. Experimental Biology 94:A150, 1994.

Huffman, L.J., H.V. Dedhia, D.E. Banks, M. Billie, D.J. Judy, and V. Castranova. Involvement of nitric oxide in diisocyanate-induced respiratory reactions. ICB=s 4th Symposium on Nitric Oxide, 1995.

Huffman, L.J., T. Blake, C. Felton, D.J. Judy, and V. Castranova. Superoxide dismutase (SOD) and catalase increase inducible nitric oxide (iNO) production by rat alveolar macrophages. Soc. Toxicol., 35th Ann. Meet., 1996.

Robertson, B., R.D. Dey, L.J. Huffman, and S.I. Said. NMDA-receptors are expressed by intrinsic neurons of rat larynx. Soc. Neurosci., 26th Ann. Meet., 1996.

Robertson, B., R. D. Dey, L.J. Huffman, M.J. Polak, and S.I. Said. Autoradiographic localization of NMDA receptors in the rat lung and implication in lung injury. Soc. Neurosci. Abstr. 23(Part 1): 931, 1997.

Huffman, L.J., X. Shi, L. Bowman, and P.R. Miles. Hemoglobin potentiates the generation of reactive oxygen species by alveolar macrophages. FASEB J. 13:A171, 1999.

Goldsmith, W.T., W. McKinney, L. Huffman, J.S. Fedan, J.S. Reynolds, E. Goldsmith, J. Smith, and D.G. Frazer. Bio-calorimeter system to measure the metabolic rate of laboratory animals after inhalation exposure to toxic materials. Am. J. Respir. Crit. Care Med. 159 (Suppl.):A490, 1999.

Huffman, L.J., D.J. Judy, K.M.K. Rao, D.G. Frazer, and W.T. Goldsmith. Effect of thyroid status on lung damage and activities of lung phagocytes under basal conditions and following LPS exposure. FASEB J. 14:A190, 2000.

Huffman, L.J., D.J. Prugh, K. Brumbaugh, and M.Ding. Influence of hyperthyroidism on rat lung cytokine production and nuclear factor-kB activation following ozone exposure. FASEB J.16:A961-A962, 2002.

Huffman, L.J., D.J. Prugh, K.C. Schuller, S. Cantrell, and D.W. Porter. Nitric oxide production by rat bronchoalveolar macrophages or polymorphonuclear leukocytes following intratracheal instillation of lipopolysaccharide or silica. 3rd International Conf. on Oxygen/Nitrogen Radicals: Cell Injury and Disease, 2002.

Huffman, L.J., D.J. Pruch, K. Brumbauth, D.G. Frazer, J.S. Reynolds, W.T. Goldsmith. Enhanced pulmonary inflammatory response to inhaled endotoxin in pregnant rats. Am. J. Respir. Crit. Care Med. 167(Abstract issue):A973, 2003.

Rec'd 9/1/11

CURRICULUM VITAE



Michael D. Johnson, Ph.D

PERSONAL

164 Mason Ridge Road
Mt. Morris, PA 15349
Phone (724)-324-5412

Married, no children

EDUCATION

Washington State University (B.S., zoology, 1970)
The University of Michigan (Ph.D., physiology, 1975)
Harvard University (Postdoctoral Fellow, 1976-1979)

PROFESSIONAL – Previous Positions held

Adjunct Professor of Physiology and Pharmacology
West Virginia University School of Medicine (March 2008 – present)

Associate Dean for Premedical Education
Weill Cornell Medical College in Qatar (January 2008 – June 2011)

11/12-1001

Description: The Associate Dean for Premedical Education at WCMC-Q is responsible for all aspects of the overall management of the premedical and Foundation educational programs of the college. Over 95% of the students who enter the first-year medical class at Weill Cornell Medical College in Qatar come through the premedical education program. I completed my initial (3-1/2 – yr.) contract but chose not to renew for another standard 3-yr term. During my tenure as Assoc. Dean I:

- Developed and managed the overall Premedical budget (Approx. $9 million/yr.)
- Taught a Biology Seminar course (BIOG 4000) to 1st-yr premedical students on current topics in Biology, 2008-2010.
- Served as a small-group Problem-Based Learning facilitator for 1st-yr medical students the Molecules, Genes, and Cells course and in the Human Structure/Function course (2008 – 2010).
- Served on the Premedical Admissions Committee (Chair, 2009-2010).
- Served on the Premedical Promotions and Graduation Committee (Chair, 2009-2011).
- Chaired a Dean's task force for improving premedical students' success rate, 2010.
- Led the development of a proposed 3-year Premedical Curriculum (never implemented).
- Co-chaired the Premedical Faculty Search Committee, 2008-2010.
- Served on the Dean's Executive Committee (of Assoc. Deans and the Vice-Dean for Admin.)
- *Ex. officio* member of the medical admissions committee.

Interim Director, Budgets and Financial Operations
(and Professor of Physiology)
West Virginia University Health Sciences Center (August 2006 – January 2008)

Description: The Budget Director at the Health Sciences Center is the senior financial officer on a day-to-day basis for the schools of Dentistry, Nursing, and Pharmacy. As the Interim Budget Director I:

- Authorized expenditures.
- Coordinated, compiled, and reviewed financial reports.
- Worked with and supported the HSC Deans as requested.
- Assisted central administration and worked with a variety of state agencies on matters pertaining to financial operations.
- As professor of physiology, I also facilitated a Problem-Based Learning section for first-year medical students.

Founding Dean, Oman Medical College
Sultanate of Oman (April 2001 – August 2006)

Description: In 2001 I relocated to the Sultanate of Oman at the request of WVU to oversee the initial development of a new premedical/medical (and later, pharmacy) school. I was the dean, WVU's official representative, and the sole academic in an initial working group of just five employees. When I returned to WVU in 2006 the school consisted of two campuses, 75 faculty/staff, and over 450 students. As dean I was responsible for all academic matters.

Examples of accomplishments:

- Developed and implemented a three-year foundation and premedical curriculum (in English) for native Arabic-speakers, in consultation with WVU.
- Chose appropriate textbooks, also in conjunction with WVU.
- Managed an operational budget of $2.5 million per year.
- Hired all faculty and academic personnel.
- Ensured that the Pre-Medical campus earned the required "approval to open" from the Ministry of Higher Education of Oman.
- Developed a student admissions policy and admitted all students,
- Counseled students and their parents.
- Promoted the college to the general public in Oman and the Gulf region.
- Directed the development of college policies and procedures and wrote the first *Student Handbook.*
- Assisted in the development of the basic sciences component of the medical curriculum.
- Developed a Bachelor of Pharmacy degree program and supervised the first three years of that program.

Professor, Department of Physiology
WVU Health Sciences Center (1988 – 2006)

Examples of accomplishments:

- Promoted curricular change. I was one of the developers (and the first Director) of Problem-Based Learning for medical students at WVU.
- Served as faculty advisor to Alpha Epsilon Delta, the undergraduate premedical honorary society at WVU.
- Wrote a successful undergraduate textbook, *Human Biology: Concepts and Current Issues,* now in its fifth edition.
- Taught various aspects of physiology to all HSC student groups.
- Served as WVU's representative in the Sultanate of Oman for over 5 years (see above).

Associate Professor of Physiology
WVU Health Sciences Center (1983 – 1988)

Examples of accomplishments:

- Served on the department Promotions and Tenure Committee.
- Continued an active and funded research program.
- Mentored two Ph.D. students.
- Taught various aspects of renal, endocrine and cardiovascular physiology.
- Served on the Admissions Committee of the School of Medicine (15 years).

Assistant Professor of Physiology
WVU Health Sciences Center (1979-1983)

Examples of accomplishments:

- Developed an active research program, funded by NIH.
- Directed the Graduate Program in the Department of Physiology.
- Taught various aspects of renal, endocrine, and cardiovascular physiology.

HONORS AND AWARDS

- Distinguished Teacher Award of the School of Medicine (1991).
- WVU Foundation Outstanding Teacher Award (1992)
- Dean's Award for Excellence in Education (2001)

COMMITTEE SERVICE (selected)

- Department of Physiology Graduate Studies Committee Chairman, 1980-1983.
- WVU School of Medicine, Admissions Committee, 1984-97 and 1999-2001.
- Member, West Virginia University Senate 1992-95. Ad Hoc Senate Committee to revise the guidelines on Student Rights and Responsibilities, 1993-1995.
- School of Medicine; Curriculum Review Task Force, 1993-94.
- Department of Physiology, Promotion and Tenure Committee, 1993-2001.
- WVU Senate Curriculum Committee, 1995-98.
- School of Medicine Curriculum Committee, 1997-98.

GRADUATE STUDENT COMMITTEE SERVICE

Student	Degree	Year	Department	Advisor
Edward J. McClain	M.S.	1981	Physiology	
Joyce M. Kille	Ph.D.	1985	Physiology	
J. Lynn Williams	Ph.D.	1985	Physiology	Johnson
Mark T. Rushing	Ph.D.	1985	Psychology	
Alisa Suvannapura	Ph.D.	1988	Physiology	
Susan Donahue	Ph.D.	1988	Pharmacology	

Carol J. Weaver	Ph.D.	1988	Physiology	Johnson
Aihua Deng	Ph.D.	1993	Physiology	
Shyama Masilamani	Ph.D.	1994	Physiology	

OTHER PROFESSIONAL ACTIVITIES (selected)

- Member, Board of Directors, WV Affil., American Heart Association (1984-88).
- Chairman, Peer Review Committee, WV Affil., American Heart Association, (1987-88).
- Co-Chair, Western Pennsylvania-WV Peer Review Committee, American Heart Association (1989-91).
- Grant Reviewer, Ford Foundation Postdoctoral and Dissertation Fellowships for Minorities Program, National Research Council (1989 and 1991).
- Program Reviewer, Research/Doctorate programs in Physiology for the National Research Council (1993).
- Member of the Education Committee of the American Physiological Society (an elected position; 1999-2001).

PUBLICATIONS

Textbooks

1. Concepts of Human Physiology, by R.L. Malvin, M.D. Johnson and G.M. Malvin. Benjamin Cummings, 1997.
2. Human Biology: Concepts and Current Issues, by Michael D. Johnson. Benjamin Cummings. 1st edition 2001; 2nd edition 2003; 3rd edition 2006; 4th edition 2008, 5th edition 2010 (6th edition to be released January, 2012).

Publications in Refereed Journals

1. Johnson, M.D. and R.L. Malvin. Plasma renin activity during pentobarbital anesthesia and graded hemorrhage in dogs. **Am. J. Physiol.** 229:1098-1101, 1975.
2. Johnson, M.D., C.S. Park and R.L. Malvin. Antidiuretic hormone and the distribution of renal cortical blood flow. **Am. J. Physiol.** 232:F111-F116, 1977.
3. Johnson, M.D. and R.L. Malvin. Stimulation of renal sodium reabsorption by angiotensin II. **Am. J. Physiol.** 232:F298-F306, 1977.
4. Fray, J.C.S., M.D. Johnson and A.C. Barger. Renin release and pressor response to renal arterial hypotension: effect of dietary sodium. **Am. J. Physiol.** 233:H191-H195, 1977.
5. Johnson, M.D., L.B. Kinter and Reinier Beeuwkes III. Effects of AVP and DDAVP on plasma renin activity and electrolyte excretion in conscious dogs. **Am. J. Physiol.** 236:F66-F70, 1979.

6. Johnson, M.D., D.N. Shier and A.C. Barger. Circulating catecholamines and control of plasma renin activity in conscious dogs. **Am. J. Physiol.** 236:H463-H470, 1979.
7. Johnson, M.D., E.R. Fahri, B.R. Troen and A.C. Barger. Plasma epinephrine and control of plasma renin activity:
possible extrarenal mechanisms. **Am. J. Physiol.** 236:H854-H859, 1979.
8. Johnson, M.D. and A.C. Barger. Circulating catecholamines in control of renal electrolyte and water excretion. **Am. J. Physiol.** 240:F192-F199, 1981.
9. Johnson, M.D. Plasma renin activity during infusion of epinephrine into the carotid and vertebral arteries of anesthetized dogs. **Endocrinol.** 111:947-952, 1982.
10. Johnson, M.D. Plasma renin activity during infusion of epinephrine into the celiac and superior mesenteric arteries in dogs. **Endocrinol.** 112:18-21, 1983.
11. Johnson, M.D. Circulating epinephrine stimulates renin secretion in anesthetized dogs by activation of extrarenal adrenoceptors. **Am. J. Physiol.** 246:F676-F684, 1984.
12. Johnson, M.D., J.W. Freese and D.E. Schmitt. Effects of a $beta_1$-adrenoceptor agonist, prenalterol, on renal function and renin secretion rate in anesthetized dogs. **J. Cardiovasc. Pharmacol.** 6:627-633, 1984.
13. Johnson, M.D. An improved bioassay method for determining natriuretic activity of atrial extracts. **Am. J. Physiol.** 248:F314-F318, 1985.
14. Johnson, M.D. Effect of intravenous epinephrine infusion on plasma renin activity in adrenalectomized dogs. **Life Sciences** 36:2403-2411, 1985.
15. Johnson, M.D. and J.L. Williams, Jr. Effects of histamine receptor antagonism on adrenaline-induced changes in blood pressure in intact dogs.
Clin. Exptl. Pharmacol. Physiol. 12:557-564, 1985.
16. Johnson, M.D. Relative natriuretic activities of synthetic atriopeptins I, II and III. **Life Sciences** 38:225-231, 1986.
17. Williams, J.L., Jr. and M.D. Johnson. Sympathetic nervous system and blood pressure maintenance in the Brattleboro DI rat. **Am. J. Physiol.** 250:R770-R775, 1986.
18. Johnson, M.D. Renin secretion in intact dogs following incubation of epinephrine in blood in vivo. **Life Sciences** 41:1945-1951, 1987.
19. Johnson, M.D., C.J. Whitener and T.S. Sears. Epinephrine- induced renin secretion is not initiated by cardiac adrenoceptors. **Am. J. Physiol.** 254:E265-E271, 1988.
20. Leichty, E.A., M.D. Johnson, D.Z. Meyerberg and M.D. Mullet. Daily sequential changes in plasma atrial natriuretic factor concentrations in mechanically ventilated low birth weight infants: Effect of surfactant replacement. **Biol. of the Neonate** 55:244-250, 1989.
21. Johnson, M.D. and T.A. Kotchen. Role of epinephrine in the development of hypertension in Dahl salt-sensitive rats. **Hypertension** 16:282-289, 1990.
22. Weaver, C.J. and M.D. Johnson. Effects of naloxone on renin and pressor responses to acute renal hypotension in rats. **Am. J. Physiol.** 259:E432-E436, 1990.
23. Boegehold, M.A, M.D. Johnson and H.W. Overbeck. Pressure-independent arteriolar rarefaction in hypertension. **Am. J. Physiol.** 261:H83-H87, 1991.

24. Johnson, M.D. and R.K. Cavender. Effects of an opiate receptor antagonist on renin release in dogs. **Am. J. Physiol.: Endocrinol. Metab.** 262:E100-E104, 1992.
25. Johnson, M.D. and B.K. Richmond. Effect of naloxone on hypertension in Dahl salt-sensitive rats. **Am. J. Physiol.: Heart Circ. Physiol.** 262:H162-H167, 1992.
26. Johnson, M.D., H.Y. Zhang and T.A. Kotchen. Sucrose does not raise blood pressure in rats maintained on a low-salt intake. **Hypertension** 21:779-785, 1993.
27. Richardson-Morton, K.D., M.D. Johnson and L.D. Van de Kar. The role of B-adrenoceptors and the sympathetic nervous system in serotonin and stress-induced increases in renin secretion. **Brain Res.** 698:185-192, 1995.

CURRICULUM VITAE

NAME: Richard Alan Johnston

March 9, 2023

PRESENT TITLE: Research Pharmacologist and Adjunct Associate Professor

WORK ADDRESS: Cubicle 2101.17, Mail Stop L-2015
Pathology and Physiology Research Branch
Health Effects Laboratory Division
National Institute for Occupational Safety and Health
Centers for Disease Control and Prevention
United States Department of Health and Human Services
1000 Frederick Lane
Morgantown, WV 26508-5402

E-MAIL: rfj1@cdc.gov

TELEPHONE: (304) 285-6353

CITIZENSHIP: United States of America

UNDERGRADUATE EDUCATION:

Institution and Location	Degree	Year Conferred	Field of Study
University of Pittsburgh Pittsburgh, PA	Bachelor of Science (*summa cum laude*)	1995	Chemistry

GRADUATE EDUCATION:

Institution and Location	Degree	Year Conferred	Field of Study
West Virginia University Morgantown, WV	Doctor of Philosophy	2000	Pharmacology and Toxicology

POSTDOCTORAL EDUCATION:

Institution and Location	Mentors	Training Period	Field of Study
Harvard School of Public Health, Boston, MA	Stephanie A. Shore, Ph.D. (Primary Mentor) and Joseph P. Mizgerd, Sc.D. (Secondary Mentor)	2001 − 2004	Lung Biology and Respiratory Disease

FEDERAL GOVERNMENT APPOINTMENTS:

1998 – 2001 **Regular Fellow**
Pathology and Physiology Research Branch
The Health Effects Laboratory Division
National Institute for Occupational Safety and Health
Centers for Disease Control and Prevention
United States Department of Health and Human Services
Morgantown, WV

2017 – Present **Research Pharmacologist**
Pathology and Physiology Research Branch
The Health Effects Laboratory Division
National Institute for Occupational Safety and Health
Centers for Disease Control and Prevention
United States Department of Health and Human Services

ACADEMIC AND ADMINISTRATIVE APPOINTMENTS:

2004 – 2006 **Research Associate**
Physiology Program
Department of Environmental Health
Harvard School of Public Health

2006 – 2008 **Visiting Assistant Professor of Medicine**
Division of Allergy, Pulmonary, Immunology, Critical Care, and Sleep
Department of Internal Medicine
School of Medicine
The University of Texas Medical Branch at Galveston, Galveston, TX

2007 – 2009 **Assistant Professor of Pharmacology and Toxicology**
Department of Pharmacology and Toxicology
School of Medicine
The University of Texas Medical Branch at Galveston

2008 – 2009 **Assistant Professor of Medicine**
Division of Pulmonary, Allergy, and Critical Care Medicine
Department of Internal Medicine
School of Medicine
The University of Texas Medical Branch at Galveston

2009 – 2012 **Assistant Professor of Pediatrics**
Pediatric Research Center
Department of Pediatrics
McGovern Medical School at The University of Texas Health Science Center at Houston
Houston, TX

2009 – 2017 **Associate Member**
The University of Texas Graduate School of Biomedical Sciences at Houston
Houston, TX

2012 – 2017 **Assistant Professor of Pediatrics**
Division of Critical Care Medicine
Department of Pediatrics
McGovern Medical School at The University of Texas Health Science Center at Houston

2014 – 2017 **Adjunct Assistant Professor of Integrative Biology and Pharmacology**
Department of Integrative Biology and Pharmacology
McGovern Medical School at The University of Texas Health Science Center at Houston

2017 – Present **Associate Member**
West Virginia University Robert C. Byrd Health Sciences Center Graduate Faculty
Morgantown, WV

2017 – Present **Adjunct Associate Professor of Medicine**
Section of Pulmonary, Critical Care, and Sleep Medicine
Department of Medicine
School of Medicine
West Virginia University

2017 – Present **Adjunct Associate Professor of Physiology and Pharmacology**
Department of Physiology and Pharmacology
School of Medicine
West Virginia University

2017 – 2023 **Adjunct Associate Professor of Pharmaceutical Sciences**
Department of Pharmaceutical Sciences
School of Pharmacy
West Virginia University

PROFESSIONAL ORGANIZATIONS AND COMMITTEES (NATIONAL):

1998 – Present **Member**, American Society for Pharmacology and Experimental Therapeutics
- 1999 – 2000 **Secretary**, Student Chapter
- 2000 – 2001 **President-Elect**, Student Chapter
- 2000 – 2001 **Student Representative**, Subcommittee on Preprofessional Education of the Committee on Educational Affairs
- 2001 – 2002 **Student Representative**, Committee on Graduate Recruitment and Education
- 2001 – 2002 **President**, Student Chapter
- 2002 – 2003 **Past-President**, Student Chapter
- 2021 – Present **Councilor**, Division for Toxicology Executive Committee

2000 – Present **Member**, American Thoracic Society
- 2007 – 2014 **Member**, Program Committee, Assembly on Respiratory Structure and Function
- 2008 – 2016 **Member**, Members in Transition and Training Committee
- 2009 – 2011 **Member**, Web Committee, Assembly on Respiratory Cell and Molecular Biology
- 2011 – 2015 **Member**, Assembly on Respiratory Structure and Function Members in Transition and Training Working Group
- 2012 – 2014 **Chair**, Assembly on Respiratory Structure and Function Members in Transition and Training Working Group
- 2012 – 2014 **Assembly Liaison**, Assembly on Respiratory Structure and Function
- 2016 – 2021 **Member**, Membership Committee
- 2016 – 2019 **Member**, Program Committee, Assembly on Environmental, Occupational and Population Health
- 2019 – Present **Member**, Ph.D. and Basic and Translational Scientist Working Group
- 2021 – 2022 **Co-Chair**, Ph.D. and Basic and Translational Scientist Working Group
- 2021 – 2022 **Member**, Assembly on Respiratory Structure and Function Executive Committee
- 2021 – Present **Member**, Planning and Evaluation Committee
- 2022 – Present **Assembly Chair Appointee**, Assembly on Respiratory Structure and Function Executive Committee
- 2023 – Present **Member**, Assembly on Respiratory Structure and Function Web Committee
- 2023 – Present **Director**, Assembly on Respiratory Structure and Function Web Committee

2014 – Present **Member**, American Physiological Society

2020 – Present **Member**, American Academy of Allergy, Asthma & Immunology
- 2021 – Present **Member**, Occupational Diseases Committee
- 2022 – Present **Member**, Cells and Mediators of Allergic Inflammation Committee

2021 – Present **Member**, Greater Pittsburgh Allergy, Asthma & Immunology Society

HONORS AND AWARDS:

1993	**College Scholar**, University of Pittsburgh at Greensburg, Greensburg, PA
1994	**Inducted**, Golden Key National Honor Society
1994	**Golden Key National Honor Society Scholarship Award**, University of Pittsburgh
1994 and 1995	**University Scholar**, University of Pittsburgh
1995	**Inducted**, Phi Beta Kappa
1995	**College of Arts and Sciences Alumni Merit Award**, University of Pittsburgh
1995	**Phillips Medal**, given for being the senior chemistry major with the most outstanding academic record, University of Pittsburgh
1995	**Program Honors in Chemistry**, Department of Chemistry, College of Arts and Sciences, University of Pittsburgh
1996 – 1998	**Predoctoral Training Graduate Research Assistantship in Pharmacological Sciences**, National Institutes of Health, Department of Pharmacology and Toxicology, School of Medicine, West Virginia University
1996 – 1998	**Swiger Supplemental Fellowship**, West Virginia University
1997	**Who's Who Among Students in American Universities and Colleges**, West Virginia University
2000	**Graduate Student Travel Award**, American Society for Pharmacology and Experimental Therapeutics
2000	**Second Place, Graduate Student Best Paper Award**, Division for Toxicology, American Society for Pharmacology and Experimental Therapeutics
2001 – 2004	**Postdoctoral Training Research Fellowship in Lung Biology and Respiratory Disease**, National Institutes of Health, Physiology Program, Department of Environmental Health, Harvard School of Public Health
2003	**Travel Award**, Assembly on Microbiology, Tuberculosis and Pulmonary Infections, American Thoracic Society
2003 – 2005	**Research Training Fellowship**, American Lung Association
2018 – Present	**Fellow**, American Thoracic Society

EDITORIAL POSITIONS:

2005 − Present	**Reviewer** for *American Journal of Physiology−Lung Cellular and Molecular Physiology*, *American Journal of Respiratory and Critical Care Medicine*, *American Journal of Respiratory Cell and Molecular Biology*, *Biology of Sex Differences*, *Clinical & Experimental Allergy*, *Ecotoxicology and Environmental Safety*, *Environmental Health Perspectives*, *European Journal of Pharmacology*, *Experimental Cell Research*, *Inflammation Research*, *Journal of Asthma*, *Journal of Applied Physiology*, *Molecular Immunology*, *Nutrition Research Reviews*, *Pulmonary Pharmacology & Therapeutics*, *Respiratory Physiology & Neurobiology*, *Respiratory Research*, *Scientific Reports*, *The American Journal of Pathology*, and *Toxicological Sciences*
2015 − 2017	**Member**, Early Career *American Journal of Respiratory and Critical Care Medicine* Group
2017	**Early Career Associate Editor**, *American Journal of Respiratory and Critical Care Medicine*

2019 – 2022 **Member**, Editorial Board, *American Journal of Respiratory Cell and Molecular Biology*

SERVICE ON GRANT REVIEW PANELS, STUDY SECTIONS, AND COMMITTEES:

2012 **Reviewer**, Netherlands Asthma Foundation

2013 **Member**, National Institutes of Health Study Section [ZES1 JAB J (MB)], Environmental Influences on the Microbiome

2013 **Member**, National Institutes of Health Study Section [ZRG1 CVRS-G (02)], Special Emphasis Panel, Member Conflict, Pulmonary Disease

2020 **Reviewer**, West Virginia IDeA Network of Biomedical Research Excellence

2023 − Present **Member**, National Institute for Occupational Safety and Health, Respiratory Health Cross-Sector Steering Committee

SERVICE ON WEST VIRGINIA UNIVERSITY SCHOOL OF MEDICINE COMMITTEES:

1999 – 2000 **Graduate Student Representative**, Department of Pharmacology and Toxicology

2000 **Member**, Search Committee for the position of Mylan Chair of Pharmacology and Toxicology

2018 −2019 **Member**, Awards Committee, Toxicology Working Group

2019 – 2020 **Member**, Faculty Search Committee, Department of Physiology and Pharmacology

2019 – Present **Member**, Seminar Committee, Department of Physiology and Pharmacology

2019 – Present **Member**, Graduate Advisory Committee, Cellular and Integrative Physiology Graduate Program

2019 – Present **Member**, Research Committee, Section of Pulmonary, Critical Care, and Sleep Medicine, Department of Medicine

2020 – Present **Member**, Web Committee, Department of Physiology and Pharmacology

SERVICE ON HARVARD SCHOOL OF PUBLIC HEALTH COMMITTEES:

2004 **Member**, Trainee Steering Committee, Physiology Program, Department of Environmental Health

SERVICE ON THE UNIVERSITY OF TEXAS MEDICAL BRANCH AT GALVESTON COMMITTEES:

2007 – 2009 **Member**, Curriculum Committee, Department of Pharmacology and Toxicology, School of Medicine

2007 – 2009 **Member**, Curriculum Committee, Graduate School of Biomedical Sciences

2007 – 2009 **Member**, Basic Biomedical Science Curriculum Committee, Graduate School of Biomedical Sciences

2008 – 2009 **Member**, Allergy and Immunology Fellowship Research Advisory Committee, Division of Pulmonary, Allergy, and Critical Care Medicine, School of Medicine

SERVICE ON THE UNIVERSITY OF TEXAS GRADUATE SCHOOL OF BIOMEDICAL SCIENCES AT HOUSTON COMMITTEES:

2010 – 2014 **Member**, Molecular Pathology Program

SERVICE ON MCGOVERN MEDICAL SCHOOL AT THE UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER AT HOUSTON COMMITTEES:

2011 – 2017	**Associate Director for Research**, Division of Critical Care Medicine, Department of Pediatrics
2011	**Chair**, Program Committee, Research Retreat, Pediatric Research Center, Department of Pediatrics
2011 – 2017	**Director**, Divisional Research Conference, Division of Critical Care Medicine, Department of Pediatrics
2012 – 2017	**Co-Chair**, Fellows Research Symposium, Department of Pediatrics
2012 – 2014	**Director**, Critical Care Medicine Journal Club, Division of Critical Care Medicine, Department of Pediatrics
2013 – 2014	**Interim Associate Program Director**, Pediatric Critical Care Medicine Fellowship Program, Division of Critical Care Medicine, Department of Pediatrics
2013 – 2014	**Director**, Critical Care Medicine Divisional Curriculum Lecture Series, Division of Critical Care Medicine, Department of Pediatrics
2014 – 2017	**Member**, Medical Student Pulmonary Module Curriculum Revision Subcommittee
2014 – 2016	**Member**, Faculty Senate
2014 – 2017	**Member**, Clinical Competency Committee, Pediatric Critical Care Medicine Fellowship Program, Division of Critical Care Medicine, Department of Pediatrics
2016 – 2017	**Co-Organizer**, Research Seminar Series, Department of Pediatrics

SERVICE ON NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH COMMITTEES:

2017 – Present	**Member**, External Speaker Selection Committee, Pathology and Physiology Research Branch, Health Effects Laboratory Division
2017 – 2019	**Co-Organizer**, Pathology and Physiology Research Branch Seminar Series, Health Effects Laboratory Division
2020 – Present	**Member**, CDC/NIOSH-Morgantown Occupational Health and Safety Committee
2020 – 2021	**Member**, Planning Committee, NIOSH Intramural Science Meeting
2021	**Vice-Chair**, CDC/NIOSH-Morgantown Occupational Health and Safety Committee
2022 – Present	**Chair**, CDC/NIOSH-Morgantown Occupational Health and Safety Committee

TEACHING RESPONSIBILITIES:

1998 – 2000 **Medical Pharmacology (PCOL 361), West Virginia University**

This course is a requirement of second-year students enrolled in the Doctor of Medicine degree program. During the Spring Term of 1998, 1999, and 2000, I served as a Problem-Based Learning (PBL) and Patient-Oriented Problem Solving (POPS) Exercise Conference Co-Leader along with a faculty member. Both the PBL and POPS Exercise Conferences, which together comprised of five, focused on the application of pharmacological principles to clinical practice.

1999 **Foundations of Biology 1 (BIOSC 0170), University of Pittsburgh at Greensburg, Greensburg, PA**

This course is part of the core requirements for students enrolled in the Biological Sciences major, which leads to a Bachelor of Science degree. During the Fall Term of 1999, I was a Guest Lecturer on the topic of “Respiration”.

1999 **Pharmacology and Therapeutics (PCOL 360), West Virginia University**
This course is a requirement of third-year students enrolled in the Doctor of Dental Surgery degree program. During the Fall Term of 1999, I lectured on the topics of "Antifungal Chemotherapy", "Chemotherapy of Tuberculosis", and "Fluoride Toxicity".

1999 **Pharmacology (PCOL 160), West Virginia University**
This course is a requirement of second-year students enrolled in the Bachelor of Science in Nursing degree program. During the Spring Term of 1999, I lectured on the topics of "Pharmacology of Asthma" and "Pharmacology of Epilepsy" while during the Spring Term of 2000, I added a third lecture entitled "Antihistamines".

2003 – 2005 **The Human Organism (Science B-23), Harvard University, Boston, MA**
This course is one of several science electives for Harvard University non-science majors, which fulfills one of the science requirements of Harvard University's Core Curriculum. I served as a Section Leader during the Spring Terms of 2003, 2004, and 2005. I presented five lectures on "The Use and Abuse of Drugs by Society".

2004 **Human Pathophysiology II (NSCI E-163), Harvard University**
This course is designed for undergraduate and graduate students and focuses on the underlying pathophysiology of the nervous, endocrine, reproductive, and gastrointestinal systems. During the Fall Term of 2004, I served as a grader for this course. My responsibilities included correcting midterm and final examinations and four problem sets.

2004 – 2005 **Human Physiology (EH205), Harvard University**
This course introduces physiological principles to graduate and undergraduate students interested in pursuing a career in public health. During the Fall Terms of 2004 and 2005, I presented two lectures focusing on the topics of "Gastrointestinal Physiology."

2005 **Human Pathophysiology I (BIOL E-162), Harvard University**
This course is designed for undergraduate and graduate students and focuses on the underlying pathophysiology of the cardiovascular, respiratory, and renal systems. During the Fall Term of 2005, I presented three separate two-hour lectures concerning "Respiratory Pathophysiology". In addition, I served as a teaching assistant and grader for this course, whose responsibilities included reviewing lecture material with the students and correcting midterm and final examinations and four problem sets.

2006 – 2008 **Cardiovascular/Pulmonary Course, The University of Texas Medical Branch at Galveston**
This course is a requirement of second-year students enrolled in the Doctor of Medicine degree program. During the Summer Term of 2006, I lectured on the topic of "Alveolar Ventilation". During the Summer Terms of 2007 and 2008, I lectured on the topics of "Alveolar Ventilation and Gas Diffusion".

2007 – 2008 **Allergy, Pulmonary, Immunology, Critical Care, and Sleep Summer Research Mini-Course, The University of Texas Medical Branch at Galveston**
This course is a requirement of all first-year allergy and immunology and second-year pulmonary and critical care medicine subspecialty fellows training in the Division of Allergy, Pulmonary, Immunology, Critical Care, and Sleep of the Department of Internal Medicine. It consists of a series of basic science lectures and laboratory exercises. During the summer of 2006, I lectured on the topic of "The Biology of the Laboratory Mouse" and led a laboratory exercise entitled, "Enzyme-Linked Immunosorbent Assay". Again, in 2007 and 2008, I lectured on the topic of "The Biology of the Laboratory Mouse".

2007 – 2008 **Systemic Physiology and Tools for Translational Biology (BBSC 6209), The University of Texas Medical Branch at Galveston**
This course is designed to give graduate students an introduction to the physiology of the human cardiovascular, respiratory, renal, and gastrointestinal systems. Furthermore, this course is concerned with the role of systemic physiology in translational biology research that advances patient care. During the Spring Term of 2007, I lectured on the topic of "Transport of Oxygen and Carbon Dioxide in the Blood". In the Spring Term of 2008, I added a second lecture entitled, "Alveolar Ventilation and Gas Diffusion".

2007 – 2008 **Autonomic, Cardiovascular, and Central Nervous System Pharmacology (PHTO 6312), The University of Texas Medical Branch at Galveston**

This course is a requirement for all students enrolled in the pharmacology and toxicology Master of Science or Doctor of Philosophy degree programs. This course is concerned with the mechanisms of action of pharmacological agents, which influence the functions of the autonomic and central nervous systems as well as the cardiovascular system. During the Fall Term of 2007, I lectured on the topic of "General Anesthetics". In the Fall Term of 2008, I served as the Course Director of this course. In addition, during the Fall Term of 2008, I presented lectures entitled "Introduction to the Discipline of Pharmacology", "Anti-Epileptic Drugs", and "General Anesthetics".

2008 **Endocrine, Chemotherapy, and Toxicology Course (PHTO 6213), The University of Texas Medical Branch at Galveston**

This course is a requirement for all students enrolled in the pharmacology and toxicology Master of Science or Doctor of Philosophy degree programs. This course is concerned with the mechanisms of action of pharmacological agents, which influence the endocrine system. In addition, this course is concerned with the effects of chemotherapeutic and toxic agents. During the Spring Term of 2008, I lectured on the topic of "Hypolipidemic Drugs".

2011 – 2012 **Histology for Graduate Students (GS120013), The University of Texas Graduate School of Biomedical Sciences at Houston**

This course is an elective for graduate students pursuing a Master of Science or Doctor of Philosophy degree at The University of Texas Graduate School of Biomedical Sciences at Houston. This course is concerned with the histology of the various organ systems found in the human body. During the Summer Term of 2011 and 2012, I lectured on the topic of "The Respiratory System".

2012 – 2016 **Mammalian Physiology (2129BSCI1007-M), McGovern Medical School at The University of Texas Health Science Center at Houston**

This course is a requirement for first-year students enrolled in the Doctor of Medicine degree program and focuses on the fundamentals of human cell and systems physiology. During the Spring Terms of 2012, 2013, 2014, and 2016, I lectured on the topic of "Alveolar Ventilation and Perfusion". In 2014 and 2016, I lectured on the topic of "Respiration − Gas Transport". In 2016, I also lectured on the topics of "Respiration – Control of Ventilation" and "Integrative Review – Pathophysiology of Gas Transport". Finally, in 2015, I served as the co-director of the respiratory physiology module for this course.

2012 – 2013 **Cell and Systems Physiology (2131GS121254-100), The University of Texas Graduate School of Biomedical Sciences at Houston**

This course is an elective for graduate students pursuing a Master of Science or Doctor of Philosophy degree at The University of Texas Graduate School of Biomedical Sciences at Houston. This course is designed to give students an introduction to the principles of general, nervous system, and muscle physiology as well as the physiology of the cardiovascular, respiratory, renal, and gastrointestinal systems. During the Spring Term of 2012 and 2013, I presented a six-hour lecture series on "Respiratory Physiology".

2012 – 2016 **Medical Pharmacology (2129BSCI2005-M), McGovern Medical School at The University of Texas Health Science Center at Houston**

This course is a requirement for second-year students enrolled in the Doctor of Medicine degree program and focuses on the fundamentals of medical pharmacology. During the Fall Terms of 2012, 2013, 2014, 2015, and 2016, I presented a two-hour lecture entitled "Respiratory Pharmacology".

2016 **Foundations of Medical Science (2169BSCI1100-001), McGovern Medical School at The University of Texas Health Science Center at Houston**

This course is a requirement for first-year medical students enrolled in the Doctor of Medicine degree program and provides students with the necessary fundamentals to study human disease at an advanced level. During the Fall Term of 2016, I presented a two-hour lecture entitled "Pulmonary Physiology II" that covered the topics of alveolar ventilation and gas diffusion in the lung. In addition, in the Fall Term of 2016, I was the co-leader of a one-hour "Pulmonary Problem Session".

2017 **Pulmonary System (2169BSCI1202-002), McGovern Medical School at The University of Texas Health Science Center at Houston**

This course is a requirement for first-year medical students enrolled in the Doctor of Medicine degree program and addresses clinical issues associated with pulmonary health. During the Spring Term of 2017, I presented a one-hour lecture entitled "Respiratory Pharmacology" that covered those pharmacological agents used to treat asthma, chronic obstructive pulmonary disease, allergic rhinitis, and abnormal mucus secretion.

2017 − 2021 **Medical Pharmacology (PCOL 820), School of Medicine, West Virginia University**

This course is a requirement for second-year medical students enrolled in the Doctor of Medicine degree program and focuses on the fundamentals of medical pharmacology. During the Fall Term of 2017, I served as a facilitator for the Journal Club associated with this course. As a facilitator, I was responsible for grading oral and written summaries of peer-reviewed pharmacology studies that were presented by the students. During the Fall Terms of 2018-2022, I presented a two-hour lecture entitled "Anticoagulant, Anti-Platelet, and Fibrinolytic Drugs" while during the Fall Term of 2021, I presented one-hour lectures entitled "Drugs for Asthma and COPD" and "Mucoactive Drugs".

2018 **Pulmonary Pharmacology, Physiology and Disease (PHAR 791), School of Pharmacy, West Virginia University**

This course is an elective for students at West Virginia University and focuses on the pharmacology, physiology, and diseases of the respiratory system. During the Spring Term of 2018, I presented a two-hour lecture entitled "Respiratory Pharmacology" and a one-hour lecture entitled "Lipopolysaccharide".

2021 **Problem-Based Learning 2 (CCMD 823), School of Medicine, West Virginia University**

This course is a requirement of second-year students enrolled in the Doctor of Medicine degree program. During the Fall Term of 2021, I served as a facilitator for problem-based learning conferences containing eight students. The purpose of these conferences is to prompt students to apply basic science concepts and principles to solve problems pertaining to clinical cases.

MENTORING ACTIVITIES:

A. The University of Texas Graduate School of Biomedical Sciences at Houston Graduate Student Committees

1. Examination Committee
Thuy T. Le (M.D./Ph.D. Candidate)

2. Supervisory Committee
Thuy T. Le (M.D./Ph.D. Candidate)

B. Undergraduate Student: Primary Mentor

Name	Training Period	Current Position
Fallon A. Mattis	06/2002 − 08/2002	Physician, Sentara Halifax Family Medicine, South Boston, VA

C. Graduate Student: First-Year Graduate Student Faculty Mentor

Name	Mentoring Period	Current Position
David A. Stanton	08/2017 – 07/2018	Biomedical Sciences Graduate Student, West Virginia University

D. McGovern Medical School at The University of Texas Health Science Center at Houston Medical Students: Primary Mentor

Name	Training Period	Current Position	Awards During Mentorship Period
Amy L. Alexander	05/2012 − 08/2012	Pediatric Endocrinologist, Dell Children's Medical Center, Austin, TX	NIH/NIDDK Stipend
Katherine J. Cockerill	05/2012 − 08/2012	Urologist, Urology San Antonio, San Antonio, TX	NIH/NIDDK Stipend
William T. Jackson	05/2014 – 08/2016	Neurologist, HCA Houston Healthcare Clear Lake, Webster, TX	NIH/NIDDK Stipend
Nicholas C. Mitchell	05/2015 – 08/2015	Resident, Psychiatry, St. Elizabeths Hospital, Washington, D.C.	Dean's Office Stipend

E. Postdoctoral Ph.D. Fellow: Primary Mentor

Name	Training Period	Current Position	Awards During Fellowship
Albert W. Pilkington, IV, Ph.D.	03/2020 − Present	Associate Service Fellow, CDC/NIOSH/HELD/PPRB	−

F. Postdoctoral Sub-Specialty Clinical Fellows: Primary Mentor

Name	Training Period	Current Position	Awards During Mentorship Period
Ramon X. Barreno, M.D.	08/2010 – 06/2011	Anesthesiologist, Anesthesia Associates of Texas, El Paso, TX	−
Paul H. Dahm, M.D.	08/2010 – 06/2013	Assistant Professor, Division of Critical Care Medicine, Department of Pediatrics, McGovern Medical School	Honorable Mention, Texas Pediatric Society Resident and Fellow Section Poster Contest (2012) and Pediatric Academic Societies Travel Award for Basic Science (2013)
Hamza S. Elkhidir, M.D.	12/2010 – 06/2013	Attending Physician, Pediatric Cardiovascular Intensive Care Unit, Sidra Medical and Research Center, Doha, Qatar	American Thoracic Society Minority Trainee Development Scholarship (2013)

Shehla S. Razvi, M.D.	03/2012 – 08/2014	Assistant Professor, Critical Care Services, Division of Pediatrics, Children's Cancer Hospital, The University of Texas M.D. Anderson Cancer Center, Houston, TX	American Thoracic Society Fellows Track Symposium Travel Award (2014); Presenter, Respiratory Disease Young Investigators' Forum (2014)
Farhan Malik, D.O.	09/2012 – 06/2015	Assistant Professor, Critical Care, Johns Hopkins All Children's Hospital, St. Petersburg, FL	American Thoracic Society Fellows Track Symposium Travel Award (2014 and 2015); Presenter, Respiratory Disease Young Investigators' Forum (2014)
Chantal Y. Spencer, M.D.	11/2012 – 06/2015	Assistant Professor, Division of Pulmonology, Department of Pediatrics, Icahn School of Medicine at Mount Sinai, New York City, New York	American Thoracic Society Minority Trainee Development Scholarship (2015)
Mohamed B. Abdelfattah, M.D.	12/2017 – 06/2020	Pulmonologist and Intensivist, Martin Luther King, Jr. Community Healthcare, Los Angeles, CA	American Thoracic Society Fellows Track Symposium Travel Award (2019)

G. Professional Trainees: Primary Mentor

Name	Training Period	Current Position
Nedaa M. Husainat, M.B.B.S.	05/31/2016 – 08/23/2016	Medical Resident, St. Mary's Health Center, St. Louis, MO
Saad R. Siddiqui, B.S.	09/14/2016 – 04/21/2017	Fourth-Year Student, Arkansas College of Osteopathic Medicine, Fort Smith, AR

H. Other Mentoring Activities

2014 **Reviewer**, MS-1 Research Proposals, Summer Research Program, The University of Texas Medical School at Houston

2014 **Judge**, Summer Research Program – Research Forum and Webber Prize Competition, The University of Texas Medical School at Houston

CURRENT GRANT SUPPORT:

9390BN3	R.A. Johnston (P.I.)	10/01/2018−09/30/2023	50%
CDC/NIOSH	$231,197		

Obesity-induced exacerbations of occupational asthma

The major goal of this project is to understand how obesity affects the severity of irritant-induced occupational asthma exacerbations. Specifically, the role of chemerin, a pleiotropic adipocytokine, in this phenomenon will be evaluated.

9390KK6 R.A. Johnston (P.I.) 10/01/2022−09/30/2025 50%
CDC/NIOSH/NORA $182,055
Characterization of a Mouse Model of Peracetic Acid-Induced Work-Related Asthma
The major goal of this project is to develop and characterize a mouse model of work-related asthma caused by peracetic acid, a common ingredient of disinfectant cleaners.

PAST GRANT SUPPORT:

R03ES022378 R.A. Johnston (P.I.) 11/08/2012−10/31/2015 20%
NIH/NIEHS $50,000
Obesity and environmental lung disease: The role of chemerin
The major goal of this project is to understand the contribution of the adipokine, chemerin, in pulmonary responses to ozone in the obese.

R03AI107432 R.A. Johnston (P.I.) 05/25/2013−04/30/2015 10%
NIH/NIAID $50,000
Obesity and allergic airway hyperresponsiveness
The major goal of this project is to understand the contribution of the resistin to the development of chronic systemic inflammation in the obese, and subsequently, airway hyperresponsiveness in obese asthmatics.

R03ES024883 R.A. Johnston (P.I.) 07/01/2015−06/30/2017 10%
NIH/NIEHS $50,000
Visfatin and ozone-induced airway hyperresponsiveness in obesity
The major goal of this project is to understand the contribution of the adipose-derived, pro-inflammatory cytokine and enzyme, visfatin, to the development of enhanced airway responsiveness to ozone in obesity *via* signaling in alveolar macrophages.

PUBLICATIONS:

A. Abstracts

1. **Johnston RA** and Fedan JS (1999) Effects of lipopolysaccharide on reactivity of airway smooth muscle to methacholine and epithelium-derived relaxing factor. *FASEB J* **13:**A170.
2. **Johnston RA** and Fedan JS (1999) Effects of lipopolysaccharide on tracheal epithelial bioelectric responses to serosally- and mucosally-applied methacholine. *Am J Respir Crit Care Med* **159:**A294.
3. **Johnston RA** and Fedan JS (2000) Lipopolysaccharide (LPS)-induced alterations in airway smooth muscle reactivity to epithelium-derived relaxing factor (EpDRF) are osmolyte dependent. *FASEB J* **14:**A602.
4. Fedan JS, **Johnston RA** and Rengasamy A (2000) Responses of guinea-pig isolated, perfused trachea (IPT) to luminally-applied hypertonic and isotonic osmolyte solutions. *FASEB J* **14:**A602.
5. **Johnston RA** and Fedan JS (2000) Effects of lipopolysaccharide (LPS) on tracheal epithelial bioelectric responses to serosally- and mucosally-applied indomethacin and hypertonic sodium chloride. *Am J Respir Crit Care Med* **161:**A155.
6. Fedan JS, **Johnston RA**, Cutler D and Rengasamy A (2000) Effects of hypertonic solutions in guinea-pig isolated, perfused trachea: Comparison of solutes. *Am J Respir Crit Care Med* **161:**A157.
7. **Johnston RA**, Olson SG and Fedan JS (2000) Lipopolysaccharide-induced airway hyporeactivity to methacholine in guinea pigs *in vivo* is absent in the isolated, perfused trachea *in vitro*. *FASEB J* **14:**A1497.
8. Fedan JS, Rengasamy A, **Johnston RA** and Van Scott MR (2000) Bioelectric effects of hyperosmolar solutions on epithelium of guinea-pig isolated trachea. *FASEB J* **14:**A1499.
9. Fedan JS, **Johnston RA**, Dortch-Carnes J, Rengasamy A and Van Scott MR (2000) Osmotic regulation of epithelium-derived relaxing factor (EpDRF) release in airway epithelium. *Comp Biochem Physiol* **126A:**S48.

10. **Johnston RA**, Van Scott MR, Rengasamy A and Fedan JS (2001) Effect of ion transport inhibitors on the bioelectric responses of guinea-pig tracheal epithelium to hypertonic sodium chloride solution. *FASEB J* **15:**A861.

11. Fedan JS, Peppers JA and **Johnston RA** (2001) Examination of the possible role of prostanoids on responses of guinea-pig isolated, perfused trachea (IPT) to luminally-applied isotonic osmolyte solutions. *FASEB J* **15:**A862.

12. **Johnston RA**, Van Scott MR, Rengasamy A and Fedan JS (2001) The effect of ion transport inhibitors on the bioelectric responses of guinea-pig tracheal epithelium to hypertonic D-mannitol solution. *Am J Respir Crit Care Med* **163:**A659.

13. Fedan JS, Dowdy J, Reasor MJ, Van Scott MR and **Johnston RA** (2002) Epithelium-dependent relaxation responses of guinea-pig isolated, perfused trachea to hypertonic solution involves carbon monoxide (CO). *Am J Respir Crit Care Med* **165:**A65.

14. Wu DX-Y, **Johnston RA**, Van Scott MR and Fedan JS (2002) Bioelectric responses of guinea-pig tracheal epithelium to hyperosmolar and isosmolar challenges. *Am J Respir Crit Care Med* **165:**A66.

15. **Johnston RA**, Schwartzman IN, Krishna Murthy GG and Shore SA (2002) Effect of leptin on ozone (O_3)-induced airway hyperreactivity and injury in C57BL/6J mice. *Am J Respir Crit Care Med* **165:**A776.

16. **Johnston RA**, Schwartzman IN, Krishna Murthy GG and Shore SA (2002) Ozone (O_3)-induced airway hyperreactivity and inflammation in leptin-deficient and leptin receptor-deficient mice. *Am J Respir Crit Care Med* **165:**A802.

17. **Johnston RA**, Schwartzman IN and Shore SA (2003) Macrophage inflammatory protein-2 levels are associated with changes in serum leptin concentrations following ozone-induced airway inflammation. *Chest* **123:**369S-370S.

18. **Johnston RA**, Mizgerd JP, Lupa MM and Shore SA (2003) Host defenses are compromised in *ob*/*ob* mice following pulmonary *Escherichia coli* infection. *Am J Respir Crit Care Med* **167:**A198.

19. **Johnston RA**, Schwartzman IN, Mattis FA and Shore SA (2003) Effect of fasting on murine airway responses to ozone. *Am J Respir Crit Care Med*. **167:**A880.

20. **Johnston RA** and Shore SA (2003) Effect of a high fat diet on allergen-induced airway responses in mice. *Am J Respir Crit Care Med* **167:**A880.

21. **Johnston RA**, Mizgerd JP, Lupa MM and Shore SA (2003) Chemokine receptor 2 contributes to ozone-induced airway hyperresponsiveness in mice. *Am J Respir Crit Care Med* **167:**A885.

22. Shore SA, Schwartzman IN and **Johnston RA** (2004) Mechanisms of age-dependent ozone-induced airway dysfunction. *Proceedings: Human Health Symposium – A STAR Progress Review Workshop* Page 48.

23. **Johnston RA**, Schwartzman IN and Shore SA (2004) Differential responses of immature and mature mice to subacute ozone exposure. *Am J Respir Crit Care Med* **169:**A484.

24. **Johnston RA**, Mizgerd JP, Theman TA, Lupa MM and Shore SA (2004) Role of interleukin-1 signaling in ozone-induced airway inflammation. *Am J Respir Crit Care Med* **169:**A484.

25. Fedan JS, Dowdy JA, Van Scott MR, Wu DX-Y and **Johnston RA** (2004) Studies on the identity of epithelium-derived relaxing factor in isolated, perfused trachea using pharmacological agents. *Am J Respir Crit Care Med* **169:**A674.

26. **Johnston RA**, Schwartzman IN, Mellema MS, Imrich A and Shore SA (2004) Effect of leptin on allergic airway responses in mice. *Am J Respir Crit Care Med* **169:**A762.

27. Rivera-Sanchez YM, **Johnston RA**, Theman TA and Shore SA (2004) Impact of obesity on allergic airway responses in mice. *Am J Respir Crit Care Med* **169:**A762.

28. **Johnston RA**, Theman TA and Shore SA (2005) Elevated systemic inflammatory markers are associated with augmented responses to ozone in obese mice. *Proc Am Thorac Soc* **2:**A779.

29. Lu FL, **Johnston RA**, Schwartzman IN, Terry RD and Shore SA (2005) Ozone induced changes in lung mechanics and airway inflammation are increased in mice genetically deficient in the leptin receptor, OB-R_b. *Proc Am Thorac Soc* **2:**A850.

30. **Johnston RA**, Lu FL, Terry RD, Williams ES and Shore SA (2006) Effect of obesity on airway responses to subacute ozone exposure. *Proc Am Thorac Soc* **3:**A386.

31. **Johnston RA**, Williams ES and Shore SA (2006) Airway responses to ozone during the development of obesity. *Proc Am Thorac Soc* **3:**A528.

32. Lang JE, Williams E, Flynt L, **Johnston RA**, Lu FL and Shore SA (2006) IL-6 contributes to airway responses to acute ozone exposure in lean and obese mice. *Proc Am Thorac Soc* **3:**A821.

33. **Johnston RA**, Williams ES, Lee A, Flynt L, Hug C, Ranscht B and Shore SA (2007) T-cadherin deficiency enhances ozone (O_3)-induced pulmonary injury and inflammation. *Am J Respir Crit Care Med* **175:**A542.

34. Zhu M, Williams ES, Lang JE, **Johnston RA** and Shore SA (2007) Allergic airway responses in obese *db*/*db* mice. *Am J Respir Crit Care Med* **175:**A912.

35. **Johnston RA**, Theman TA, Lu FL, Terry RD, Williams ES and Shore SA (2007) Diet-induced obesity causes airway hyperresponsiveness and increases pulmonary inflammation induced by ozone. *Am J Respir Crit Care Med* **175:**A963.

36. **Johnston RA** and Hallberg LM (2008) Pulmonary responses to nitrogen dioxide in obese *ob*/*ob* mice. *Am J Respir Crit Care Med* **177:**A834.

37. Pichavant M, Goya S, Meyer E, **Johnston R**, Kim H, Matangkasombut P, Zhu M, Iwakura Y, Savage P, DeKruyff R, Shore S and Umetsu D (2008) Ozone exposure in a mouse model induces airway hyperreactivity that requires the presence of natural killer T cells and IL-17. *Clin Immunol* **127:**S38.

38. **Johnston RA**, Hernandez CB and Hallberg LM (2009) Impact of plasminogen activator inhibitor-1 (PAI-1) deficiency on pulmonary responses to ozone (O_3). *Am J Respir Crit Care Med* **179:**A2580.

39. Fedan JS, Ismailoglu UB, **Johnston RA**, Dowdy JA, Jing Y, Van Scott MR and Dodrill MW (2009) Epithelium-derived relaxing factor (EpDRF): Release from airway epithelium by hyperosmolar challenge. Cellular Osmoregulation and Mechanotransduction Gordon Research Conference: Sensation, Transduction and Integration of Osmotic and Mechanical Signals, Biddeford, ME.

40. **Johnston RA**, Hernandez CB, Hallberg LM, Schneider DJ and Blackburn MR (2010) Effect of osteopontin on airway responsiveness to methacholine and ozone-induced pulmonary injury and inflammation. *Am J Respir Crit Care Med* **181:**A1149.

41. **Johnston RA**, Barreno RX, Dahm PH and Haque IU (2011) Allergic pulmonary responses in obese carboxypeptidase E (Cpe)-deficient mice. *Am J Respir Crit Care Med* **183:**A2666.

42. Dahm PH, Haque IU and **Johnston RA** (2012) Enhanced pulmonary responses to allergen in obese mice is independent of genetic background. *Crit Care Med* **39:**173.

43. Elkhidir HS, Barreno RX, Dahm PH, Haque IU and **Johnston RA** (2012) Effect of obesity on pulmonary responses to chronic allergen challenge. *Am J Respir Crit Care Med*, **185:**A1780.

44. Dahm PH, Haque IU and **Johnston RA** (2013) Obesity-induced chronic systemic inflammation and the development of allergen-induced airway obstruction in moderately obese TallyHo (TH) mice. Texas Pediatric Society

45. Karmouty-Quintana H, Weng T, Garcia-Morales LJ, Chen N-Y, Pedroza M, Zhong H, Molina JG, Bunge R, Bruckner BA, Xia Y, **Johnston RA**, Loebe M, Zeng D, Seethamraju H, Belardinelli L and Blackburn MR (2013) ADORA2B and hyaluronan modulate pulmonary hypertension secondary to COPD. *Am J Respir Crit Care Med*, **187:**A1732.

46. **Johnston RA**, Iozzo RV, Ludwig MS, Alexander AL, Cockerill KJ, Dahm PH and Haque IU (2013) Decorin contributes to ozone-induced airway hyperresponsiveness and airway inflammation. *Am J Respir Crit Care Med*, **187:**A2469.

47. Elkhidir HS, Alexander AL, Cockerill KJ, Haque IU and **Johnston RA** (2013) Plasminogen activator inhibitor-1 deficiency has no effect on acute-ozone induced airway hyperresponsiveness or airway inflammation in mice. *Am J Respir Crit Care Med*, **187:**A6092.

48. Razvi SS, Cockerill KJ, Alexander AL, Price RE, Cromar KR, Malik F, Dahm PH, Haque IU, Lazar MA and **Johnston RA** (2014). No effect of resistin deficiency on airway responses to acute ozone exposure. *Am J Respir Crit Care Med*, **189:**A3133.

49. Malik F, Richards JB, Cromar KR, Price RE, Atkins CL, Spencer CY, Haque IU and **Johnston RA** (2015). No effect of C-C chemokine receptor-like 2 deficiency on ozone-induced airway hyperresponsiveness in mice. *Am J Respir Crit Care Med*, **191:**A3218.

50. Jackson WT, Richards JB, Cromar KR, Price RE, Atkins CL, Malik F, Spencer, CY, Takahashi M, Takahashi Y, Haque IU and **Johnston RA** (2015). Chemerin deficiency enhances ozone-induced increases in airway responsiveness to methacholine. *Am J Respir Crit Care Med*, **191:**A3230.

51. Spencer CY, Atkins CL, Haque IU and **Johnston RA** (2015). Nicotinamide phosphoribosyltransferase stimulates cytokine release from alveolar macrophages. *Am J Respir Crit Care Med*, **191:**A4291.

52. Malik F, Spencer CY, Richards JB, Cromar KR, Price RE, Atkins CL, Lazar MA, Haque IU and **Johnston RA** (2015). Resistin deficiency exacerbates allergen-induced pulmonary inflammation in mice. *Am J Respir Crit Care Med*, **191:**A5174.

53. **Johnston RA**, Richards JB, Mitchell NC, Atkins CL and Haque IU (2016) Interleukin-11 receptor, alpha chain 1 contributes to the development of ozone-induced airway hyperresponsiveness in mice. *Am J Respir Crit Care Med*, **193:**A1181.

54. **Johnston RA**, Richards JB, Jackson WT, Mitchell NC, Bell CS, Atkins CL, Siddiqui SR and Haque IU (2017) Effect of chemokine-like receptor 1 on airway hyperresponsiveness and pulmonary inflammation induced by acute exposure to ozone. *Am J Respir Crit Care Med*, **195:**A2548.

55. **Johnston RA**, Sinal CJ, Rourke JL, Atkins CL, Siddiqui SR, Jackson WT, Husainat NM and Haque IU (2018) G protein-coupled receptor 1 deficiency exacerbates ozone-induced lung injury and lung inflammation. *Am J Respir Crit Care Med*, **197:**A7565.

56. **Johnston RA**, Atkins CL, Spencer CY and Haque IU (2019) Deficiency of interleukin-11 receptor, alpha chain 1 has no effect on ozone-induced lung injury and lung inflammation. *Am J Respir Crit Care Med*, **199:**A1825.

57. **Johnston RA**, Brown PL and Abdelfattah MB (2020) Effect of β-arrestin 1 deficiency on lung injury and lung inflammation in a mouse model of allergic occupational asthma. *Am J Respir Crit Care Med*, **201:**A5616.

58. **Johnston R**, Pilkington A IV, Battelli L, Kashon M and Reynolds J (2021) Genetic deficiency of β-arrestin-1 has no effect on airway hyperresponsiveness or lung histopathology in a mouse model of allergic occupational asthma. *J Allergy Clin Immunol*, **147(S):**AB142.

59. Thompson JA, Krajnak K, **Johnston RA**, Kashon M, McKinney W and Fedan JS (2021) High-fat Western diet alters arterial blood flow and exacerbates silica-induced lung inflammation in the F344 rat. *The Toxicologist*, Supplement to *Toxicological Sciences* **180(S1):**2838.

60. **Johnston RA**, Pilkington AW IV, Kashon ML and Reynolds JS (2021) β-arrestin-1 deficiency reduces airway responsiveness to methacholine in a mouse model of irritant-induced occupational asthma. *Am J Respir Crit Care Med* **203:**A4508.

61. Thompson J, Krajnak K, **Johnston R**, Kashon M, McKinney W and Fedan J (2021) Inhaled crystalline silica reduces systemic inflammation induced by a Western diet in the F344 rat. *FASEB J* **35(S1):**4033.

62. Pilkington A IV, Takahashi M, Takahashi Y and **Johnston R** (2022) Effect of chemerin deficiency on ozone-induced lung injury and lung inflammation. *J Allergy Clin Immunol*, **149(S):**AB259.

63. **Johnston RA**, Takahashi M, Takahashi Y and Pilkington AW IV (2022) Impact of diet-induced obesity and chemerin deficiency on ozone-induced lung Injury and lung inflammation. *Am J Respir Crit Care Med*, **205:**A3285.

64. Tran TT, Davies J, **Johnston RA**, Karmouty-Quintana H and Alcorn JL (2022) Effects of vitamin D administration in a murine neonatal model of acute hyperoxic lung injury. *Am J Respir Crit Care Med*, **205:**A5320.

65. Pilkington A IV, Takahashi M, Takahashi Y, Boots T and **Johnston R** (2023) Chemerin deficiency exacerbates ozone-induced increases in airway responsiveness. *J Allergy Clin Immunol*, **151(S):**AB68.

66. **Johnston RA**, Sinal CJ and Pilkington AW IV (2023) Impact of diet-induced obesity and G protein-coupled receptor 1 deficiency on ozone-induced lung injury and lung inflammation. *In press*, *Am J Respir Crit Care Med*.

B. Refereed Original Articles in Journals

1. Fedan JS, Millecchia LL, **Johnston RA**, Rengasamy A, Hubbs A, Dey RD, Yuan L-X, Watson D, Goldsmith WT, Reynolds JS, Orsini L, Dortch-Carnes J, Cutler D and Frazer DG (2000) Effect of ozone-treatment on airway reactivity and epithelium-derived relaxing factor in guinea pigs. *J Pharmacol Exp Ther* **293:**724-734.

2. Shore SA, **Johnston RA**, Schwartzman IN, Chism D and Krishna Murthy GG (2002) Ozone-induced airway hyperresponsiveness is reduced in immature mice. *J Appl Physiol* **92:**1019-1028.

3. Shore SA, Rivera-Sanchez YM, Schwartzman IN and **Johnston RA** (2003) Responses to ozone are increased in obese mice. *J Appl Physiol* **95:**938-945.

4. Fedan JS, Dowdy JA, **Johnston RA** and Van Scott MR (2004) Hyperosmolar solution effects in guinea-pig airways. I. Mechanical responses to relative changes in osmolarity. *J Pharmacol Exp Ther* **308:**10-18.

5. Wu DX-Y, **Johnston RA**, Rengasamy A, Van Scott MR and Fedan JS (2004) Hyperosmolar solution effects in guinea-pig airways. II. Epithelial bioelectric responses to relative changes in osmolarity. *J Pharmacol Exp Ther* **308:**19-29.

6. Fedan JS, Dowdy JA, Van Scott MR, Wu DX-Y and **Johnston RA** (2004) Hyperosmolar solution effects in guinea-pig airways. III. Studies on the identity of epithelium-derived relaxing factor in isolated, perfused trachea using pharmacological agents. *J Pharmacol Exp Ther* **308:**30-36.

7. **Johnston RA**, Van Scott MR, Kommineni C, Millecchia LL, Dortch-Carnes J and Fedan JS (2004) Hyperosmolar solution effects in guinea-pig airways. IV. Lipopolysaccharide-induced alterations in airway reactivity and epithelial bioelectric responses to methacholine and hyperosmolarity. *J Pharmacol Exp Ther* **308:**37-46.

8. Rivera-Sanchez YM, **Johnston RA**, Schwartzman IN, Valone J, Silverman ES, Fredberg JJ and Shore SA (2004) Differential effects of ozone on airway and tissue mechanics in obese mice. *J Appl Physiol* **96:**2200-2206.

9. **Johnston RA**, Mizgerd JP and Shore SA (2005) CXCR2 is essential for maximal neutrophil recruitment and methacholine responsiveness after ozone exposure. *Am J Physiol Lung Cell Mol Physiol* **288:**L61-L67.

10. **Johnston RA**, Schwartzman IN, Flynt L and Shore SA (2005) Role of interleukin-6 in murine airway responses to ozone. *Am J Physiol Lung Cell Mol Physiol* **288:**L390-L397.

11. Shore SA, Schwartzman IN, Mellema MS, Flynt L, Imrich A and **Johnston RA** (2005) Effect of leptin on allergic airway responses in mice. *J Allergy Clin Immunol* **115:**103-109.

12. **Johnston RA**, Theman TA and Shore SA (2006) Augmented responses to ozone in obese carboxypeptidase E-deficient mice. *Am J Physiol Regul Integr Comp Physiol* **290:**R126-R133.

13. Lu FL, **Johnston RA**, Flynt L, Theman TA, Terry RD, Schwartzman IN, Lee A and Shore SA (2006) Increased pulmonary responses to acute ozone exposure in obese *db*/*db* mice. *Am J Physiol Lung Cell Mol Physiol* **290:**L856-L865.

14. **Johnston RA**, Theman TA, Terry RD, Williams ES and Shore SA (2007) Pulmonary responses to acute ozone exposure in fasted mice: Effect of leptin administration. *J Appl Physiol* **102:**149-156.

15. **Johnston RA**, Mizgerd JP, Flynt L, Williams ES and Shore SA (2007) Type I interleukin-1 receptor is required for pulmonary responses to subacute ozone exposure in mice. *Am J Respir Cell Mol Biol* **37:**477-484.

16. **Johnston RA**, Zhu M, Rivera-Sanchez YM, Lu FL, Theman TA, Flynt L and Shore SA (2007) Allergic airway responses in obese mice. *Am J Respir Crit Care Med* **176:**650-658.

17. Pichavant M, Goya S, Meyer EH, **Johnston RA**, Kim HY, Matangkasombut P, Zhu M, Iwakura Y, Savage PB, DeKruyff RH, Shore SA and Umetsu DT (2008) Ozone exposure in a mouse model induces airway hyperreactivity that requires the presence of natural killer T cells and IL-17. *J Exp Med* **205:**385-393.

18. **Johnston RA**, Theman TA, Lu FL, Terry RD, Williams ES and Shore SA (2008) Diet-induced obesity causes innate airway hyperresponsiveness to methacholine and enhances ozone-induced pulmonary inflammation. *J Appl Physiol* **104:**1727-1735.

19. Shore SA, Lang JE, Kasahara DI, Lu FL, Verbout NG, Si H, Williams ES, Terry RD, Lee A and **Johnston RA** (2009) Pulmonary responses to subacute ozone exposure in lean versus obese mice. *J Appl Physiol* **107:**1445-1452.

20. Zhu M, Hug C, Kasahara DI, **Johnston RA**, Williams AS, Verbout NG, Si H, Jastrab J, Srivastava A, Williams ES, Ranscht B and Shore SA (2010) Impact of adiponectin deficiency on pulmonary responses to acute ozone exposure in mice. *Am J Respir Cell Mol Biol* **43:**487-497.

21. **Johnston RA**, Zhu M, Hernandez CB, Williams ES and Shore SA (2010) Onset of obesity in carboxypeptidase E-deficient mice and effect on airway responsiveness and pulmonary responses to ozone. *J Appl Physiol* **108:**1812-1819.

22. Karmouty-Quintana H, Zhong H, Acero L, Weng T, Melicoff E, West JD, Hemnes A, Grenz A, Eltzschig HK, Blackwell TS, Xia Y, **Johnston RA**, Zeng D, Belardinelli L, and Blackburn MR (2012) The A_{2B} adenosine receptor modulates pulmonary hypertension associated with interstitial lung disease. *FASEB J* **26:**2546-2557.

23. Barreno RX, Richards JB, Schneider DJ, Cromar KR, Nadas AJ, Hernandez CB, Hallberg LM, Price RE, Hashmi SS, Blackburn MR, Haque IU and **Johnston RA** (2013). Endogenous osteopontin promotes ozone-induced neutrophil recruitment to the lungs and airway hyperresponsiveness to methacholine. *Am J Physiol Lung Cell Mol Physiol* **305:**L118-L129.

24. Karmouty-Quintana H, Weng T, Garcia-Morales LJ, Chen N-Y, Pedroza M, Zhong H, Molina JG, Bunge R, Bruckner BA, Xia Y, **Johnston RA**, Loebe M, Zeng D, Seethamraju H, Luiz Belardinelli L and Blackburn MR (2013). ADORA2B and hyaluronan modulate pulmonary hypertension secondary to chronic obstructive pulmonary disease. *Am J Respir Cell Mol Biol* **49:**1038-1047.

25. Dahm PH, Richards JB, Karmouty-Quintana H, Cromar KR, Sur S, Price RE, Malik F, Spencer CY, Barreno RX, Hashmi SS, Blackburn MR, Haque IU and **Johnston RA** (2014). Effect of antigen sensitization and challenge on oscillatory mechanics of the lung and pulmonary inflammation in obese carboxypeptidase E-deficient mice. *Am J Physiol Regul Integr Comp Physiol* **307:**R621-R633.

26. Karmouty-Quintana H, Philip K, Acero LF, Chen NY, Weng T, Molina JG, Luo F, Davies J, Le NB, Bunge I, Volcik KA, Le TT, **Johnston RA**, Xia Y, Eltzschig HK and Blackburn MR (2015) Deletion of ADORA2B from myeloid cells dampens lung fibrosis and pulmonary hypertension. *FASEB J*, **29:**50-60.

27. Razvi SS, Richards JB, Malik F, Cromar KR, Price RE, Bell CS, Weng T, Atkins CL, Spencer CY, Cockerill KJ, Alexander AL, Blackburn MR, Alcorn JL, Haque IU and **Johnston RA** (2015) Resistin deficiency in mice has no effect on pulmonary responses induced by acute ozone exposure. *Am J Physiol Lung Cell Mol Physiol* **309:**L1174-L1185.

28. Elkhidir HS, Richards JB, Cromar KR, Bell CS, Price RE, Atkins CL, Spencer CY, Malik F, Alexander AL, Cockerill KJ, Haque IU and **Johnston RA** (2016) Plasminogen activator inhibitor-1 does not contribute to the pulmonary pathology induced by acute exposure to ozone. *Physiol Rep* **4:**e12983.

29. Malik F, Cromar KR, Atkins CL, Price RE, Jackson WT, Siddiqui SR, Spencer CY, Mitchell NC, Haque IU and **Johnston RA** (2017) Chemokine (C-C motif) receptor-like 2 is not essential for lung injury, lung inflammation, or airway hyperresponsiveness induced by acute exposure to ozone. *Physiol Rep* **5:** e13545.

30. Causey J, Gonzales T, Yadav A, Hashmi S, De Jesus-Rojas W, Jon C, Haque I, **Johnston R**, Stark J, McBeth K, Colasurdo G and Mosquera R (2018) Characteristics and outcomes of children with clinical history of atopic versus non-atopic asthma admitted to a tertiary pediatric intensive care unit. *Open Respir Med J* **12:**21-28.

31. Headley L, Bi W, Wilson C, Collum SD, Chavez M, Darwiche T, Mertens TCJ, Hernandez AM, Siddiqui SR, Rosenbaum S, **Johnston RA** and Karmouty-Quintana H (2018) Low-dose administration of bleomycin leads to early alterations in lung mechanics. *Exp Physiol* **103:**1692-1703.

32. Thompson JA, Krajnak K, **Johnston RA**, Kashon ML, McKinney W and Fedan JS (2021) High-fat Western diet-consumption alters crystalline silica-induced serum adipokines, inflammatory cytokines and arterial blood flow in the F344 rat. *Toxicol Rep* **9:**12-21.

33. Thompson JA, **Johnston RA**, Price RE, Hubbs AF, Kashon ML, McKinney W and Fedan JS (2022) High-fat Western diet consumption exacerbates silica-induced pulmonary inflammation and fibrosis. *Toxicol Rep* **9:**1045-1053.

34. **Johnston RA**, Atkins CL, Siddiqui SR, Jackson WT, Mitchell NC, Spencer CY, Pilkington AW IV, Kashon ML and Haque IU (2022) Interleukin-11 receptor subunit alpha-1 is required for maximal airway responsiveness to methacholine following acute exposure to ozone. *Am J Physiol Regul Integr Comp Physiol* **323:**R921-R934.

C. Invited Articles (Reviews) in Journals

1. Fedan JS, Van Scott MR and **Johnston RA** (2001) Pharmacological techniques for the in vitro study of airways. *J Pharmacol Toxicol Meth* **45:**159-174.

2. Shore SA and **Johnston RA** (2006) Obesity and asthma. *Pharmacol Ther* **110:**83-102.

3. Moore BB, Ballinger MN, Bauer NN, Blackwell TS, Borok Z, Budinger GRS, Camoretti-Mercado B, Erzurum SC, Himes BE, Keshamouni VG, Kulkarni HS, Mallampalli RK, Mariani TJ, Martinez FJ, McCombs JE, Newcomb DC, **Johnston RA**, O'Reilly MA, Prakash YS, Ridge KM, Sime PJ, Sperling AI, Violette S, Wilkes DS, Königshoff M (2023) Building career paths for Ph.D., basic and translational scientists in clinical departments in the U.S.: A Workshop Report from the American Thoracic Society. *In press*, *Ann Am Thorac Soc*.

D. Editorials

1. **Johnston RA** and Belenky P (2020) Filling a hole in ozone research: The impacts of early life microbiome alterations on pulmonary responses to a non-atopic asthma trigger. *Physiol Rep* **8:**e14346.

E. Chapters

1. **Johnston RA** and Shore SA (2019) Obesity and asthma: What have we learned from animal models?, in *Mechanisms and Manifestations of Obesity in Lung Disease* (Johnston RA and Suratt BT eds) pp 111-142, Academic Press/Elsevier Inc., London.

F. Books

1. **Johnston RA** and Suratt BT eds (2019) *Mechanisms and Manifestations of Obesity in Lung Disease*. Academic Press/Elsevier Inc., London.

G. Other Professional Communications

1. Presentations

Local

September 13, 2006	**Speaker**, "Impact of Obesity on Lung Disease", Division of Allergy, Pulmonary, Immunology, Critical Care, and Sleep Grand Rounds, Department of Internal Medicine, School of Medicine, The University of Texas Medical Branch at Galveston, Galveston, TX
January 19, 2007	**Speaker**, "Obesity and Asthma", Department of Pharmacology and Toxicology, School of Medicine, The University of Texas Medical Branch at Galveston, Galveston, TX
April 12, 2010	**Speaker**, "Obesity and Asthma", Department of Integrative Biology and Pharmacology, McGovern Medical School at The University of Texas Health Science Center at Houston, Houston, TX
August 12, 2010	**Speaker**, "Obesity and Asthma: Insights from Animal Studies", Division of Critical Care Medicine, Department of Pediatrics, McGovern Medical School at The University of Texas Health Science Center at Houston, Houston, TX
January 28, 2011	**Speaker**, "Obesity and Asthma", Department of Pathology and Laboratory Medicine, McGovern Medical School at The University of Texas Health Science Center at Houston, Houston, TX
March 22, 2011	**Speaker**, "Obesity and Asthma: Insights from Animal Studies", Research Conference, Department of Pediatrics, McGovern Medical School at The University of Texas Health Science Center at Houston, Houston, TX
April 18, 2013	**Chair**, "Collaborative Workshop: Genetic and Molecular Mechanisms of Obesity-Related Sequelae", McGovern Medical School at The University of Texas Health Science Center at Houston, Houston, TX
October 4, 2016	**Speaker**, "Obesity and Asthma: What Can We Learn from Animal Models?", Section of Pediatric Pulmonology Research Meeting, Section of Pediatric Pulmonology, Department of Pediatrics, Baylor College of Medicine, Houston, TX
October 11, 2017	**Speaker**, "Protective Role of Chemerin in Ozone-Induced Lung Dysfunction", Pathology and Physiology Research Branch Seminar, The Health Effects Laboratory Division, National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention, United States Department of Health and Human Services, Morgantown, WV
October 17, 2017	**Speaker**, "Obesity and Asthma: What Can We Learn from Animal Models?", Pharmaceutical and Pharmacological Sciences Graduate Program Graduate Student Seminar, Department of Pharmaceutical Sciences, School of Pharmacy, West Virginia University, Morgantown, WV

December 5, 2017 — **Speaker**, "Obesity and Asthma: What Can We Learn from Animal Models?", Research Conference, Section of Pulmonary, Critical Care, and Sleep Medicine, Department of Medicine, School of Medicine, West Virginia University, Morgantown, WV

February 1, 2019 — **Speaker**, "Obesity and Asthma", Grand Rounds, Department of Medicine, School of Medicine, West Virginia University, Morgantown, WV

National

May 22, 2002 — **Speaker**, "Ozone (O_3)-induced airway hyperreactivity and inflammation in leptin-deficient and leptin receptor-deficient mice" at the "Mouse Models of Asthma" Mini-Symposium, American Thoracic Society 98th International Conference, Atlanta, GA

April 9, 2003 — **Speaker**, "Mechanisms of age-dependent ozone-induced airway dysfunction" at the "Human Health Symposium – A STAR Progress Review Workshop", United States Environmental Protection Agency, Washington, D.C.

May 26, 2004 — **Speaker**, "Effect of leptin on allergic airway responses in mice" at the "Animal Models of Asthma" Mini-Symposium, American Thoracic Society 100th International Conference, Orlando, FL

May 23, 2006 — **Speaker**, "Airway responses to ozone during the development of obesity" at the "Inhaling Your Food: Nutrition, Obesity and Airways Disease" Mini-Symposium, American Thoracic Society International Conference, San Diego, CA

May 23, 2007 — **Speaker**, "Diet-induced obesity causes airway hyperresponsiveness and increases pulmonary inflammation induced by ozone" at the "Your Lungs Are What You Eat" Mini-Symposium, American Thoracic Society International Conference, San Francisco, CA

February 18, 2009 — **Speaker**, "Obesity and Asthma: Epidemiology, Potential Mechanisms, and Therapeutic Strategies", Department of Pediatrics Grand Rounds, School of Medicine, West Virginia University, Morgantown, WV

February 18, 2009 — **Speaker**, "Obesity and Asthma: The Role of Chronic Systemic Inflammation", Department of Pediatrics Research Conference, School of Medicine, West Virginia University, Morgantown, WV

January 12, 2011 — **Speaker**, "Obesity and Asthma: A Tale of Adipokines?", Pathology and Physiology Research Branch, The Health Effects Laboratory Division, National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention, United States Department of Health and Human Services, Morgantown, WV

May 16, 2011 — **Facilitator**, Thematic Poster Session, "Pathophysiological Consequences of Obesity", American Thoracic Society International Conference, Denver, CO

May 17, 2011 — **Panelist**, "Now You've Got an Academic Job – What's Next?", Center for Fellows and Junior Professionals, American Thoracic Society International Conference, Denver, CO

May 18, 2011 — **Speaker**, "Obesity and Asthma: Epidemiology, Potential Mechanisms, and Therapeutic Strategies", Sunrise Seminar, American Thoracic Society International Conference, Denver, CO

May 20, 2012 — **Co-Chair**, Poster Discussion Session, "Airways Hyperresponsiveness: Causes and Treatments", American Thoracic Society International Conference, San Francisco, CA

May 21, 2012	**Co-Chair**, Workshop, "Career Development Workshop: Grantsmanship Skills for Basic Science and Translational Researchers: What Happens During Grant Review?", American Thoracic Society International Conference, San Francisco, CA
May 21, 2012	**Co-Chair**, Scientific Symposium, "Career Development Symposium: The Evolution of Academic Medicine", American Thoracic Society International Conference, San Francisco, CA
May 22, 2012	**Speaker**, "Obesity and Asthma: What Can We Learn from Animal Models?", Sunrise Seminar, American Thoracic Society International Conference, San Francisco, CA
May 20, 2013	**Co-Chair**, Scientific Symposium, "Career Development Symposium: Achieving Success in Academic Medicine During Uncertain Times", American Thoracic Society International Conference, Philadelphia, PA
May 19, 2013	**Panelist**, "Life After Post-Doctoral Training", Center for Career Development, American Thoracic Society International Conference, Philadelphia, PA
May 19, 2014	**Discussion Facilitator**, Thematic Poster Session, "Effects of Obesity on Lung Function", American Thoracic Society International Conference, San Diego, CA
May 16, 2015	**Co-Chair**, Postgraduate Course 29, "Key Skills for a Successful Career in Academic Medicine", American Thoracic Society International Conference, Denver, CO
December 5, 2016	**Speaker**, "Obesity and Asthma: What Can We Learn from Animal Models?", Pathology and Physiology Research Branch Seminar, The Health Effects Laboratory Division, National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention, United States Department of Health and Human Services, Morgantown, WV
May 21, 2017	**Facilitator**, Thematic Poster Session, "Changes in the Lung Due to Dietary and Environmental Exposures", American Thoracic Society International Conference, Washington, D.C.
May 24, 2017	**Co-Chair**, Poster Discussion Session, "Obesity and Nutrients in Lung Disease", American Thoracic Society International Conference, Washington, D.C.
May 17, 2019	**Group Leader**, Break-Out Session, "Creating and Revising a Strong CV", Fellow-to-Faculty Boot Camp, American Thoracic Society International Conference, Dallas, TX
May 19, 2019	**Panelist**, "How to Come Up with a Novel Research Idea?", Center for Career Development, American Thoracic Society International Conference, Dallas, TX
August 3, 2020	**Facilitator**, "Finding Mentors and Networking at ATS", American Thoracic Society Ph.D. and Basic and Translational Scientists Working Group Virtual Reception
March 30, 2021	**Speaker**, "Chemerin, Chemerin Receptors, and Ozone-Induced Lung Pathophysiology", Vermont Lung Center, Larner College of Medicine, The University of Vermont, Burlington, VT

Curriculum Vitae

Eric E. Kelley, Ph.D.

November 2nd, 2020

PERSONAL

Mailing Address: Department of Physiology and Pharmacology
University of West Virginia
School of Medicine
3072B Health Sciences Center North
PO Box 9229
Morgantown, WV 26506-9229
Phone: (304) 293-6064
email: eric.kelley@hsc.wvu.edu



Date of Birth: May 29, 1967

Birthplace: Danville, Illinois

Home Address: 274 Glade Run Rd
Carmichaels, PA 15320
Phone: (205) 914-1786

EDUCATION

B.S.	University of Iowa, 1991, Microbiology
M.S.	University of Iowa, 1999, Radiation Biology
Ph.D.	University of Iowa, 2002, Free Radical and Radiation Biology

Dissertation Title: Induction of Endogenous Nitric Oxide Production Sensitizes Human Breast Cancer Cells to Photofrin® Photosensitization.

POSITIONS

2019-present Associate Chair Research, Department of Physiology and Pharmacology, West Virginia University (WVU) Health Sciences Center.

2016-present Associate Professor, Department of Physiology and Pharmacology, West Virginia University (WVU) Health Sciences Center.

2010-2016 Research Assistant Professor, Department of Anesthesiology, University of Pittsburgh.

2010-2016 Director, Free Radical and Reactive Oxygen Species Core Facility, Vascular Medicine Institute (VMI), University of Pittsburgh.

2006-2010 Instructor, Department of Anesthesiology, University of Pittsburgh.

2002-2006 Postdoctoral Fellow, Center for Free Radical Biology, University of Alabama at Birmingham.

1999-2002 Graduate Student, Department of Radiation Oncology, University of Iowa.

1991-2000 Research Assistant, Department of Internal Medicine, Division of Hematology Oncology, University of Iowa.

1990-1991 Research Technician, Department of Pathology, Anti-Infective Research Center, University of Iowa.

PROFESSIONAL MEMBERSHIPS/ACTIVITIES

American Heart Association, Member (2005-present)

American Diabetes Association, Member (2013-present)

Nitric Oxide Society, Member (2012-present)

Society for Redox Biology and Medicine, Member (1995-present)

Society for Redox Biology and Medicine, Young Investigator Award Chair (2007-2008)

Society for Redox Biology and Medicine, Internal Marketing Committee (2009-2010)

Society for Redox Biology and Medicine, Council Member (2010-present)

Society for Redox Biology and Medicine, Vice President (2013-2018)

University of Pittsburgh, Vascular Medicine Institute (2010-2016)

University of Pittsburgh Center for Vascular Regeneration and Remodeling (2007-2016)

West Virginia University, *In Vivo* Multifunctional Magnetic Resonance Center (2016-present)

West Virginia University, *Mitochondria, Metabolism, and Bioenergetics Working Group* (2016-present)

West Virginia University, Inhalation Toxicology Center (iTOX) (2018-present)

West Virginia University, Stroke Center (2017-present)

PROFESSIONAL HONORS

1997 *American Society for Photobiology*, Travel Award

1998 *Society for Redox Biology and Medicine*, Young Investigator Award

1998 *American Society for Photobiology*, Travel Award

1999 *American Association for Cancer Research*, Edward J. Smuckler Memorial Pathophysiology of Cancer Award

1999 *American Society for Photobiology*, Travel Award

2000 *Society for Redox Biology and Medicine*, Young Investigator Award

2002 Awarded NIH Fellowship Grant (5T32GM063490-03, 2002-2004)

2005 UAB Postdoctoral Research Oral Presentation Award

2010 Elected, Governing Council of the *Society for Redox Biology and Medicine*

2012	Elected, Vice President, *Society for Redox Biology and Medicine*
2016	Appointed, Science Policy Officer, *Society for Redox Biology and Medicine*
2017	Appointed, FASEB Board of Directors
2018	Elected, FASEB Executive Committee for Board of Directors
2019	Nominated, FASEB President election (*declined to run due to other professional commitments: lab, grant applications and graduate student's needs*)

SERVICE

Student Representative to Faculty Board, Free Radical and Radiation Biology Graduate Program, Department of Radiation Oncology, University of Iowa, 2002

Postdoctoral Association Executive Board, University of Alabama at Birmingham, 2005

Member, American Heart Association Peer Review Committee, Vas Wall Biol, 2011-present

Council Member, *Society for Redox Biology and Medicine,* 2010-2012

Vice President, *Society for Redox Biology and Medicine,* 2012-2016

American Diabetes Association, Peer Review Study Section, 2015-present

Lobbyist (U.S. Congress), *FASEB*, 2017-present

Lead Lobbyist (U.S. Congress), *Society for Redox Biology and Medicine,* 2015-present

Science Policy Officer, *Society for Redox Biology and Medicine,* 2016-present

Member, FASEB Board of Directors, 2017-present

Member, FASEB Science Policy Committee, 2017-present

Member, West Virginia University, Non-Human Use of Radiation Committee, 2017-present

Member, West Virginia University, Institutional Animal Care and Use Committee, 2018-present

Member, West Virginia University, Department of Physiology and Pharmacology Teaching Faculty Search Committee, 2018

Member, West Virginia University, Inhalation Toxicology Center Steering Committee, 2019-present

Member, West Virginia University, School of Medicine, Department of Graduate Education Committee for Academic and Professional Standards (CAPS), 2019-present

Co-Chair, West Virginia University, Department of Physiology and Pharmacology Seminar Committee, 2019-present

Member, West Virginia University, Department of Physiology and Pharmacology Promotion and Tenure Committee, 2019-present

Member, West Virginia University, Department of Physiology and Pharmacology Graduate Advisory Committee, 2019-present

Chair, West Virginia University, Department of Physiology and Pharmacology Equipment and Space Committee, 2019-present

Chair, West Virginia University, Department of Physiology and Pharmacology Research Faculty Search Committee, 2019-present

Member, West Virginia University, Department of Exercise Physiology Faculty Search Committee, 2019-present

Member, FASEB Board of Directors Executive Committee, 2019-2020

Member, West Virginia University, Office of Graduate Studies First Year Curriculum Committee, 2019-present

Member, FASEB Training and Career Opportunities Committee, 2019-present

Member, West Virginia University, School of Medicine, Department of Graduate Education Committee for Academic and Professional Standards (CAPS), 2020-present

Co-Chair, FASEB Emerging Issues and Revenue Opportunities Committee, 2020-present

EDITORIAL ACTIVITIES



Editor-in-Chief

Advances in Redox Research (Elsevier)

Official journal of the *Society for Redox Biology and Medicine* (*SfRBM*) and the *Society for Free Radical Research Europe* (*SfRRE*)

Editorial Board

American Journal of Physiology: Lung Cellular and Molecular Physiology (2015-2018)

Oxidative Medicine and Cellular Longevity (2017-2020)

Nature, Scientific Reports (2018-present)

Antioxidants (2019-present)

Redox Biology (2020-present)

Free Radical Biology and Medicine (Nov, 2020)

Nitric Oxide (Nov, 2020)

Archives Biochemistry and Biophysics (Nov, 2020)

Mitochondrion (MITOCH) (Nov, 2020)

Mechanisms of Aging and Development (Nov, 2020)

Ad Hoc Reviewer:

American Journal of Physiology-Cell Physiology / Antioxidants / American Journal of Physiology: Regulatory, Integrative and Comparative Physiology / American Journal of Physiology: Heart and Circulatory Physiology / American Journal of Respiratory Medicine / Anaerobe / Antioxidants and Redox Signaling / Bioorganic and Medicinal Chemistry / Biochemistry / Biochemistry (Poland) / Cancer Research / Cell Calcium / Chemical Research in Toxicology / Clinical Interventions in Aging / Comparative Biochemistry and Physiology / Diabetes / Experimental Biology / ESC Heart Failure / Expert Opinion on Therapeutic Patents / Free Radical Biology and Medicine / Hypertension / International Journal of Biomedical Sciences / International Journal of Biological

Macromolecules / International Journal of Nanomedicine / Journal of Assisted Reproduction and Genetics / Journal of the Association of Arab Universities for Basic and Applied Sciences / Journal of Biological Chemistry / Journal of Clinical Rheumatology / Journal of Experimental and Clinical Cancer Research / Journal of Molecular Pathophysiology / Journal of Pharmaceutical and Biomedical Analysis / Journal of Physiobiochemical Metabolism / Journal of Toxicology / Medicinal Chemistry Letters / Microvascular Research / Nature / Nitric Oxide / Nutrients / Placenta / Public Library of Science: Biology / Redox Report / Scientific Reports / Therapeutics and Clinical Risk Management.

KEY RESEARCH ACCOMPLISHMENTS

- Defined photodynamic therapy-induced free radical formation in cancer cell membranes. Peroxidation of membrane lipids is a seminal oxidative event in the cytotoxic mechanism of singlet oxygen-generating photosensitizers (***Cancer Res***, 53:6263-6269, 1993).
- Devised innovative techniques for determining the capacity of nitric oxide ($^{\bullet}$NO) to inhibit membrane lipid peroxidation. Electron paramagnetic resonance spectroscopy revealed $^{\bullet}$NO inhibits iron-induced lipid peroxidation in a manner similar to tocopherol (Vit. E) (***Arch Biochem Biophys***, 370:97-104, 1999).
- Described $^{\bullet}$NO as an adjuvant to photodynamic therapy of cancer cells. Increasing levels of $^{\bullet}$NO in breast cancer cells via adenoviral transduction with inducible nitric oxide synthase significantly enhances the efficacy of photodynamic therapy (***Nitric Oxide***, 10:119-129, 2004).
- Discovered novel inhibition properties of immobilized xanthine oxidase (XO). Glycosaminoglycan (GAG)-bound XO is significantly resistant to inhibition by allo/oxypurinol compared to XO in solution. These results are critical to the development of treatment strategies for a variety of oxidant-induced vascular inflammatory processes where XO, a critical source of reactive species, is released into the circulation and binds avidly to endothelial GAGs (***J Biol Chem***, 279:37231-37234, 2004).
- Identified adenosine receptors as mediators of XO regulation. Hypoxia-induced increases in endothelial cell XO protein and activity is mediated by stimulation of adenosine receptor A_{2B} (***Free Radic Biol Med****,* 40:952-959, 2006).
- Described nitrated fatty acids as potent inhibitors of XO. Nitrated oleic acid inhibits both purified and endothelial-bound XO with EC_{50} values more than 6-fold lower than the XO inhibitor allopurinol (***J Biol Chem****,* 283:36176-84, 2008).
- Discovered the major (95%) reactive specie generated by endothelial GAG-bound XO under hypoxia is H_2O_2 suggesting focus should shift to H_2O_2 when considering contributory roles of XO in vascular inflammation (***Free Radic Biol Med****,* 48(4):493-8, 2010).
- Using EPR spin trapping techniques, revealed febuxostat (Uloric®) as a superior inhibitor (1000-fold) of endothelial cell-bound XO compared to allo/oxypurinol and thus identified a potent new tool for defining contributory roles of XO in disease (***Free Radic Biol Med****,* 51(1):179-84, 2011).
- Using immuno-spin trapping techniques, revealed anatomic sites of biomolecular free radical formation in insulin-sensitive tissues in a model of diet-induced obesity (***Free Radic Biol Med***, 52:2312–2319, 2012).
- Generated the first murine tissue-specific XOR (*Xdh*) knockout. This is a novel and important tool as global homozygous knockouts die before 4 weeks of age while global heterozygotes do not lactate properly and thus are of limited use. This model was used to determine that elevated circulating uric acid, while indicative of the metabolic abnormalities of obesity, is not causative (***Diabetes***, 68(6):1221-1229, 2019).

TEACHING:

Courses:

Instructor:	Radiation Biology, Dept. of Radiation Oncology, Univ. of Pittsburgh, 2018-2016
Instructor:	Fundamentals in Bench Research, Univ. of Pittsburgh, Spring, 2011
Lecturer:	BMS 777: Fundamentals of Physiology, **WVU**, Fall 2017-present
Co-coordinator:	BMS 706: Cellular Methods, **WVU**, Fall 2017-2020
Facilitator:	Problem-Based Learning, **WVU**, Fall 2016-present
Co-coordinator:	BIOC 791B Free Radical Biomedicine, **WVU**, Spring, 2019-present

MENTORING: (**Bold** font indicates WVU activity)

Justin Weidner: Graduate Student, Department of Biochemistry, University of Alabama at Birmingham, Spring Semester, 2003. Project: purification of xanthine oxidase from fresh cream.

Sandra Georgescu: Undergraduate, University of Rochester, Summer, 2004 and 2005. Project: cell culture and response of endothelial cell XO activity to adenosine exposure.

Kamorris Johnson: Undergraduate, University of Alabama at Birmingham, 2004-present. Project: protein quantification and determination of XO activity by HPLC.

Jose M. Del Rio: Resident, University of Pittsburgh, Anesthesiology, 2007. Project: determination of hypoxia-mediated regulation of endothelial xanthine oxidase.

Mike Hezel: Graduate Student, University of Pittsburgh, Department of Pharmacology, 2007-present. Project: Grant writing for fellowship application.

Janine Bartholomew: Graduate Student, University of Pittsburgh, Department of Pharmacology, 2007-2008. Project: Grant writing for NRSA fellowship application (awarded 2008).

Alison L. Groeger: Graduate Student, University of Pittsburgh, Department of Pharmacology, 2007-2009. Project: General Mentoring.

Umair Z. Malik, B.S.: Medical Student, Aga Khan University Medical School, Pakistan, May-August 2009. Project: Febuxostat inhibition of endothelial cell-associated xanthine oxidoreductase.

Chenell Donadee, M.D., Fellow, Pulmonary Critical Care Medicine, October 2009-2010. Project: PRBC Storage Lesion-dependent ROS Formation.

Courtney Sullivan, Undergraduate, Neurobiology, University of Pittsburgh, Jan 2011-2012. Project: Identifying the extent of XO expression and activity in brains of mice subjected to a 20 week high fat diet compared to age-matched control mice on normal chow.

Nadiezhda Cantu-Medellin, M.S., University of Pittsburgh, February 2012-2016. Project: Determining the extent of and resultant outcomes of XO nitrite reductase activity by comparing XO inhibition versus dietary supplementation with NO_2^- in a high fat diet-induced model of type II diabetes.

Alex Flemming, Undergraduate, Microbiology, Davidson University, May 2011-August 2011. Project: Identifying contributions of XO to shear-stress induced ROS formation in endothelial cells.

Christoff Shoenborn, Undergraduate, Biology, Penn State, May 2012-August 2012. Project: Surgery assistant for murine heart catheterization experiments.

Scott Schoenborn, Undergraduate, Biology, University of Pittsburgh, May 2012-May 2013. Project: Describing XO inhibition characteristics for AO inhibitors to determine cross-over parameters.

Jordan Aikens, Undergraduate, Exercise Physiology, WVU, Eric Kelley was his thesis mentor, 2016-2018. Project: Establishing XO activity assay and DHE assay via HPLC electrochemical detection.

Jeremy Eckels, Undergraduate, Exercise Physiology, WVU, Eric Kelley was his thesis mentor, 2017-2020. Project: Establishing XO activity assay and DHE assay via HPLC electrochemical detection. Jeremy is currently (Spring 2020) in Medical School at Marshall University.

Makenzie Neuman, Ph.D. Student, Department of Physiology and Pharmacology (WVU), Eric Kelley was a Disertation Committee Member, 2019.

Heidi Schmidt, Ph.D. Student, University of Pittsburgh, Department of Pharmacology, Eric Kelley is her **Co-Mentor** with Dr. Adam Straub, May 2018-present. Project: Xanthine oxidase is a circulating hemeoxygenase in hemolytic diseases.

Janelle, Chua, Graduate Student, WVU (year 1), Eric Kelley was her Rotation Advisor, Fall 2018.

Courtney Staffle, Undergraduate, Exercise Physiology (WVU), Eric Kelley was her Research Advisor, 2018-2020. Courtney is applying for medical school and has produced 2 manuscripts (currently in final drafts (see manuscripts in preparation) one of which is first author.

Emily Minor, M.D./Ph.D. Student, Department of Biochemistry (WVU), Eric Kelley was a Thesis Committee Member, Spring 2019.

Adam Schroer, Ph.D. Student, Department of Physiology and Pharmacology (WVU), Eric Kelley was a Thesis Committee Member, 2019.

Xena Williams, B.S., Graduate Student, WVU, Department of Physiology and Pharmacology (WVU), 2019-present, Eric Kelley is her **Mentor**. Project: Establishing signaling induced between the lung and liver during inhalation of toxicants: role of XOR.

Andrew Giromini, B.S., Graduate Student, WVU, Department of Biochemistry (WVU), 2019-present, Eric Kelley is his **Mentor**. Project: Defining the metabolic consequences of XOR ablation in white adipose tissue.

Josh Gross, Ph.D. Student, Department of Physiology and Pharmacology (WVU), Eric Kelley was a Thesis Committee Member, Fall 2019.

Krista Garner, Graduate Student, Cell and Integrated Physiology (WVU), Eric Kelley is on her Thesis Committee.

Julie Griffith, Graduate Student, Cell and Integrated Physiology (WVU), Eric Kelley is on her Thesis Committee.

Nairrita Majumder, Graduate Student, Cell and Integrated Physiology (WVU), Eric Kelley is a Thesis Committee member.

Alison White, Graduate Student, Neuroscience (WVU), Eric Kelley is a Thesis Committee member.

Maxwell Griesgraber, Ph.D. Student, Department of Physiology and Pharmacology (WVU), Eric Kelley is Chair of his Thesis Committee Member, 2020.

Evan Devallance, Ph.D., Postdoctoral Scholar, April 2020-present, Eric Kelley is **Co-Mentor** with Dr. Tim Nurkiewicz. Project: Establishing XDH/XO processing in hepatocytes and downstream impact on levels of XO in the circulation.

FUNDING

Completed

1. American Heart Association, Penn/Delaware Affiliate, Beginning Grant in Aid (**Kelley, PI**) #704390, project title: Adenosine-Mediated Regulation of Endothelial Xanthine Oxidase (7/06-6/08).

2. Center for Medical Countermeasures for Radiation, Department of Defense and University of Pittsburgh Comprehensive Cancer Center, Pilot Project (4/07-4/08), project title: Inhibition of XOR by Allopurinol Protects Normal Cells from Ionizing Radiation. (**Kelley, PI**)

3. University of Pittsburgh, Department of Anesthesiology Seed Grant (**Kelley, PI**), (1/09-1/10), title: Defining the Nitrite Reductase Activity of Xanthine Oxidase.

4. University of Pittsburgh, Vascular Medicine Institute, Pilot Project Grant (**Kelley, PI**), (01/10-01/11), project title: Identification and Quantification of Reactive Oxygen Species Production from Store RBC Preparations.

5. NIH 1S10RR032800-01 (**Kelley, PI**) Title: EPR Detection of Free Radicals in Vascular Disease: Bruker EMXplus Spectrometer, ($321,091.00), 06/11/13.

6. American Heart Association, National Scientist Development Grant #10SDG3560005, (07/10-07/14) (**Kelley, PI**), project title: Xanthine Oxidase-Derived Reactive Species Critically Impact Diabetes-Induced Vascular Inflammation.

7. Department of Anesthesiology Seed Grant (**Kelley, PI**) (06/01/12-06/01/14) Title: Altering XOR-derived reactive species formation to treat obesity-related cardiovascular disease.

8. Department of Anesthesiology Seed Grant (**Kelley, PI**) (06/01/14-05/31/15) Title: XOR-derived pro-inflammatory actors in obesity/metabolic syndrome: uric acid or ROS.

9. 2R01HL058115 (Freeman, PI) 06/01/08–05/31/13 NIH/NHLBI. Title: Redox Transduction of Nitric Oxide Signaling. (**Kelley, Co-I**)

10. NIH R21 (Wendell, PI) (04/01/16 – 03/30/18) Title: The Effects of Nitrate/Nitrite and Conjugated Linoleic Acid Supplementation on the Obese Asthmatic Pathology. (**Kelley, Co-I**)

11. NIA PO1 PAR-11-066 (Robins, PI) (07/01/2013-06/01/2018) Title: Cell-Autonomous and Non-Autonomous Mechanisms of Aging. (**Kelley, Co-I**)

12. 1RO1HL121155 (Gleason, PI) (06/01/12-05/31/17) Title: Redox-mediated cell signaling in bicuspid aortic valve pathology. (**Kelley, Co-I**)

13. AHA Grant-in-Aid (Bisello, PI) (06/30/14-06/30/16) Title: Role of EBP50 in neointimal hyperplasia. (**Kelley, Co-I**)

14. NBIB RO1 11241661 (Bruchez, PI) (07/01/2013-06/01/2017) Title: Targeted fluorescent indicators for endothelial physiology: Ca(II), ROS, NO. (**Kelley, Co-I**)

15. NIH P20 GM109098 (Simpkins, PI) (07/01/2017–04/30/2019) Title: WVU Stroke COBRE. (**Kelley, project-PI**)

Active (Current (Nov 2, 2020) %-effort on external funding = **90%**)

1. R01 DK124510 (**Kelley, PI**) (09/01/2019-08/31/2024) Title: Targeting uric acid as a therapeutic for NASH. *15% effort*

2. 19TPA34850089 AHA (American Heart Association) (**Kelley, PI**) (07/01/2019 - 06/30/2021) Title: Role for xanthine oxidase in hemolytic disease. *5% effort*

3. NIH-1R01HL136383-01 (Bisello, PI) (07/01/17-06/30/21) Title: Regulation of oxidative stress and vascular remodeling by EPB50. **Kellley, Co-I,** *5% effort*

4. NIH P20 GM109098 Phase II (Devries-Nelson, PI) (**Kelley, project-PI**) (08/01/20-01/31/2021) Title: WVU Stroke COBRE/ Project title: Modulating xanthine oxidase product identity to treat ischemic stroke. *50% effort*

5. NIA NS117754-01 (R56) (Chantler, PI) (07/01/20-06/30/21) Title: Psychosocial Stress-Induced Vascular Contributions to cognitive impairment and Alzheimer's disease: the role of xanthine oxidase. **Kelley, Co-I**, *15% effort*

Pending

1. NIH, 1 R01 HL153532-01A1 (**Kelley, PI**) Submitted: 07/05/2020, Title: Role of xanthine oxidase in heme-induced vascular dysfunction. *20% effort*
   Awaiting NOA (10/31/20): Score: 13% / Pay-line = 16%

2. NIH, NIA : PA-20-185 (A1) (Chantler, PI) Submitted: 07/05/2020, Title: Psychosocial Stress-Induced Vascular Contributions To Cognitive Impairment And Alzheimer's Disease: The Role of Xanthine Oxidase. **Kelley, Co-I**, *20% effort*
   Awaiting NOA (10/31/20): Score: 3% / Pay-line = 12%

3. AHA 20CSA35320107 (American Heart Association) (Olfert, PI) (01/01/2021-12/31/2024) Title: Vascular Dysfunction in Offspring Exposed to Maternal Vaping. **Kelley, Co-I**, *5% effort*
   NOA Received October 26, 2020: AHA Award Number: 20CSA35320107

PUBLICATIONS IN PEER-REVIEWED JOURNALS (https://www.ncbi.nlm.nih.gov/pubmed/?term=kelley+ee)

1. Petersen, E.S., **Kelley, E.E.**, Burns, C.P. Membrane lipid modification and sensitivity of leukemic cells to the thioether lipid analogue BM41.440. ***Cancer Res.***, 53:3670-3673, 1992.

2. **Kelley, E.E.**, Modest, E.J., Burns, C.P. Unidirectional membrane uptake of the ether lipid antineoplastic agent edelfosine by L1210 Cells. ***Biochem Pharm***, 45:2435-2439, 1993.

3. Buettner, G.R., **Kelley, E.E.**, Burns, C.P. Membrane lipid free radicals produced from L1210 murine leukemia cells by photofrin photosensitization: an EPR spin trapping study. ***Cancer Res***, 53:6263-6269, 1993.

4. **Kelley, E.E.**, Buettner, G.R., Burns, C.P. Relative α-tocopherol deficiency in cultured cells: free radical-mediated lipid peroxidation, lipid oxidizibility, and cellular polyunsaturated fatty acid content. ***Arch Biochem Biophys***, 319:102-109, 1995.

5. **Kelley, E.E.**, Buettner, G.R., Burns, C.P. Production of lipid-derived free radicals in L1210 murine leukemia cells is an early oxidative event in the photodynamic action of photofrin. ***Photochem Photobiol***, 65:576-580, 1997.

6. **Kelley, E.E.**, Domann, F.E., Buettner, G.R., Oberley, L.W., Burns, C.P. Increased efficacy of *in vitro* photofrin photosensitization of human oral squamous cell carcinoma by iron and ascorbate. ***J Photochem Photobiol B: Biol***, 40:273-277, 1997.

7. **Kelley, E.E.**, Wagner, B.A., Buettner, G.R., Burns, C.P. Nitric oxide inhibits iron-induced lipid peroxidation in HL60 cells. ***Arch Biochem Biophys***, 370:97-104, 1999.

8. Schafer, F.Q., Wang, H.P., **Kelley, E.E.**, Cueno, K.L., Martin, S.M., Buettner, G.R. Comparing beta-carotene, vitamin E and nitric oxide as membrane antioxidants. ***Biol Chem,*** 383:671-681, 2002.

9. Burns, C.P., **Kelley, E.E.**, Wagner, B.A., Buettner, G.R. Role of nitric oxide and membrane polyunsaturation in oxidative cell death. ***Subcell Biochem,*** 36:97-121, 2002.

10. Lam, E.W.N., **Kelley, E.E.**, Buettner, G.R. Tobacco xenobiotics release nitric oxide. ***Tob Induc Dis***, 1:207-211, 2003.

11. **Kelley, E.E.**, Evig, C.B., Weydert, C.J., Chu, Y., Buettner, G.R., Burns, C.P. Endogenous production and exogenous exposure to nitric oxide augment doxorubicin cytotoxicity for breast cancer cells but not cardiac myoblast. ***Nitric Oxide***, 10:119-129, 2004.

12. **Kelley, E.E.**, Trostchansky, A., Rubbo, H., Freeman, B.A., Radi, R.R., Tarpey, M.M. Binding of xanthine oxidase to glycosaminoglycans limits inhibition by oxypurinol. ***J Biol Chem***, 279:37231-37234, 2004.

13. **Kelley, E.E.**, Hock, T., Khoo, N.K.H., Powell, P.C., Giles, G., Richardson, G.R., Agarwal, A., Lancaster, J. Jr., Tarpey, M.M. Moderate hypoxia induces xanthine oxidoreductase activity in arterial endothelial cells. ***Free Radic Biol Med,*** 40:952-959, 2006.

14. Griger, C.E., Oliva, C.R., **Kelley, E.E.**, Giles, G.I., Lancaster, J.R. Jr., Gillespie, G.Y. Xanthine oxidase-dependent regulation of hypoxia-inducible factor in cancer cells. ***Cancer Res.***, 66:2257-2263, 2006.

15. Lang, J.D. Jr, Teng, X., Chumley, P.H., Crawford, J., Isbell, T.S., Chacko, B.K., Liu, Y., Jhala, N., Crowe, R., Smith, A.B., Cross, R.C., Frenette, L., **Kelley, E.E.**, Wilhite, D.W., Hall, C.R., Page, G.P., Bynon, J.S., Eckhoff, D.E., and Patel, R.P. Preemptive Administration of Inhaled Nitric Oxide Accelerates Restoration of Liver Function in Adults Following Orthotopic Liver Transplantation. ***J Clin Invest***, 117:2583-91, 2007.

16. **Kelley, E.E.**, Batthyany, C.I., Hundley, N.J., Woodcock, S.R., Bonacci, G., Del Rio, J.M., Schopfer, F.J., Lancaster, J.R. Jr, Freeman, B.A., Tarpey, M.M. Nitro-oleic acid, a novel and irreversible inhibitor of xanthine oxidoreductase. ***J Biol Chem,*** 283:36176-84, 2008.

17. Rodriguez, A. I., Gangopadhyay, A., **Kelley, E.E.**, Pagano, P.J., Zuckerbraun, B.S., Bauer, P.M. HO-1 and CO Decrease Platelet-Derived Growth Factor-Induced Vascular Smooth Muscle Cell Migration Via Inhibition of Nox1. ***Arterioscler Thromb Vasc Biol,*** 30(1):98-104, 2009.

18. **Kelley, E.E.**, Khoo, N.K.H., Hundley, N.J., Malik, U.Z., Freeman, B.A., Tarpey, M.M. Hydrogen peroxide is the major oxidant product of xanthine oxidase. ***Free Radic Biol Med,*** 48(4):493-8, 2010.

19. Xiao D., Powolny AA, Moura M.B., **Kelley E.E.**, Bommareddy A., Kim S.H., Hahm E.R., Normolle D., Van Houten B., Singh S.V. Phenethyl Isothiocyanate Inhibits Oxidative Phosphorylation to Trigger Reactive Oxygen Species-mediated Death of Human Prostate Cancer Cells. ***J Biol Chem***, 285:26558-69, 2010.

20. Alef, W., Vallabhaneni, R., Carchman, E., Morris, S., Shiva, S., Wang, Y., **Kelley, E.E.**, Tarpey, M.M., Gladwin, M., Tzeng, E. and Zuckerbraun, B. Nitrite-Generated Nitric Oxide Circumvents Dysregulated Arginine/Nitric Oxide Synthase Signaling To Protect Against Intimal Hyperplasia. ***J Clin Invest****,* 121(4):1646-56, 2011.

21. Csányi, G., Cifuentes-Pagano, E., Egaña, L., Al Ghouleh, I., Lopes, L.R., **Kelley, E.E.** and Pagano, P.J. Nox2 B-loop peptide, Nox2ds, specifically inhibits Nox2 oxidase. ***Free Radic Biol Med***, 51(6):1116-25, 2011.

22. Manni, M.L., Tomai, L.P., Norris, C.L., Thomas, L.M., **Kelley, E.E.**, Salter, R.D., Crapo, J.D., Chang, L.Y., Freeman, B.A., Watkins, S.C., Pignellie, J.D. and Oury, T.D. Extracellular Superoxide Dismutase Attenuates Bacterial Pneumonia by Promoting Phagocytosis. ***Am J Pathol****,* 178:2752-9, 2011.

23. Malik, U.Z., Hundley, N.J., Radi, R., Freeman, B.A., Tarpey, M.M. and **Kelley, E.E.** Febuxostat inhibition of endothelial-bound XO: implications for targeting vascular ROS production. ***Free Radic Biol Med****,* 51(1):179-84, 2011.

24. Bonacci, G., Schopfer, F.J., Batthyany, C.I., Rudolph, T.K., Rudolph, V., **Kelley, E.E.** and Freeman, B.A. Electrophilic nitro-fatty acid regulation of matrix metalloproteinase activity and expression. ***J Biol Chem****,* 286(18):16074-81, 2011.

25. Donadee, C., Raat, N.H.J., Tejero, J., Lee, J.S., **Kelley, E.E.**, Zhao, X., Liu, C., Reynolds, H., Azarov, I., Frizzell, S., Meyer, E.M., Donnenberg, A.D., Qu, L., Triulzi, D., Kim-Shapiro, D.B. and Gladwin, M.T. Nitric oxide scavenging by red cell microparticles and cell free hemoglobin as a mechanism for the red cell storage lesion. ***Circulation***, 124:465-76, 2011.

26. Ghouleh, I.A. Khoo, N.K., Knaus, U.G., Griendling, K.K., Touyz, R.M., Thannickal, V.J., Barchowsky, A., Nauseef, W.M., **Kelley, E.E.**, Bauer, P.M., Darley-Usmar, V., Shiva, S., Cifuentes-Pagano, E., Freeman, B.A., Gladwin, M.T. and Pagano, P.J. Oxidases and Peroxidases in Cardiovascular and Lung Disease: New Concepts in Reactive Oxygen Species Signaling. ***Free Radic Biol Med****,* 51:1271-88, 2011.

27. Hahm, E.R., De Moura, MB, **Kelley, E.E.**, Van Houten, B. and Singh, S.V. Withaferin A-induced apoptosis in human breast cancer cells is mediated by ROS-dependent activation of Bak. ***PLoS One****,* 6(8):e23354, 2011.

28. Bernard, M.E., Kim, H., Rwigema, J.C., Epperly, M.W., **Kelley, E.E.**, Murdoch, G.H., Dixon, T., Wang, H. and Greenberger J.S. Role of the esophageal vagus neural pathway in ionizing radiation induced seizures in nitric oxide synthase-1 homologous recombinant negative ($NOS1^{-/-}$) mice. ***In Vivo***, 25(6):861-9, 2011.

29. Khoo, N.K., Cantu-Medline, N., Fleming, A.M., Champion, H.C., Devlin, J.E., Watkins, S., Mason, R.P., Freeman, B.A. and **Kelley, E.E.** Obesity-induced tissue free radical formation: an immunospin trapping study. ***Free Radic Biol Med***, 52:2312–2319, 2012.

30. Csányi, G., Yao, M., Ghouleh, I.A., Rodriguez, A.I., Frazziano, G., Xiaojun, H., **Kelley, E.E.**, Isenberg, J.S., and Pagano, P.J. Matricellular protein thrombospondin-1 via Nox1 impairs blood flow. ***Arterioscler Thromb Vasc Biol***, 32(12):2966-73, 2012.

31. Al Ghouleh I., Frazziano G., Rodriguez A.I., Csányi G., Maniar S., St Croix C.M., **Kelley, E.E.**, Egaña L.A., Song G.J., Bisello A., Lee Y.J. and Pagano P.J. Aquaporin 1, Nox1, and Ask1 mediate oxidant-induced smooth muscle cell hypertrophy. ***Cardiovasc Res****,* 97(1):134-42, 2012.

32. He J, Hu B, Shi X, Weidert ER, Lu P, Xu M, Huang M, **Kelley, EE**, Xie W. Activation of the aryl hydrocarbon receptor sensitizes mice to non-alcoholic steatohepatitis by deactivating the mitochondrial sirtuin deacetylase Sirt3. ***Mol Cell Biol****,* 33(10):2047-55, 2013.

33. Cantu-Medellin, N. and **Kelley, E.E**. Xanthine oxidoreductase-catalyzed reduction of nitrite to nitric oxide: Insights regarding where, when and how. ***Nitric Oxide***, 34:19-26, 2013.

34. Cantu-Medellin, N. and **Kelley, E.E.** Xanthine oxidoreductase-catalyzed reactive species generation: A process in critical need of reevaluation**.** ***Redox Biol***, 1(1):353-358, 2013.

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36. **Kelley**, **E.E.**, Baust, J., Gor, S., Cantu-Medellin, N., Devlin, J.E., St. Croix, C.M., Champion, H.C., Freeman, B.A., and Khoo, N.K.H. Inhibition of Obesity-induced Pulmonary Arterial Hypertension by Fatty Acid Nitroalkene Derivatives. ***Cardiovasc Res***, 101(3):352-63, 2014. PMID: 24385344.

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41. Wang, J., Krizowski, S., Fischer, K., Tejero, J., Zhao, X., Wang, L., Frizzell, S., **Kelley, E.E.**, Shiva, S., Zhang, Y., Hille, R., Basu, P., Schwarz, G. and Gladwin, M.T. Sulfite oxidase catalyzes single electron transfer at molybdenum domain to reduce nitrite to nitric oxide. ***Antioxid Redox Signal****,* 23(4):283-94, 2014. PMID: 25314640.

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46. **Kelley, E.E.** Dispelling dogma and misconceptions regarding the most pharmacologically targetable source of reactive species in inflammatory disease, xanthine oxidoreductase. ***Arch Toxicol***, 89(8):1193-207, 2015. PMID: 25995007.

47. **Kelley, E.E.** A new paradigm for XOR-catalyzed reactive species generation in the endothelium. ***Pharmacol Rep.*** 67(4):669-74, 2015. PMID: 26321266.

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60. Mandler, W.K., Nurkiewicz, T.R., Porter, D.W., **Kelley, E.E.** and Olfert, M.I. Microvascular dysfunction following multi-walled carbon nanotube exposure is mediated by thrombospondin-1 receptor CD47. ***Toxicol Sci.*** 165(1):90-99*,* 2018. PMID: 29788500.

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64. Schmidt, H.M., ***Kelley E.E.**, *Straub, A.C. The impact of xanthine oxidase (XO) on hemolytic diseases. ***Redox Biol.*** 21:101072, 2019. PMID: 30580157. ****Co-corresponding authors***.

65. Proniewski, B., Kij, A., Sitek, B., **Kelley, E.E.** and Chlopicki, Multi-organ development of oxidative and nitrosative stress in LPS-induced endotoxemia in C57Bl/6 mice; DHE-based in vivo approach. ***Oxid Med Cell Longev.*** 2019:7838406, PMID: 31249650.

66. Harmon DB, Mandler WK, Sipula IJ, Dedousis N, Lewis SE, Eckels JT, Du J, Wang Y, Huckestein BR, Pagano PJ, Ciefuentes-Pagano E, Homanics GE, Van't Erve TJ, Stefanovic-Racic M, Jurczak MJ, O'Doherty RM, **Kelley E.E.** Hepatocyte-specific ablation or whole body inhibition of xanthine oxidoreductase in mice corrects obesity-induced systemic hyperuricemia without improving metabolic abnormalities. ***Diabetes***, 68(6):1221-1229, 2019. PMID: 30936145.

67. DeVallance, E., Branyan, K.W., Lemaster, K.C., Anderson, R., Marshall, K.L., Olfert., M.I., Smith, D.M., **Kelley, E.E.**, Bryner, R.W., Frisbee, J.C. and Chantler, P.D. Exercise Training Prevents the Perivascular Adipose Tissue-Induced Aortic Dysfunction with Metabolic Syndrome. ***Redox Biol.***, 26:101285, 2019. PMID: 31374361.

68. **Kelley, E.E.** Diminishing Inflammation by Reducing Oxidant Generation: Nitrated Fatty Acid-Mediated Inactivation of Xanthine Oxidoreductase. ***Adv Exp Med Biol.*** 1127:59-65, 2019. PMID: 31140171.

69. Pardue, S., Kolluru, G.K., Shen, X., Lewis, S.E., Saffle, C.B., **Kelley, E.E.** and Kevil, C.G. Hydrogen sulfide stimulates xanthine oxidoreductase conversion to nitrite reductase and formation of NO. ***Redox Biol.*** 2020 Jan 30:101447. doi: 10.1016/j.redox.2020.101447. [Epub ahead of print]
PMID:32035920.

70. Sanchez-Lozada, L.G., Rodriguez-Iturbe, B., **Kelley, E.E.**, Nakagawa, T., Madero, M., Feig, D.I., Borghi, C., Piani, F., Cara-Fuentes, G., Bjornstad, P., Lanaspa, M.A. and Johnson, R.J. Uric Acid and Hypertension: An Update With Recommendations. ***Am J Hypertens.*** 33(7):583-594, 2020, PMID: 32179896.

Papers published in the past 6 years = 27

Average number of papers published/year in the past 6 years = 4.5

Papers published since beginning at WVU (May, 2016) = 20

Average number of papers published/year since beginning at WVU = 5

h-index = 35 (Oct 30, 2020)

Total number of citations = 4509 (Oct 30, 2020)

BOOK CHAPTERS AND INVITED REVIEWS

1. Burns, C.P., Wagner, B.A., **Kelley, E.E.**, Buettner, G.R. Neoplasia and omega-3 fatty acids, omega-3 fatty acids: metabolism and biological effects. Ed: Dravon, C.A., Bakassas, I., Krokan, H.E. Birkhauser, Berlin, 305-314, 1993.
2. Burns, C.P., **Kelley, E.E.**, Wagner, B.A., Buettner, G.R. Role of nitric oxide and membrane phospholipid polyunsaturation in oxidative cell death. Subcellular biochemistry, phospholipid metabolism and apoptosis. Ed: Quinn, P. and Kagen, V. Kluwer Academic/Plenum Press, New York, Vol 36, 2002.
3. Schafer, F.Q., **Kelley, E.E.**, Buettner, G.R. Critical reviews of oxidative stress and aging: advances in basic science, diagnostics. Ed: Cutler, R.G. and Rodriguez, H. World Scientific, New Jersey, Vol 2, pp 849-869, 2003.
4. Schafer F.Q., **Kelley E.E.**, Buettner G.R. Oxidative stress and antioxidant intervention. In: *Oxidative Stress and Aging, Critical Reviews*. Eds: Cutler RG, Rodriguez H. World Scientific Publishing, River Edge, NJ, Chapter 49, pp 849-869, 2003.
5. **Kelley, E.E.** Chapter: The Biochemistry of molybdopterin protein-catalyzed nitrate/nitrite reductase activity. In: *Nitric Oxide, Edited by Lou Ignarro, 3rd Edition in press, 2018.*

6. **Kelley, E.E.** Chapter: Diminishing Inflammation by Reducing Oxidant Generation: Nitrated fatty acid-mediated inactivation of xanthine oxidoreductase, Chapter 4, *Bioactive lipids in Health and Disease,* Edited by: Homero Rubbo and Andres Trostchansky (*in press*, 2018) Springer.

MANUSCRIPTS IN REVIEW

1. Yousefzadeh, M.J., Flores, R.R., Brooks, R.W., Zhao, J., Sano, T., Angelini, L.A., Wade, E.A., Bukata, C., McGowan, S.J., Harris, J.B., Ramgolam, I.E., Calubag, M.F., Bank, M.P., Trussoni, C.E., Kato, J.I., Melos, K.I., McGuckian, C.A., Wang, D., Dong, Q., Patil, P., Li, K., O'Kelly, R.D., Ladiges, W.L., Burd, C.E., LaRusso, N.F., Wang, Y., **Kelley, E.E.**, Vo, N.V., Robbins, P.D. and Niedernhofer, L.J. Immune-specific aging drives senescence and dysfunction of peripheral tissues. ***Nature***, (manuscript #: 2019-03-03395B-reviewed, revised and currently in 2nd review: 10/25/20).
2. Schmidt, H., Lewis, S.E., **Kelley, E.E.** and Straub, A.C. Impact of XOR-derived oxidants on vascular homeostasis in sickle cell disease. ***ATVB***, (manuscript # ATVB/2020/315081-In Revision: 10/18/20).

MANUSCRIPTS IN PREPARATION for SUBMISSION

1. Lewis, S.E. and **Kelley, E.E.** Xanthine oxidoreductase and nitrite in the vascular compartment. *Invited Review* to: ***Nitric Oxide***, March 1st, 2021.
2. **Kelley, E.E.** An old enzyme with a new life: assessing xanthine oxidoreductase's countervailing contributions to health and disease. *Invited Review* to: ***Redox Biol.,*** April 1st, 2021.
3. Saffle, C.B., Giromini, A., Williams, X., Chantler, P.D., Schmidt, H., Straub, A.C., Lewis, S.E. and **Kelley, E.E.** Human and Rodent Red Blood Cells do not Demonstrate Xanthine Oxidase Activity or Xanthine Oxidase-Catalyzed Nitrite Reduction to Nitric Oxide. To: ***Redox Biol.***, Dec, 2020.
4. DeVallance, E.R., Branyan, K.W., Olfert, M.I., Pistilli, E.E., Bryner, R.W., **Kelley, E.E.,** Frisbee, J.C. and Chantler, P.D. Chronic stress induced perivascular adipose tissue impairment of aortic function and the therapeutic effect of exercise. To: ***Med Sci Sports Exerc.*** Nov 15th, 2020.
5. Book Chapter: **Kelley, E.E.** "Vascular oxidases in zero gravity" in ***Space vessels versus blood vessels: Countdown to touchdown***. Cambridge Scholars: Edited by: Survo Chatterjee and Christopher Kevil, Due: 10 Jan 2020.
6. Saralkar, P., Mdzinarishvili, A., Lee Y., Sullivan, P.G., Pinti, M.V., Hollander, J.M., **Kelley, E.E.**, Robart, A.R., Hazlehurst, L.E., Huber, J.D., and Geldenhuys, W.J. The mitochondrial mitoNEET ligand NL-1 is protective in a murine model of transient cerebral ischemic stroke. To: ***ACS Pharmacology & Translational Science*** Dec 15th, 2020.

INVITED TALKS

1) Invited Speaker: *In vivo* photodynamic therapy with photofrin produces nitric oxide in L1210 solid tumors. *American Society for Photobiology*, Chicago, IL, July 1997.
2) Invited Speaker: Nitric oxide sensitizes human breast cancer cells to photodynamic therapy. Symposium: Nitric Oxide in Photobiology, *American Society for Photobiology*, Snow Bird, Utah, July 2001.

3) Seminar: Endogenous nitric oxide production sensitizes human breast cancer cells to PDT. Center for Free Radical Biology, University of Alabama at Birmingham, April 2003.

4) Seminar: Xanthine oxidoreductase in vascular inflammation. Department of Radiation Oncology, University of Iowa, Iowa City, IA, March 2004.

5) Seminar: Hypoxic modulation of xanthine oxidase. Department of Radiation Oncology, The University of Iowa, Iowa City, IA, May 2006.

6) Seminar: Nitrite reductase activity of xanthine oxidase. Free Radical and Radiation Biology Program, University of Iowa, Iowa City, IA, August 2008.

7) Invited Speaker: Xanthine oxidase and inflammation. *Gordon Conference, Oxygen Radicals*, Ventura CA, February 2010.

8) Invited Speaker: Practiced at the art of deception: The role of XO in vascular inflammation. *Oxidases in Vascular Biology Symposium*, University of Pittsburgh, May, 2010.

9) Invited Speaker: NO_2^- reductase activity of XO: Where are we now? *Wake Forest University Nitric Oxide Symposium*, Nemacolin, PA, May 29, 2010.

10) Seminar: Practiced at the art of deception: XO's countervailing roles in vascular inflammation. Center for Free Radical Biology, University of Alabama at Birmingham, Nov 4, 2010.

11) Invited Speaker: XO's countervailing roles in vascular inflammation. Department of Physiology and Pharmacology, Karolinska Institute, Stockholm, Sweden, May, 2011.

12) Invited Speaker: Obesity-induced reactive species generation and allied cardiovascular disease: Targeting XOR as treatment strategy. *Larry W. Oberley Memorial Symposium*, University of Iowa, June 2, 2012.

13) Seminar: Obesity-induced free radical generation and the role of XOR. Department of Biomedical Sciences, University of Minnesota, Duluth, MN, July 5th, 2012.

14) Invited Speaker: Binding of XOR to GAGs facilitates nitric oxide formation from nitrite: Implications for vascular therapy. *The 7th International Conference on the Biology Chemistry and Therapeutic Application of Nitric Oxide,* Edinburgh, Scotland, July 2012.

15) Seminar: Manipulating reactive species generation from xanthine oxidase to treat obesity-related vascular inflammation and cardiac dysfunction. Department of Physiology and Pharmacology, West Virginia University, Morgantown, WV, October 25th, 2012.

16) Seminar: Countervailing roles for XOR in obesity-induced cardiopulmonary disease. Department of Endocrinology, University of Pittsburgh, February 19th, 2013.

17) Seminar: Nitrite-mediated alteration of XOR-catalyzed NO formation: Implications for treating obesity-mediated hyperglycemia and pulmonary hypertension. Department of Pharmacology, Vanderbilt University, Nashville, TN, February 27th, 2013.

18) Invited Speaker: Detection of free radicals in biological tissues. *McGowan Institute for Regenerative Medicine Retreat*, Nemacolin, Farmington, PA, March 4th, 2013.

19) Invited Speaker: XOR-catalyzed NO formation improves obesity-mediated hyperglycemia and pulmonary hypertension. *Fifth International Meeting of the Role of Nitrite and Nitrate in Physiology, Pathophysiology, and Therapeutics* Pittsburgh, PA, May 4th, 2013.

20) Invited Speaker: Xanthine oxidase and nitrite: new approaches to address obesity-mediated pulmonary hypertension. *Society of Free Radical Research-South America*, Buenos Aries, Argentina, October 20, 2013.

21) Seminar: Sodium nitrite improves impaired glucose tolerance and cardiopulmonary dysfunction via an XOR-mediated process. Department of Pharmacology and Experimental Therapeutics, Louisiana State University (LSU-NO), New Orleans, LA, March 14th, 2014.

22) Seminar: Free radical and reactive species detection in obesity-mediated inflammatory processes. Department of Molecular and Cellular Physiology, Louisiana State University (LSU), Shreveport, LA, April 2, 2014.

23) Invited Speaker: Under clinically-relevant O_2 tensions and NAD^+ concentrations, xanthine dehydrogenase (XDH) is a robust nitrite reductase*. The 8th International Conference on the Biology Chemistry and Therapeutic Application of Nitric Oxide,* Cleveland, Ohio, June 2014*.*

24) Invited Speaker: Converting xanthine oxidoreductase from oxidant to NO production improves obesity-mediated metabolic and cardiopulmonary disease. Jagiellonian Centre for Experimental Therapeutics (JCET), Kraków, Poland, March 2015.

25) Seminar: The role of xanthine oxidoreductase in metabolic syndrome. Department of Physiology and Pharmacology, West Virginia University, Morgantown, WV, December 3rd, 2015.

26) Seminar: Xanthine oxidase in cardiovascular disease. Department of Cellular and Integrative Physiology, Free Radicals in Medicine Program, University of Nebraska Medical Center. Omaha, Nebraska, November 10th, 2016.

27) Invited Speaker: The pathophysiology of xanthine oxidoreductase. University of Nebraska, School of Medicine, Center for Redox Biology, November, 10th, 2016.

28) Invited Speaker: Comparing progeria to natural aging reveals new insights regarding the association of time and redox imbalance. *Society for Redox Biology and Medicine International*, November 2016.

29) Invited Speaker: Uric acid or ROS: which XOR product is driving cardiovascular and metabolic disease. *Fondazione Internazionale Menarini International Symposium on Uric Acid Cardiovascular Disease*, Bologna, Italy, December, 2016.

30) Invited Speaker: Swapping one free radical for another to address metabolic/cardiovascular dysfunction allied to obesity. *EPR-17*: International Meeting of the EPR Society, Morgantown, WV, May 2017.

31) Invited Speaker: Metabolic and cardiovascular dysfunction allied to obesity: A central role for xanthine oxidoreductase. Immunity, Inflammation & Disease Group (NIEHS) Research Triangle Park, NC, February 20, 2018.

32) Invited Speaker: Targeting XOR as treatment strategy for obesity-induced cardiovascular disease. *Larry W. Oberley Memorial Symposium*, University of Nebraska, June 2, 2018.

33) Invited Speaker: Methods in redox biology: immuno-spin trapping. *Center for Cardiovascular Medicine, Redox Biology in Cardiovascular Disease CoBRE, Special Lecture Series, LSU, Shreveport, LA, October 24*, 2018.

34) Invited Speaker: Xanthine oxidase and uric acid in obesity. *2019 International Symposium on Urate Deposition Disease, Boston, MA, June 20*, 2019.

35) Invited Speaker: Hepatocellular xanthine oxidase and uric acid in obesity. *2nd Annual Summit on Diabetes, Obesity and Heart,* May 18-19, 2020 in Dublin, Ireland. (moved to online)

36) Invited Speaker: The role of XOR in obesity. *10th European Congress on Obesity and Eating Disorders*, September 21-22, 2020 Edinburgh, Scotland. (moved to online)

37) Invited Speaker: The ins and outs of XOR in hyperuricemia. *Gout Hyperuricemia and Crystal-Associated Disease Network (G-CAN) International Research Symposium*. On-line November 6th, 2020.

38) Invited Speaker: XOR, uric acid and metabolic dysfunction in obesity. *Endocrinology and Metabolism On-Line International Meeting,* December 10-11, 2020.

CURRICULUM VITAE

NAME: Richard Edwin Klabunde (SS# 568-68-8446)

ADDRESS: (Home): 326 Meadow Lane, Rt 7
Morgantown, WV 26505
(304)594-2966

(Office): Department of Physiology
West Virginia University Medical Center
Morgantown, WV 26506
(304)293-4991

DATE OF BIRTH: October 7, 1948

PLACE OF BIRTH: Pasadena, California

MARITAL STATUS: Married, four children

AREAS OF INTEREST: 1) Sympathetic adrenergic, humoral and metabolic mechanisms regulating vascular tone in the peripheral circulation

2) Nucleoside metabolism in blood

EDUCATION: Benjamin Franklin High School, Los Angeles, California. Graduated June, 1966.

Pepperdine University, Los Angeles, California. B.S. (Major: Biology; Minor: Chemistry) May, 1970.

University of Arizona, Tucson, Arizona. Ph.D. (Major: Physiology; Minor: Biochemistry) August, 1975.

PROFESSIONAL EXPERIENCE:

1983 - Present - Associate Professor
Dept. of Physiology
West Virginia University
Medical Center

1978 - 1983 - Assistant Professor
Dept. of Physiology
West Virginia University
Medical Center

1977 - 1978 - Assistant Research Physiologist
Pharmacology Division, Dept. of Medicine, University of California, San Diego

1976 - 1977	- Postgraduate Research Pharmacologist Pharmacology Division, Dept. of Medicine, University of California, San Diego
1976	- NHLBI Postdoctoral Fellow, Pharmacology Division, Dept. of Medicine, University of California, San Diego
1975 - 1976	- American Heart (Arizona Affiliate) Postdoctoral Research Fellow, Department of Physiology, University of Arizona
1970 - 1975	- NIH Predoctoral Cardiovascular Trainee, Department of Physiology, University of Arizona.

PROFESSIONAL SOCIETIES:

American Physiological Society
Microcirculatory Society
American Scientific Affiliation

AWARDS:

Teaching Assistant Award presented by the University of Arizona Foundation, 1975.

American Heart Association (Arizona Affiliate) Postdoctoral Research Fellowship, 1975.

National Research Service Award, NHLBI, 1976.

RESEARCH GRANT SUPPORT:

Current

AHA, WV Affiliate, "Adenosine Modulation of Sympathetic Vascular Tone." (Principal Investigator) $14,988, 7/1/84-6/30/86.

AHA, WV Affiliate, "Studies on Pulmonary Transit Time in the Dog." (Co-investigator) $10,000, 7/1/84-6/30/85.

Past

WVU Biomedical Research Support, "Adenosine Accumulation in Ischemic Skeletal Muscle". $3,000, 1/78 - 10/79.

WV Affiliate, AHA, "Dipyridamole Potentiation of Reactive Hyperemia". $4,000, 11/79 - 10/80.

NHLBI, "Regulation of Blood Flow in Contracting Skeletal Muscle".
$91,198, 8/79-7/82.

WV Affiliate, AHA, "Role of Prostaglandins in Skeletal Muscle Exercise Hyperemia".
$9,980, 7/1/82 - 12/31/83

WVU Biomedical Research Support, "Role of Ischemia in Adenosine Regulation of Blood Flow in Contracting Skeletal Muscle".
$4,925, 11/1/82 - 10/31/83.

WVU Biomedical Research Support, "Skeletal Muscle Vascular Escape from Sympathetic Vasoconstriction During Prolonged Ischemia".
$6,147, 11/1/83-10/31/84.

WVU Biomedical Research Support, "Comparison of Plasma Metabolites in Homodialysis and CAPD Patients." (Co-investigator)
$3,500, 4/1/84-3/30/85

WVU Biomedical Research Support, "The Hemodynamics of Sequential Vascular Grafts." (Co-investigator)
$2,500, 4/1/84-3/30/85

JOURNAL ARTICLES REFEREED:
Circulation Research
American Journal of Physiology (Heart Circ. Physiol.)
Journal of Pharmacology and Experimental Therapeutics
Microvascular Research

RESEARCH GRANTS REVIEWED:
American Heart Association, WV Affiliate
NIH Postdoctoral Fellowship Applications, Ad Hoc

TEACHING EXPERIENCE:

Univ. of Arizona:
Medical Physiology laboratories, 1971-1975
Physiology for Engineers, 1973-1975

UC San Diego:
Pharmacology Lecture Conference, 1976-1978

West Virginia Univ.:
Medical/Graduate Physiology, 1978-present
Physiological Methods Lab, 1978-present
Advanced Physiology, 1979-present
Gen. Animal Physiol.(undergrad.), 1982, 1984

Cornell Univ. (Ithaca, N.Y.):
Mammalian Physiol., 1981-1985
(grad. and undergrad.)

COMMITTEE EXPERIENCE:

West Virginia Univ.:

Graduate Student Committees (7 Ph.D.; 1 M.D. Physiol. and Pharmacol. Depts.,	1979-present
Graduate Studies Committee Physiology Department	1979-present
Curriculum Committee School of Medicine	1979-1984
Research Policy and Allocations Committee (WV Heart Association)	1979-1983
Board of Directors (WV Heart Association)	1983-present
Research Peer Review Committee (WV Heart Assoc.)	1984-present
Animal Care Committee, Chairman	1984-present

PROFESSIONAL PRESENTATIONS:

Reactive Hyperemia in Red and White Skeletal Muscle of the Chicken	FASEB Annual Meeting, Atlantic City, 1975
Effect of Reduced Tissue Temperature on Reactive Hyperemia in Red and White Muscle of the Chicken	APS Annual Fall Meeting, San Francisco, 1975
Skeletal Muscle PO_2 Changes During Reactive Hyperemia	APS Annual Fall Meeting, Univ. of Penn., 1976
Effects of Ischemia on ATP, ADP, Inorganic Phosphate, and Glucose-6-Phosphate in Red (slow) and White (Fast) Skeletal Muscle	FASEB Annual Meeting, Chicago, 1977
Effects of Ischemia on Tissue Metabolites in Red and White Skeletal Muscle	West Coast Renal Micro-Circulatory Club, Univ. of Arizona, 1977
Measurement of Adenosine and Inosine in Ischemic Red and White Skeletal Muscle by High Pressure Liquid Chromatography	APS Annual Fall Meeting, St. Louis, 1978
Metabolic Basis of Ischemic Vasodilation in Skeletal Muscle	Ohio-Genesee Cardiology Conference, Morgantown, 1979
Potentiation of Postischemic Vasodilation by Dipyridamole (persantine) in Dog Gracilis Muscle	Microcirculatory Society Annual Meeting, Anaheim, CA, 1978
Is Adenosine a Mediator of Ischemic Vasodilation in Skeletal Muscle?	Cornell University, Ithaca, 1981

Evaluation of the Role of Adenosine in Skeletal Muscle Ischemic Vasodilation Using Dipyridamole	Ohio-Genesee Cardiology Conference, Ohio State Univ., 1981
Adenosine Metabolism in the Blood of Man and His Best Friend	WVU, Dept. of Physiology 1982
Adenosine as a Mediator of Skeletal Muscle Postcontraction Hyperemia and Effects of Dipyridamole on Postischemic Vasodilation and Interstitial Adenosine	Oral Roberts University, Dept. of Physiology, 1982
Dipyridamole Potentiation of Extracellular Adenosine in Ischemic Dog Skeletal Muscle	APS Annual Fall Meeting San Diego, 1982 (also chaired session)
A Hydrodynamic Model for Blood Flow in the Human Leg	WVU, Dept. of Physiology 1983
A Hydrodynamic Model for Blood Flow in the Human Leg	FASEB Annual Meeting Chicago, 1983
Influence of Sympathetic Tone on Active and Reactive Hyperemia in Skeletal Muscle	Oral Roberts University Dept. of Physiology, 1983
Role of Adenosine in Skeletal Muscle Active Hyperemia	University of Arizona Dept. of Physiology, 1983
Role of Adenosine in Exercise-Induced Hyperemia in Canine Gracilis Muscle	Univ. of Calif., San Diego Div. of Cardiology, 1983
Effects of Sympathetic Tone on Skeletal Muscle Active and Reactive Hyperemia	WVU, Dept. of Physiology, 1983
Effects of Sympathetic Tone on Skeletal Muscle Active Hyperemia	Microcirculatory Society Annual Meeting, St. Louis, Mo 1984
Dipyridamole Potentiation of Skeletal Muscle Active Hyperemia Following Ischemic Contractions	FASEB Annual Meeting St. Louis, 1984
Muscle Blood Flow: Neural and Metabolic Interactions	Uniformed Services University of Health Sciences Dept. of Physiology, 1984
Skeletal Muscle Blood Flow: Neural and Metabolic Control	Smith Kline and French Laboratories, Department of Pharmacology, 1984

Attenuation of Skeletal Muscle Reactive Hyperemia by Sympathetic Nerve Stimulation	Microcirculatory Society Annual Meeting, Tucson, Az, 1985
Effects of Adenosine Infusion on Sympathetic Vasoconstrictor Responses in Skeletal Muscle	FASEB Annual Meeting, Anaheim, Ca, 1985
Regulation of Skeletal Muscle Blood Flow	WVU, Dept. of Biology, 1984
Sympathetic Control of Muscle Blood Flow	WVU, Dept. of Physiology, 1985

PUBLICATIONS

Papers Published:

1. Klabunde, R. E., and P. C. Johnson. Reactive hyperemia in capillaries of red and white skeletal muscle. Am. J. Physiol. 232: H411-H417, 1977.

2. Klabunde, R. E., and P. C. Johnson. Capillary velocity and tissue PO_2 changes during reactive hyperemia in skeletal muscle. Am. J. Physiol. 233: H379-H383, 1977.

3. Klabunde, R. E., C. L. Winser, C. S. Ito, and S. E. Mayer. Measurement of adenosine and inosine in heart samples by high pressure liquid chromatography. J. Molec. Cell. Cardiol. 11: 707-715, 1979.

4. Klabunde, R. E., and S. E. Mayer. Effects of ischemia on tissue metabolites in red (slow) and white (fast) skeletal muscle of the chicken. Circ. Res. 45: 366-373, 1979.

5. Klabunde, R. E., and P. C. Johnson. Effects of reduced temperature on capillary flow and reactive hyperemia in red and white skeletal muscle. Microvasc. Res. 19: 99-107, 1980.

6. Klabunde, R. E., and D. G. Althouse. Adenosine metabolism in dog whole blood: Effects of dipyridamole. Life Sci. 28: 2631-2641, 1981.

7. Klabunde, R. E. Effects of dipyridamole on postischemic vasodilation and extracellular adenosine. Am. J. Physiol. 244:H273-H280, 1983.

8. Klabunde, R. E. Dipyridamole inhibition of adenosine metabolism in human blood. Eur. J. Pharmacol. 93:21-26, 1983

9. Kille, J.M., and R.E. Klabunde. Adenosine as a mediator of postcontraction hyperemia. Am. J. Physiol. 246:H274-H282, 1984.

10. Klabunde, R.E., and D.E. McDowell. A hydrodynamic model of the human leg circulation. The Physiologist 27:431-434, 1984.

11. Rankin, R.S. and R.E. Klabunde. Indomethacin and meclofenamate potentiation of postcontraction hyperemia. Life Sci. 36:161-168, 1985.

Abstracts: (* published later in full paper)

*1. Klabunde, R. E., and P. C. Johnson. Reactive hyperemia in red and white muscle of the chicken. Fed. Proc. 34: 360, 1975.

*2. Klabunde, R. E., and P. C. Johnson. Effects of reduced tissue temperature on reactive hyperemia in red and white muscle of the chicken. Physiologist 18, 277, 1975.

*3. Klabunde, R. E., and P. C. Johnson. Skeletal muscle PO_2 changes during reactive hyperemia. Physiologist 19: 254, 1976.

*4. Klabunde, R. E., and S. E. Mayer. Effects of ischemia on ATP, ADP, inorganic phosphate, and glucose-6-phosphate in red (slow) and white (fast) skeletal muscle. Fed. Proc. 36: 525, 1977.

*5. Klabunde, R. E., and S. E. Mayer. Measurement of adenosine and inosine in ischemic red and white skeletal muscle by high pressure liquid chromatography. Physiologist 21: 65, 1978.

*6. Klabunde, R. E., D. G. Althouse, and C. A. Borchert. Potentiation of postischemic vasodilation by dipyridamole (persantine) in dog gracilis muscle. Microvasc. Res. 20: 115, 1980.

*7. Kille, J.M. and R.E. Klabunde. Potentiation of post-exercise hyperemia by dipyridamole in canine gracilis muscle in situ. Physiologist 24: 75, 1981.

*8. Klabunde, R.E. Dipyridamole potentiation of extracellular adenosine in ischemic dog gracilis muscle. Physiologist 25: 257, 1982.

*9. Kille, J.M. and R.E. Klabunde. Effects of altering adenosine metabolism on postexercise hyperemia in dog gracilis muscle. In: Regulatory Function of Adenosine, edited by R. M. Berne, T. W. Rall, and R. Rubio, Martinus Nijhoff: Boston, 1983, pp. 521-522.

*10. Klabunde, R.E., and D.E. McDowell. A hydrodynamic model of the human leg circulation. Fed. Proc. 42: 1382, 1983.

11. Klabunde, R.E. Dipyridamole potentiation of skeletal muscle active hyperemia following ischemic contractins. Fed. Proc. 43:1082, 1984.

12. Klabunde, R.E. Effects of sympathetic vascular tone on skeletal muscle active hyperemia. Microvasc. Res., 27:248, 1984.

13. Klabunde, R.E. Attenuation of skeletal muscle reactive hyperemia by sympathetic nerve stimulation. Microvasc. Res., 29:233, 1985.

14. Laughlin, M.H., R.E. Klabunde, and R.B. Armstrong. Lack of adenosine role in exercise hyperemia in rat muscle during treadmill locomotion? Microvasc. Res. 29:231, 1985.

15. Klabunde, R.E. Effects of adenosine infusion on sympathetic vasoconstrictor responses in skeletal muscle. Fed. Proc. 44:808, 1985

Manuscripts Submitted for Publication or in Preparation:

1. Klabunde, R. E. Conditions for dipyridamole potentiation of skeletal muscle active hyperemia. Submitted to Am. J. Physiol., 1985.

2. McDowell, D.E., R.E. Klabunde, R.M. High, and R. Ball. The hemodynamics of simple and sequential vascular grafts in dogs three months after insertion. Submitted to J. Vasc. Surgery, 1985.

3. Klabunde, R.E., M.H. Laughlin, and R.B. Armstrong. Lack of adenosine role in exercise hyperemia in rat muscle during treadmill locomotion. (In preparation) 1985.

4. Klabunde, R.E. Sympathetic stimulation limits active and reactive hyperemia in dog gracilis muscle. (In preparation) 1985.

5. Klabunde, R.E. Effects of adenosine on sympathetic visoconstriction in dog gracilis muscle. (In preparation) 1985.

RESEARCH TRAINING AND EXPERIENCE

Predoctoral

My research leading to the Ph.D. degree in physiology (cardiovascular) involved studying the mechanisms of blood flow regulation in the microcirculation. I was trained under the guidance of Dr. Paul C. Johnson in the use of the following techniques: microvascular velocity and flow measurements using digital cross-correlation and video imaging tecniques; microvascular pressure and diameter measurements; iontophoretic application of drugs to the microvasculature; and oxygen microelectrode measurement of tissue oxygen. I primarily worked with skeletal muscle preparations although I was also involved in experiments using splanchnic and cutaneous vascular preparations.

Postdoctoral

My postdoctoral training was in pharmacology under the direction of Dr. Steven E. Mayer at the University of California at San Diego. At that time, I was interested in learning how ischemia affected tissue metabolism in skeletal muscle. More specifically, I was evaluating the hypothesis that specific tissue metabolites having vasodilator properties were involved in regulating blood flow in skeletal muscle. A large part of my work involved using fluorometric enzymatic assays to measure glycolytic intermediates and nucleotides in tissue biopsy samples. The most profitable aspect of my postdoctoral research was the development of a reverse-phase high pressure liquid chromatographic method to measure cardiac and skeletal muscle concentrations of adenosine and its metabolites. Since that time, I have used the HPLC extensively in my research. Adenosine is of special interest because of its purported role as a regulator of blood flow in many vascular beds, especially the coronary circulation.

While at San Diego, I had much interaction with investigators having very diverse interests. The laboratory in which I worked had several individuals investigating adrenergic mechanisms which lead to altered function in cardiac muscle and vascular smooth muscle. I also became familiar with various animal models and techniques used to study function and metabolism in the normal, ischemic, and hypertrophied myocardium.

Independent Investigator

When I came to West Virginia University in 1978, I established a cardiovascular laboratory to study the mechanisms of blood flow regulation in the peripheral circulation. By using a combination of physiological, pharmacological, and biochemical techniques, I have been investigating the role of adenosine and prostaglandins in the regulation of blood flow in ische-

mic and exercising skeletal muscle of the dog. The basic approach has been to determine the hemodynamic effects of drugs which alter adenosine and prostaglandin formation or degradation. Because of the importance of adenosine as a factor affecting blood flow, I also designed in vitro experiments to quantify adenosine metabolism in dog and human blood and to evaluate the actions of dipyridamole and other modifiers of adenosine transport and metabolism. Radioisotopic techniques coupled with HPLC have been used to trace the pathways of adenosine metabolism and the effects of drugs on its metabolism. I am presently investigating the interactions

I am presently investigating the interactactions between sympathetic adrenergic and local metabolic mechanisms in the regulation of skeletal muscle blood flow. These experiments use the dog gracilis nerve-muscle preparation which permits independent regulation of sympathetic vasomotor tone and tissue metabolic activity. I am evaluating the hypothesis that locally produced adenosine antagonizes, and thereby modulates, sympathetic vasoconstrictor influences during muscle contraction, short-term ischemia, and prolonged hypoperfusion. I am also collaborating with a clinical cardiologist. We are evaluating how changes in cardiac function and peripheral vascular function affect pulmonary transit time in the dog. Pulmonary transit times are determined using thermodilution and dye dilution techniques in dogs which have undergone cardiac catheterization.

New studies beginning during the summer of 1985 will examine how prostaglandins and vasoactive peptides modify sympathetic vasoconstrictor responses in skeletal muscle. Some of these experiments will be done in the dog gracilis muscle; however, ost experiments will use the isolated perfused rat hindlimb.

REFERENCES:

Dr. Richard J. Head
Associate professor
Department of Phrmacology and Toxicology
West Virginia University Medical Center
Morgantown, West Virginia 26506-6302

(304) 293-3159

Dr. George A. Hedge
Professor and Chairman
Department of Physiology
West Virginia University Medical Center
Morgantown, West Virginia 26506-6302

(304) 293-4991

Dr. Michael D. Johnson
Associate Professor
Department of Physiology
West Virginia University Medical Center
Morgantown, West Virginia 26506-6302

(304) 293-4991

Dr. Theodore J. Torphy
Research and Development, F60
Smith Kline and French Laboratories
1500 Spring Garden Street
Philadelphia, PA 19101

(215) 751-4000

Vamsi K. Kodali

Associate Service Fellow,
Pathology and Physiology Branch,
Health Effects Laboratory Division,
National Institute for Occupational Safety & Health,
Center for Disease Control,
Morgantown, USA.
Phone: *(404) 909-7872*

Adjunct Assistant Professor,
School of Medicine,
West Virginia University,
Morgantown, WV
Email: vkodali@cdc.gov
vamsikodali@yahoo.com

EDUCATION

2006-2010

PhD Biology, Max Planck Institute for Intelligent Systems, Stuttgart, Germany, Degree granting institute "Ruprecht Karl University of Heidelberg", Heidelberg, Germany

2003-2005

Master of Science in Biomedical Engineering, University of Applied Sciences Aachen, Aachen, Germany. Master Thesis: Biophysical Chemistry, Ruprecht Karl University of Heidelberg, Heidelberg, Germany

1998-2002

Bachelor's in Mechanical Engineering, Jawaharlal Nehru Technological University, Hyderabad, India

WORK EXPERIENCE

April 2015 - to date

Service Fellow, Pathology and Physiology, Health Effects Laboratory Division, National Institute for Occupational Safety & Health, Morgantown, WV, USA

- Experimentally evaluate potency and mechanism of toxicity due to inhalation exposure of various pollutants from occupational settings.
- Collect and analyze research data. Prepare manuscripts. Present work at conferences.
- Design and implement research protocols independently. Prepare research grants.

June 2019 – to date

Adjunct Assistant Professor, School of Medicine, West Virginia University, Morgantown, WV.

- Advising students and participating in professional development activities.
- Collaborate with university faculty and develop research projects. Prepare research grants.

Feb 2021 – to date

Asst. Coordinator, NORA Council, Small Business Assistance (SBA) Program.

- Participation in development of SBA Program communication materials.
- Reviews research proposals for the NORA Intramural Research Competition.
- Participation in developing and revising NIOSH Strategic Goals for the SBA Sector.
- Collect, prepare, and analyze research data, prepare manuscripts. Present on behalf of NORA SBA at conferences.

January 2021 – to date

Primary Responder - CDC Global Rapid Response Team (GRRT).

- COVID-19 Emergency Response Support for STLT, Health Department. (04/22-05/22)

- Provide laboratory-based expertise for domestic and international emergencies.
- Take all the necessary trainings and health screenings to be deployment ready.

January 2022 – to date

Member, NIOSH Diversity, Equity & Inclusion Office (DEIO)/Blueprint in Action (BIA).

- Team member IAL3 group, working on creating equitable inclusion of all demographic groups in the front-line, mid- and senior-level leadership ranks across NIOSH.

May 2022 – to date

Secretary/Treasurer, Nanoscience and Advanced Materials Specialty Section, Society of Toxicology.

May 2021 – May 2022

Councilor (Past President), Allegheny-Erie Society of Toxicology.

May 2020 – May 2021

President, Allegheny-Erie Society of Toxicology.

May 2018 – May 2019

Councilor, Allegheny-Erie Society of Toxicology.

January 2011 – February 2015

Post-Doctoral Research Associate, Center for NanoToxicology, Health Impact and Exposure Sciences, Pacific Northwest National Laboratory, US Department of Energy, WA, USA

April 2007 – December 2010

Visiting Research Scientist, Georgia Institute of Technology, Atlanta, Georgia, USA

Feb 2006 – March 2007

Research Associate, Max Planck Institute for Intelligent Systems, Stuttgart, Germany

March 2005- January 2006

Research Associate, Biophysical Chemistry, University of Heidelberg, Heidelberg, Germany

Research Assistant, European Molecular Biology Laboratory, Heidelberg, Germany

PATENT

- "Thermochemical Nanolithography of Multi-Functional Templates for Selective Assembly of Bioactive Proteins", US Patent 8468611, European EP Patent 2,435,880 and International Patent WO Patent 2,010,138,965. Licensed and commercialized by Nanoink Inc.

BOOK CHAPTERS

- "Toxicity Potential of Engineered Nanomaterials: Emerging Mechanisms", *Studies on Experimental Toxicology and Pharmacology*, Edited by Stephen M. Roberts, Lars-Oliver Klotz and James P. Kehrer, Springer-Verlag, 2015, 347-367

- "A New AFM Based Lithography Method: Thermochemical Nanolithography", *Scanning Probe Microscopy in Nanoscience and Nanotechnology*, Edited by B.Bhushan, Springer-Verlag, ISBN: 3642035345.

- "Thermochemical Nanolithography", *Tip Based Nanofabrication: Fundamentals and Applications*, Edited by Ampere Tseng, Springer-Verlag, ISBN 1441998985

PEER REVIEWED JOURNAL PUBLICATIONS

Kodali V, Afshari A, Meighan T, Mckinney W, Hasan Mazumder H, Majumder N, Cumpston J, Leonard H, Cumpston J, Friend S, Leonard S, Erdely A, Erdely P, Hussain S, Gyung Lee E, Antonini J, 2022. *In vino and in vitro toxicity of a stainless-steel aerosol generated during thermal spray coating.* **Arch Toxicol.** 1-17.

Majumder, N., Deepak, V., Hadique, S., Aesoph, D., Velayutham, M., Ye, Q., Mazumder, M.H., Lewis, S.E., Kodali, V., Roohollahi, A. and Guo, N.L., 2022. *Redox imbalance in COVID-19 pathophysiology*, 2022. **Redox Biology**, p.102465.

Erdely P, Erdely A, Kodali V, Andrews R, Antonini J, Trainor-Dearmitt T, Salmen R, Battelli L, Grose L, Kashon M, Service S, Mckinney W, Stone S, Falcone L [2022]. *Lung Toxicity Profile of Inhaled Copper-Nickel Welding Fumein A/J Mice*, 2022. **Inhalation Toxicology**. 34 (9-10), 275-286.

Afshari, A.A., McKinney, W., Cumpston, J.L., Leonard, H.D., Cumpston, J.B., Meighan, T.G., Jackson, M., Friend, S., Kodali, V., Lee, E.G. and Antonini, J.M., 2022. *Development of a thermal spray coating aerosol generator and inhalation exposure system*, 2022. **Toxicology Reports**.

Fraser, K., Hubb A, Yanamala, N., Mercer R, Stueckle T., Jensen J., Eye T., Battelli L., Clingerman S., Fluharty K., Dodd T., Casuccio, G., Bunker, K., Lersch, T.L., Kashon M., Orandle M., Dahm M., Kodali V., Erdely A., 2021. *Histopathology of the broad class of carbon nanotubes and nanofibers used or produced in U.S. facilities in a murine model.* **Particle and Fiber Toxicology**.

Majumder, N., Velayutham, M., Bitounis, D., Kodali, V.K., Mazumder, M.H.H., Amedro, J., Khramtsov, V.V., Erdely, A., Nurkiewicz, T., Demokritou, P. and Kelley, E.E., 2021. *Oxidized carbon black nanoparticles induce endothelial damage through CXC chemokine receptor 3-mediated pathway*. **Redox Biology**, 47, p.102161.

Majumder, N., Goldsmith, W.T., Kodali, V.K., Velayutham, M., Friend, S.A., Khramtsov, V.V., Nurkiewicz, T.R., Erdely, A., Zeidler-Erdely, P.C., Castranova, V. and Harkema, J.R., 2021. *Oxidant-induced epithelial alarmin pathway mediates lung inflammation and functional decline following ultrafine carbon and ozone inhalation co-exposure*. **Redox Biology**, 46, p.102092.

Fraser, K*., Kodali, V. *, Yanamala, N., Birch, M.E., Cena, L., Casuccio, G., Bunker, K., Lersch, T.L., Evans, D.E., Stefaniak, A. and Hammer, M.A., 2020. *Physicochemical characterization and genotoxicity of the broad class of carbon nanotubes and nanofibers used or produced in US facilities*. **Particle and Fiber Toxicology**, 17(1), pp.1-26.

Kodali, V., Shoeb, M., Meighan, T.G., Eye, T., Friend, S.A., Hubczak, J., Kashon, M.L., Zeidler-Erdely, P.C., Antonini, J.M. and Erdely, A., 2020. *Bioactivity of circulatory factors after pulmonary exposure to mild-and stainless-steel welding fumes*. **Toxicological Sciences**.

Russ, K.A., Thompson, J.A., Reynolds, J.S., Mercer, R.R., Porter, D.W., McKinney, W., Dey, R.D., Barger, M., Cumpston, J., Batchelor, T.P. and Kashon, M.L., 2020. *Biological effects of inhaled hydraulic fracturing sand dust. IV. Pulmonary effects*. **Toxicology and applied pharmacology**, 409, p.115284.

Anderson, S.E., Barger, M., Batchelor, T.P., Bowers, L.N., Coyle, J., Cumpston, A., Cumpston, J.L., Cumpston, J.B., Dey, R.D., Dozier, A.K. and Fedan, J.S., 2020. *Biological effects of inhaled hydraulic fracturing sand dust. IX. Summary and significance*. **Toxicology and applied pharmacology**, 2020, p.115330.

Xin, X., Barger, M., Roach, K.A., Bowers, L., Stefaniak, A.B., Kodali, V., Glassford, E., Dunn, K.L., Dunn, K.H., Wolfarth, M. and Friend, S., 2020. *Toxicity evaluation following pulmonary exposure to an as-manufactured dispersed boron nitride nanotube (BNNT) material in vivo*. **NanoImpact,** p.100235.

Boyce, G.R., Shoeb, M., Kodali, V., Meighan, T.G., Roach, K.A., McKinney, W., Stone, S., Powell, M.J., Roberts, J.R., Zeidler-Erdely, P.C. and Erdely, A., 2020. *Welding fume inhalation exposure and high-fat diet change lipid homeostasis in rat liver*. **Toxicology Reports**, 7, pp.1350-1355.

Boyce, G., Shoeb, M., Kodali, V., Meighan, T., Roberts, J.R., Erdely, A., Kashon, M. and Antonini, J.M., 2020. *Using liquid chromatography mass spectrometry (LC-MS) to assess the effect of age, high-fat diet, and rat strain on the liver metabolome*. **PloS one**, 15(7), p.e0235338.

Antonini, J.M., Kodali, V., Shoeb, M., Kashon, M., Roach, K.A., Boyce, G., Meighan, T., Stone, S., McKinney, W., Boots, T. and Roberts, J.R., 2019. *Effect of a high fat diet and occupational exposure in different rat strains on lung and systemic responses: examination of the exposome in an animal model*. **Toxicological Sciences**.

Shoeb, M., Mustafa, G.M., Kodali, V.K., Smith, K., Roach, K.A., Boyce, G., Meighan, T., Roberts, J.R., Erdely, A. and Antonini, J.M., 2020. *A possible relationship between telomere length and markers of neurodegeneration in rat brain after welding fume inhalation exposure*. **Environmental Research,** 180, p.108900.

Skovmand, A., Erdely, A., Antonini, J.M., Nurkiewicz, T.R., Shoeb, M., Eye, T., Kodali, V., Loeschner, K., Vidmar, J., Agerholm, J.S. and Goericke-Pesch, S., 2020. *Inhalation of welding fumes reduced sperm counts and*

high fat diet reduced testosterone levels; differential effects in Sprague Dawley and Brown Norway rats. **Particle and Fiber Toxicology,** 17(1), p.2.

Taylor-Just, A.J., Ihrie, M.D., Duke, K.S., Lee, H.Y., You, D.J., Hussain, S., Kodali, V.K., Ziemann, C., Creutzenberg, O., Vulpoi, A. and Turcu, F., 2020. *The pulmonary toxicity of carboxylated or aminated multi-walled carbon nanotubes in mice is determined by the prior purification method*. **Particle and Fiber Toxicology**, 17(1), pp.1-18.

Thrall, B. D., Kodali, V., Skerrett, S., Thomas, D. G., Frevert, C. W., Pounds, J. G., & Teeguarden, J. G. (2019). *Modulation of susceptibility to lung bacterial infection by engineered nanomaterials: In vitro and in vivo correspondence based on macrophage phagocytic function*. **NanoImpact**, 14, 100155.

Schubauer-Berigan, M.K., Dahm, M.M., Toennis, C.A., Sammons, D.L., Eye, T., Kodali, V., Zeidler-Erdely, P.C. and Erdely, A., 2020. *Association of occupational exposures with ex vivo functional immune response in workers handling carbon nanotubes and nanofibers*. **Nanotoxicology**, 14(3), pp.404-419.

Roach, K.A., Anderson, S.E., Stefaniak, A.B., Shane, H.L., Kodali, V., Kashon, M. and Roberts, J.R., 2019. *Surface area-and mass-based comparison of fine and ultrafine nickel oxide lung toxicity and augmentation of allergic response in an ovalbumin asthma model*. **Inhalation Toxicology**, 31(8), pp.299-324.

Antonini, J.M., Kodali, V., Meighan, T.G., Roach, K.A., Roberts, J.R., Salmen, R., Boyce, G.R., Zeidler-Erdely, P.C., Kashon, M., Erdely, A. and Shoeb, M., 2019. *Effect of age, high-fat diet, and rat strain on serum biomarkers and telomere length and global DNA methylation in peripheral blood mononuclear cells*. **Scientific Reports**, 9(1), pp.1-9.

Yanamala, N., Desai, I.C., Miller, W., Kodali, V.K., Syamlal, G., Roberts, J.R. and Erdely, A.D., 2019. *Grouping of carbonaceous nanomaterials based on association of patterns of inflammatory markers in BAL fluid with adverse outcomes in lungs*. **Nanotoxicology,** 13(8), pp.1102-1116.

Smith, J.N., Thomas, D.G., Jolley, H., Kodali, V.K., Littke, M.H., Munusamy, P., Baer, D.R., Gaffrey, M.J., Thrall, B.D. and Teeguarden, J.G., 2018. *All that is silver is not toxic: silver ion and particle kinetics reveals the role of silver ion aging and dosimetry on the toxicity of silver nanoparticles*. **Particle and Fiber Toxicology**, 15(1), pp.1-12.

Shoeb, M., Mustafa, G.M., Joseph, P., Umbright, C., Kodali, V., Roach, K.A., Meighan, T., Roberts, J.R., Erdely, A. and Antonini, J.M., 2019. *Initiation of pulmonary fibrosis after silica inhalation in rats is linked with dysfunctional shelterin complex and DNA damage response*. **Scientific Reports**, 9(1), pp.1-9.

Falcone, L.M., Erdely, A., Salmen, R., Keane, M., Battelli, L., Kodali, V., Bowers, L., Stefaniak, A.B., Kashon, M.L., Antonini, J.M. and Zeidler-Erdely, P.C., 2018. *Pulmonary toxicity and lung tumorigenic potential of surrogate metal oxides in gas metal arc welding–stainless steel fume: Iron as a primary mediator versus chromium and nickel*. **PloS one**, 13(12), p.e0209413.

Thomas, D.G., Smith, J.N., Thrall, B.D., Baer, D.R., Jolley, H., Munusamy, P., Kodali, V., Demokritou, P., Cohen, J. and Teeguarden, J.G., 2018. *ISD3: a particokinetic model for predicting the combined effects of particle sedimentation, diffusion and dissolution on cellular dosimetry for in vitro systems*. **Particle and Fiber Toxicology,** 15(1), pp.1-22.

Falcone, L.M., Erdely, A., Kodali, V., Salmen, R., Battelli, L.A., Dodd, T., McKinney, W., Stone, S., Donlin, M., Leonard, H.D. and Cumpston, J.L., 2018. *Inhalation of iron-abundant gas metal arc welding-mild steel fume promotes lung tumors in mice*. **Toxicology**, 409, pp.24-32.

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Zychowski, K.E., Kodali, V., Harmon, M., Tyler, C.R., Sanchez, B., Ordonez Suarez, Y., Herbert, G., Wheeler, A., Avasarala, S., Cerrato, J.M. and Kunda, N.K., 2018. *Respirable uranyl-vanadate-containing particulate matter derived from a legacy uranium mine site exhibits potentiated cardiopulmonary toxicity*. **Toxicological Sciences,** 164(1), pp.101-114.

Shoeb, M., Joseph, P., Kodali, V., Mustafa, G., Farris, B.Y., Umbright, C., Roberts, J.R., Erdely, A. and Antonini, J.M., 2017. *Silica inhalation altered telomere length and gene expression of telomere regulatory proteins in lung tissue of rats*. **Scientific Reports**, 7(1), pp.1-7.

Kodali, V.K., Roberts, J.R., Shoeb, M., Wolfarth, M.G., Bishop, L., Eye, T., Barger, M., Roach, K.A., Friend, S., Schwegler-Berry, D. and Chen, B.T., 2017. *Acute in vitro and in vivo toxicity of a commercial grade boron nitride nanotube mixture*. **Nanotoxicology**, 11(8), pp.1040-1058.

Yanamala, N., Orandle, M.S., Kodali, V.K., Bishop, L., Zeidler-Erdely, P.C., Roberts, J.R., Castranova, V. and Erdely, A., 2018. *Sparse Supervised Classification Methods Predict and Characterize Nanomaterial Exposures: Independent Markers of MWCNT Exposures*. **Toxicologic Pathology**, 46(1), pp.14-27.

Bishop, L., Cena, L., Orandle, M., Yanamala, N., Dahm, M.M., Birch, M.E., Evans, D.E., Kodali, V.K., Eye, T., Battelli, L. and Zeidler-Erdely, P.C., 2017. *In vivo toxicity assessment of occupational components of the carbon nanotube life cycle to provide context to potential health effects*. **ACS nano**, 11(9), pp.8849-8863.

Shoeb, M., Kodali, V., Farris, B., Bishop, L.M., Meighan, T., Salmen, R., Eye, T., Roberts, J.R., Zeidler-Erdely, P., Erdely, A. and Antonini, J.M., 2017. *Evaluation of the molecular mechanisms associated with cytotoxicity and inflammation after pulmonary exposure to different metal-rich welding particles*. **Nanotoxicology**, 11(6), pp.725-736.

Shoeb, M., Kodali, V.K., Farris, B.Y., Bishop, L.M., Meighan, T.G., Salmen, R., Eye, T., Friend, S., Schwegler-Berry, D., Roberts, J.R. and Zeidler-Erdely, P.C., 2017. *Oxidative stress, DNA methylation, and telomere length changes in peripheral blood mononuclear cells after pulmonary exposure to metal-rich welding nanoparticles*. **NanoImpact,** 5, pp.61-69.

Roberts, J.R., Mercer, R.R., Stefaniak, A.B., Seehra, M.S., Geddam, U.K., Chaudhuri, I.S., Kyrlidis, A., Kodali, V.K., Sager, T., Kenyon, A. and Bilgesu, S.A., 2015. *Evaluation of pulmonary and systemic toxicity following lung exposure to graphite nanoplates: a member of the graphene-based nanomaterial family*. **Particle and Fiber Toxicology**, 13(1), p.34.

Aragon, M., Erdely, A., Bishop, L., Salmen, R., Weaver, J., Liu, J., Hall, P., Eye, T., Kodali, V., Zeidler-Erdely, P. and Stafflinger, J.E., 2016. *MMP-9-dependent serum-borne bioactivity caused by multiwalled carbon nanotube exposure induces vascular dysfunction via the CD36 scavenger receptor*. **Toxicological Sciences**, 150(2), pp.488-498.

Duan, J., Kodali, V.K., Gaffrey, M.J., Guo, J., Chu, R.K., Camp, D.G., Smith, R.D., Thrall, B.D. and Qian, W.J., 2016. *Quantitative profiling of protein S-glutathionylation reveals redox-dependent regulation of macrophage function during nanoparticle-induced oxidative stress*. **ACS Nano**, 10(1), pp.524-538.

Munusamy, P., Wang, C., Engelhard, M.H., Baer, D.R., Smith, J.N., Liu, C., Kodali, V., Thrall, B.D., Chen, S., Porter, A.E. and Ryan, M.P., 2015. *Comparison of 20 nm silver nanoparticles synthesized with and without a gold core: Structure, dissolution in cell culture media, and biological impact on macrophages*. **Biointerphases**, 10(3), p.031003.

Wiedner, S.D., Anderson, L.N., Sadler, N.C., Chrisler, W.B., Kodali, V.K., Smith, R.D. and Wright, A.T., 2014. Organelle-Specific Activity-Based Protein Profiling in Living Cells. **Angewandte Chemie**, 126(11), pp.2963-2966.

Sharma, G., Kodali, V., Gaffrey, M., Wang, W., Minard, K.R., Karin, N.J., Teeguarden, J.G. and Thrall, B.D., 2014. *Iron oxide nanoparticle agglomeration influences dose rates and modulates oxidative stress-mediated dose–response profiles in vitro*. **Nanotoxicology**, 8(6), pp.663-675.

Kodali, V., Littke, M.H., Tilton, S.C., Teeguarden, J.G., Shi, L., Frevert, C.W., Wang, W., Pounds, J.G. and Thrall, B.D., 2013. *Dysregulation of macrophage activation profiles by engineered nanoparticles*. **ACS nano**, 7(8), pp.6997-7010.

Carroll, K.M., Giordano, A.J., Wang, D., Kodali, V.K., Scrimgeour, J., King, W.P., Marder, S.R., Riedo, E. and Curtis, J.E., 2013. *Fabricating nanoscale chemical gradients with thermochemical nanolithography*. **Langmuir**, 29(27), pp.8675-8682.

Karakoti, A.S., Munusamy, P., Hostetler, K., Kodali, V., Kuchibhatla, S., Orr, G., Pounds, J.G., Teeguarden, J.G., Thrall, B.D. and Baer, D.R., 2012. *Preparation and characterization challenges to understanding environmental and biological impacts of ceria nanoparticles*. **Surface and Interface Analysis**, 44(8), pp.882-889.

Kodali, V.K., Scrimgeour, J., Kim, S., Hankinson, J.H., Carroll, K.M., De Heer, W.A., Berger, C. and Curtis, J.E., 2011. Nonperturbative chemical modification of graphene for protein micropatterning. **Langmuir**, 27(3), pp.863-865.

Scrimgeour, J., Kodali, V.K., Kovari, D.T. and Curtis, J.E., 2010. Photobleaching-activated micropatterning on self-assembled monolayers. **Journal of Physics: Condensed Matter**, 22(19), p.194103.

Wang, D., Kodali, V.K., Underwood II, W.D., Jarvholm, J.E., Okada, T., Jones, S.C., Rumi, M., Dai, Z., King, W.P., Marder, S.R. and Curtis, J.E., 2009. *Thermochemical Nanolithography of Multifunctional Nanotemplates for Assembling Nano-Objects*. **Advanced Functional Materials**, 19(23), pp.3696-3702.

Kodali, V.K., Roos, W., Spatz, J.P. and Curtis, J.E., 2007. *Cell-assisted assembly of colloidal crystallites*. **Soft Matter**, 3(3), pp.337-348.

CONFERENCE PROCEEDINGS, PRESENTATIONS & POSTERS

*** A COMPLETE LIST OF MORE THAN 250 NATIONAL AND INTERNATIONAL PRESENTATIONS CAN BE PROVIDED ON REQUEST.**

HONORS & AWARDS

- 2022 **'2021 Best Paper of the Year'**, Particle and Fibre Toxicology Journal.
- 2021 **Alice Hamilton Award**, Methods and Laboratory Science (Honorable Mention).
- 2020 **CDC/ATSDR Honor Award** for Excellence in Laboratory Research**.**
- 2019 **Alice Hamilton Award**, Epidemiology and Surveillance. NIOSH Annual Science Awards.
- 2019 NIOSH Nominee **CDC/ATSDR Charles C. Shepard Science Award**.
- 2018 **Alice Hamilton Award**, Methods and Laboratory Science. NIOSH Annual Science Awards.
- 2016 8th International Nanotoxicology Congress, Boston "***Bergeson & Campbell, P.C. Poster Award***".
- 2016 Allegheny-Erie Society of Toxicology "***Best Poster Award***".
- 2012 Society of Toxicology's "***Outstanding Postdoctoral award***" Nanotoxicology Specialty Section.
- Nominated IEEE Senior Member.
- Guest Editor for Nanotoxicology Special Edition in Nanolife Journal.

RESEARCH SUPPORT

- Project Title: Genotoxicity and tumorigenic potential of carbon nanotubes and fibers. (2019 – 2024).
  - **Funding** National Occupational Research Agenda (**NORA**)
  - **Role: PI**
- Project Title: Toxicity along the life cycle of a MWCNT-reinforced construction composite. (2019 – 2022).
  - **Funding** NIOSH Nanotechnology Research Center (**NTRC**)
  - **Role: PI**
- Project Title: Occupational and environmental co-exposures: prospects of novel lung pathologies and susceptibilities (2018-2019).
  - **Funding** West Virginia Clinical and Translational Science Institute (**WVCTSI**)
  - **Role: Co-PI**, PI Hussain, Salik.
- Project Title: Toxicity of MWCNT used as an additive to concrete (2018 – 2019).
  - **Funding** NIOSH Nanotechnology Research Center (**NTRC**)
  - **Role: PI**
- Project Title: Health risk evaluation of nano-enabled materials in construction. (2021 – 2025).
  - **Funding** National Occupational Research Agenda (**NORA**)
  - **Role: Investigator,** PI Erdely, Aaron
- Project Title: Influence of Heat and Humidity on the Neurologic and Pulmonary Effects of Welding. (2019 – 2020).
  - **Funding** NIOSH Center for Maritime Safety and Health **(NORA)**
  - **Role: Investigator,** PI Sriram, Krishnan

- Project Title: Physicochemical characteristic dependent in vitro toxicity screening of emerging two-dimensional (2D) nanomaterials. (2019 – 2020).
    - **Funding** NIOSH Nanotechnology Research Center (**NTRC**)
    - **Role: Investigator,** PI Xing, Xin
- Project Title: Health Effects of Mixed Metal Exposures. (2020 – 2023).
    - **Funding** National Occupational Research Agenda (**NORA**)
    - **Role: Investigator,** PI Erdely, Patti
- Project Title: Small Molecule Markers for Nanomaterial Exposure. (2020 – 2023).
    - **Funding** NIOSH Nanotechnology Research Center (**NTRC**)
    - **Role: Investigator,** PI Boyce, Gregory
- Project Title: Crosstalk Between Telomere Length Homeostasis & Welding Fume-Induced Tumorigenesis. (2020 – 2023).
    - **Funding** National Occupational Research Agenda (**NORA**)
    - **Role: Investigator,** PI Shoeb, Mohammad
- Project Title: Characterization and Health Effects of Aerosols from Thermal Spray Coating (2018-2021).
    - **Funding** National Occupational Research Agenda (**NORA**)
    - **Role: Investigator**, PI Antonini, James M.
- Project Title: Toxicological Evaluation of Pulmonary Exposure to Boron Nitride Nanotubes (2017-2019)
    - **Funding** NIOSH Nanotechnology Research Center (**NTRC**)
    - **Role: Investigator**, PI Roberts, Jenny R.

10/15/2003

CURRICULUM VITAE

Ping Lee

BORN: April 17, 1936; Sumatra CITIZENSHIP: U.S.A.

ADDRESSES:

Office: Department of Physiology,
West Virginia University Medical Center
Morgantown, West Virginia 26506
Phone: 304-293-1509 FAX: 304-293-3850
Email:plee@hsc.wvu.edu

Home: 1316 Winona Avenue,
Morgantown, WV 26505
Phone: 304-599-3684

EDUCATION:

Senior Cambridge Exam Grade I Certificate, 1953
Chung Ling High School, Penang, Malaysia, 1954
B.S. National Taiwan University, Taipei, Taiwan, 1959
M.S., Duke University, Durham, N.C., 1961
Ph.D., Duke University, Durham, N.C., 1964
Post Doctoral Training, Duke University Medical Center, Durham,N.C. 1964-68

SOCIETIES:

1. Biophysical Society
2. American Physiological Society
3. Red Cell Club

PRESENT POSITION:

Professor, Physiology, 1977-present

FIELDS OF RESEARCH INTERESTS:

Membrane Transport - Distribution of Na,K-ATPase α and ß Subunits in Cells
Regulation of Membrane Transport Maturation During Erythropoiesis
Application of X-Ray Microanalysis to Biomedical Sciences
Physiology of the Kidney and Body Fluid
Metabolism of Alveolar Macrophages

EXPERIENCE:

Professor, Department of Physiology, 1977-present
Interim Chair, Physiology, WVU Health Sciences Center, 1990-1994
Visiting Professor, Institute of Biomedical Sciences, Academia Sinica
Taiwan, R.O.C. February-August, 1990.
Assistant Chairman, Physiology, 1977-90
Acting Chairman, Physiology, 1983/April to September
Acting Chairman, Physiology, 1976-77
Assistant Chairman, Physiology, 1974-76
Associate Professor, West Virginia University Medical Center, 1972-77
Assistant Professor, Physiology & Biophysics, WVU Medical Center, 1968-72
Instructor, Physiology, Duke University Medical Center, 1966-68
Visiting Associate Professor, North Carolina College (Biology), 1965-67
Research Associate, Duke University Medical Center (Physiology), 1964-66
Teaching-Research Assistant, Duke University (Zoology), 1964-64
Research Assistant, Duke University (Zoology), 1962-63
Physiology Trainee, Duke University, 1959-62

HONORS:

Chinese Natural Science Award, 1957
USPS Physiology Traineeship, 1959-62
National Academy of Sciences (USA) Travel Award, 1969
Nominated by First Year Medical Class for Outstanding Teacher Award, 1976
Distinguished Service Award, Association of Chinese Professionals in
West Virginia, 1985

RESEARCH GRANTS:

1. NIH Individual Research Grant: Erythrocytes during Early Development,
1970-73--$65,490;
1973-76--$103,110;
1976-1980--$104,802
2. West Virginia University Senate Research Grant: Differentiation and Membrane Transport Properties of Red Blood Cells, 1970-71
3. West Virginia Heart Association Research Grant: Blood Volume, Red Cell Production and Destruction in Newborn Puppies, 1969-70
4. Energy Research Development Agency Grant: Effect of Fly Ash on Alveolar Macrophages 1977-78
5. DOE Grant: Effects of coal combustion by-products on the metabolism of dog alveolar macrophages $135,000 1979 to 1983.
6. West Virginia University Medical Corporation Grant: Rubidium Transport in Single Erythroid cells, 1983-1984
7. NSF Research Grant: Ion Transport in Single Cells ($225,000; 1986-1989)
8. NSF Research Grant: Ion Transport in Single Cells ($245,500; 1989-1993)
9. WVU School of Medicine BSRG: Subunit of Na,K-APTase in Erythroblasts at Different Stages of Maturation ($7,000; 1995-1996)
10 NSF Research Grant: Ion Transport in Single Cells ($255,000; 1993-1998)

NSF Research Grant: Ion Transport in Single Cells ($255,000; 2000-2003;
(Renewal, not funded)

TEACHING: Past and Present*

1. Medical Physiology - to medical and graduate students
*2. Advanced Renal Physiology - to graduate students
3. Cellular Biophysics - to graduate students
4. Radiation Safety and Tracer Technique (participate in teaching this combined course for graduate students, technicians and undergraduate seniors)
5. Graduate Seminar
6. Physiological Methodology
*7. Human Function Course- Body Fluid Physiology -medical students
*8. Advanced Renal Physiology
9. Graudate Physiology and Pharmacology- Cell, Body Fluid and Renal Physiology, - graduate students.
10. Physiology Enrichment - graduate students
*11. PBL – medical students

DOCTORAL STUDENTS:

1. P.R. Miles - Ph.D. 1971
2. Robert B. Zeidler - Ph.D. 1974
3. Jane E. Grey - Ph.D. 1976
4. Chun Shia Chang - Ph.D. 1996

THESIS AND EXAMINATION COMMITTEES:

DOCTORAL:

1. P.R. Miles - Physiology and Biophysics
2. Michael Mawhinney - Pharmacology
3. Robert B. Zeidler - Physiology and Biophysics
4. Vincent Castranova - Physiology and Biophysics
5. Edward D. Kota - Agricultural Biochemistry
6. Denis Kota - Agricultural Biochemistry
7. C. Richard Truex - Agricultural Biochemistry
8. Jane E. Grey - Physiology and Biophysics
9. Jack Greiner - Physiology and Biophysics
10. Robert Kramer - Physiology and Biophysics
11. Jerry Farley - Physiology and Biophysics
12. Terry Sweeny - Physiology
13. Jo-Rae Wright - Physiology
14. George Jones - Physiology
15. John Watkin - Animal Science
16. Michael VanScott - Physiology
17. Carol Weaver - Physiology
18. Ji-Hee Kang - Physiology
19. Alisa Suvannapura - Physiology
20. Dale Porter - Animal Science
21. Yao Hua Sheng - Pharmacology
22. Richard Reist – Physiologogy
23. Oguz Bayraktar – Chemical Engineering

*24. Patti Zeidler (graduation, spring 2003)
*25. Rania Kanz (projected graduation, 2003)
*26. Jenny R. Roberts
*27. Amanda Lee (Doctor of Music)
*28. Christine Tan (Doctor of Music)

MASTER:

1. Joan Hsih - Pharmacy
2. Gary Marano - Chemical Engineering
3. James T.C. Yang - Animal Science
4. Lynn Turic - Agricultural Biochemistry
5. Ted McClain - Physiology
6. Jimmy C.M. Liu - Physiology
7. Nancy Delaney - Agricultural Biochemistry
8. Jeffrey Anderson - Agricultural Biochemistry
9. Dale Porter
10. Maria Gutierrez-Physiology
11. Oguz Bayraktar-Chemical Engineering
*12 Jim Scabilloni (projected graduation, 2004)

DEPARTMENTAL COMMITTEES:

1. Faculty Recruitment Committee - 1973-74
2. Promotion and Tenure Committee - 1974 to 1976
3. Graduate Studies Committee - 1976 to 78

SCHOOL OF MEDICINE COMMITTEE:

1. Committee for Faculty Travel Support and Visiting Speaker - 1975 to 1976
2. Anatomy Academic Review Committee
3. Microbiology Academic Review Committee - 1986 to 1987
4. Executive Faculty
5. Research Advisory Council

MEDICAL CENTER COMMITTEE:

1. Committee for Non-human Use of Radioisotope - 1975-1999, Chair 1993-1999.

UNIVERSITY-WIDE COMMITTEE:

1. Radiological Safety Committee - 1993 to 1999
*2. Faculty Advisor - Malaysian Students Association, WVU, 1993-present
3. Faculty Advisor – Chinese Students Association, WVU, 1985-2000

EXTRAMURAL ACTIVITIES:

1. Committee on Public Affairs - American Physiological Society, 1974 to 1979
2. National Correspondent - Federation of American Societies of Experimental Biology, 1974 to 1980
3. Reviewer of Research Grant Application; Regulatory Biology Section, National Science Foundation 1999

4. Reviewing Referee for the Journal of General Physiology
5. Chairing of FASEB session, 1978
6. Reviewer for the American Journal of Physiology
7. West Virginia Heart Association Research Committee - 1977 to 1980
8. Association of Chinese Professionals in West Virginia, president, 1981 to 1983
9. External Grant Reviewer for the Institute of Biomedical Sciences, Academia Sinica, Taipei
10. Reviewer for Life Sciences
11. Reviewer for Journal of Cell Physiology
12. Consulting Trip to Taipei to help set up the x-ray microanalysis facility at the Institute of Biomedical Sciences, November, 1988
13. Sabbatical Leave, February-August, 1990, Institute of Biomedical Sciences, Academia Sinica, research and train students in cryomicrotomy and x-ray microanalysis
14. Held work-shop on X-ray microanalysis: Application in Biomedical Sciences, 1990, co-sponsored by the National Research Council and the Institute of Biomedical Sciences, Academia Sinica, Taiwan, ROC
15. Invited by State Pharmaceutical Adminstration of China to lecture in Guangzhou, Shanghai and Beijing, 1993
16. Collaborate in membrane transport research with Dr. H. D. Kim of the Department of Pharmacology, University of Missourri.
17. Invited by the Food and Pharmaceutical Adminstration of Taiwan to give a talk in a symposium celebrating the 15th. anniversary of the establishment of the organization, September, 1993

*18. International editor - Chinese Journal of Physiology (Taipei, ROC) 1996-present

*19. Member of Review Subcommittee on Medical Sciences, National Health Reseach Institute, Taiwan, ROC, 1992-present

MANUSCRIPTS

Plasma membrane leakage during erythroblast denucleation.
(Chang, C. S., A. Provance, R. Gary Kirk*, and P. Lee, completed, will be sent to Journal of Electron Microscopy)

Long term treatment with digitalis and subunit isoform changes in heart, kidney and erythroid tissue.
(Chun Shia Chang and Ping Lee, in preparation)

Presence of iron in the nuclei of erythrblastic cells during maturation.
(Lee, P., C. S. Chang, and A. Provance, manuscript in preparation)

PUBLICATIONS

Schmidt-Nielsen, K. and Ping Lee. 1962. Kidney function in the crab-eating frog, Rana Cancrivora. J. Expt. Biol. 39: 167-177.

Schmidt-Nielsen, Arieh Borut, Ping Lee and E. Crawford, Jr. 1963. Nasal salt excretion and the possible function of the cloaca in water conservation. Sci. 142: 1300-1301.

Lee, Ping. 1964. Water balance in the Zebra Finch.
Duke University Dissertation.

Lee, Ping, Anna Woo and D.C. Tosteson. 1966. Cytodifferentiation and membrane transport properties in LK sheep red cells. J. Gen. Physiol. 50: 379-390.

Lee, Ping and K. Schmidt-Nielsen. 1971. Respiratory and cutaneous evaporation in the Zebra Finch: effect on water balance. Am. J. Physiol. 220: 1598-1605.

Miles, P.R., and Ping Lee. Sodium and potassium content and membrane transport properties in red blood cells from newborn puppies. J. Cell. Physiol. 79: 367-376, 1972.

Lee, Ping, and P.R. Miles. Density distribution and cation composition of red blood cells in newborn puppies. J. Cell. Physiol. 79: 377-382, 1972.

Lee, Ping and P.R. Miles. K and Na transport in erythrocytes of newborn puppies. In Book: Erythroicytes, Thrombocytes and Leukocytes. Ed. by E. Gerlach, M. Moser, E. Deutch and W. Wilmanns. George Thieme Publishers. p. 105-108, 1973.

Zeidler, Robert B., Ping Lee and H.D. Kim. Kinetics of 3-0-methyl-glucose transport in red blood cells of newborn pigs. J. Gen. Physiol. 67: 67-80, 1976.

Lee, Ping, M.E. Brown, and P.T. Hutzler. Blood volume changes and turnover of red cell volume in newborn dogs. Am. J. of Vet. Res. 37(5): 561-565, 1976.

Miles, P.R., Ping Lee, M. Trush, Knox Van Dyke. Chemoluminescence associated with phagoantosis of foreign particles in rabbit alveolar macrophages. Life Sci. 20: 165-170, 1977.

Miles, P.R., P. Lee, L. Bleigh, and T. Sweeney. Characterization of chemiluminescence associated with phagocytosis in rabbit alveolar macrophages. Biophys. J. 17: 165, 1977.

Miles, P.R., V. Castranova, L. Bleigh and P. Lee. The effect of inorganic phosphate on sodium fluxes in dog red blood cells. BAA, 471: 105-110, 1977.

Miles, P.R., V. Castranova and P. Lee. Reactive forms of oxygen and chemiluminescence in phago cytizing alveolar macrophages. Am. J. Physiology 235(3): C103-C108, 1978
or Am. J. Physiol.: Cell Physiol. 4(2): C103-C108, 1978.

Howard, Stephen A., John Mauger, A. Khwangsopaj, and P. Lee. Separation of multisize drug suspensions into narrow distributions by centrifugal elutriation. J. Pharmaceutics Sci. 67(5): 673-675, 1978.

Kirk, R. Gary and Ping Lee. X-ray microanalysis of cation and hemoglobin contents in red blood

cells. Microscopica Acta. Suppl. 2: 103-112, 1978.
Kirk, R. Gary, Ping Lee and D.C. Tosteson. Electron probe microanalysis of red blood cells II. Cation changes during maturation. Am. J. Physiol. 235: C251-C255, 1978.
Kirk, R. Gary, Ping Lee, T.G. Duplinsky and D.C. Tosteson. X-ray microanalysis of red blood cells. In: Biological X-ray Microanalysis pp. 299-316. Ed. By C. Lechne and R. Warner. Acad. Press., 1979.
Kirk, R. Gary and Ping Lee. Elemental concentration determination in single erythrocytes. In: Microanalysis of Biological Systems. Ed. T. Hutchinson and A.P. Smlyo. Academic Pres. 1981.
Lee, Ping, R. Gary Kirk. A study of maturation of membrane transport function in red blood cells by x-ray microanalysis. J. Memb. Biol., 67: 103-111, 1982.
Kirk, R. Gary, S. Brian Andrews and Ping Lee. An x-ray microanalysis study of high and low potassium transition in erythroid cells. In: is Advances in Techniques and Applications of the Scanning Electron Microscope II: 793-800, 1983.
Kirk, R. Gary, S.B. Anderews and Ping Lee. X-ray microanalysis study of rubidium uptake in single erythroid cells. In: Physical Methods in the Study of Biophysical Systems. Eds. M.A. Dinmo, A.B. Calkhan and P.C. Rozzell. Pub. A.R. Liss, N.Y., 133-139, 1983.
Kirk, R. Gary, S. Brian Andrews and Ping Lee. The correlation of composition and morphology during high to low potassium transition in single erythropoietic cells. J. Memb. Biol. 76: 281-287, 1983.
Lee, Ping, R. Gary Kirk and Joseph F. Hoffman. Interrelations among Na and K content, cell volume and buoyant density in human red blood cell populations. J. Memb. Biol. 79: 119-126, 1984.
Kirk, R. Gary, S. Brian Andrews and Ping Lee. Rubidium uptake in single bone marrow cells. J. Memb. Biol. 82: 137-143. 1984.
Castranova, V., P. Lee and P.R. Miles. Chemiluminescence from macrophages and monocytes. In: Cellular Chemiluminescence ed. K. Van Dyke and V. Castranova, vol. 2, pp. 3-19. CRC Press, Boca Raton, Florida, 1987.
Lee, P., E.R. Walker, P.R. Miles and V. Castranova. Differential generation of chemiluminescence from various cellular fractions obtained by dog lung lavage. In: Cellular Chemiluminescence. ed. K. Van Dyke and V. Castranova, vol. 3, pp. 53-60. CRC Press, Boca Raton, Florida, 1987.
Kirk, R. Gary and Ping Lee. Anion transport during maturation of erythroblastic cells. J. Memb. Biol. 101: 173-178, 1988.
Lee, Ping, Zuguang Ye, Knox Van Dyke and R. Gary Kirk. X-ray microanalysis of plasmodium falciparum and infected red blood cells: Effects of qinghaosu and chloroquine on potassium, sodium and phosphorus composition. Am. J. Trop. Med. Hyg. 39(2): 157-165, 1988.
Kirk, R. Gary, Mark J. Reasor and Ping Lee. Iodine in rat alveolar macrophages following amiodarone treatment: quantitative x-ray microanalysis. Expt. and Mol. Path. 49: 339-347, 1988.
Kirk, R.G., M.J. Reasor and P. Lee. Drug distribution in cells using x-ray microanalysis. In: Microbeam Analysis. ed. Phillip E. Russell, p. 31-34, 1989 (refereed paper).
Kirk, R. Gary, Ping Lee and Mark J. Reasor. Quantitative x-ray microanlysis of alveolar macrohages after long term treatment with amiodarone. Expt. and Mol. Path. 52: 122-131, 1989).
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ABSTRACTS

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Kirk, R. Gary, Michael Gates and Ping Lee. Distribution of cisplatin in bone marrow cells. Proc. 14th. Annual Symposium on Advances in Microscopy. Duke University Medical Center, 1995.

Chang, Chun Shia, R. Gary Kirk and Ping Lee. Immunolabeling of a3 isoforms of Na,K-ATPase trapped in endoplasmic reticulum of reticulocyte. FASEB J., 1996.

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Chang, Chun Shia, Ping Lee and R. Gary Kirk. Presence of immunoreactive α3 isoform of Na,K-ATPase in mitochondria of renal tubular cells. FESAB J. 11(3):A227, 1997.

Chang, C.S., R. G. Kirk and P. Lee. Distribution of isoforms of the α subunit of Na,K-ATPase in renal tubular cells. FESAB J. 12(5), Pt. II:A1020, 1998.

Chang, C.S., R. G. Kirk and P. Lee. Abundance of immunoreactive αß complexes of Na,K-ATPase in erythroblastic cells during maturation. FESAB J. 13(4), Pt. I:A403, 1999.

Chang, C. S., Aaron Provance, R. G. Kirk and P. Lee. Does membrane leakage to sodium occur during nucleation of erythroblast to form reticulocyte? FASEB J. 14(4):A104, 2000.

Chang, C. S., A. Provance, and P. Lee. Permeability of nuclear membrane to hemoglobin in erythroid cells. (FASEB J. 15 (4):A436. 2001.

Chang, Chun Shia, Ping Lee. Are α subunits of Na,K-ATPase over expressed relative to β subunits in maturing reticulocytes? FASEB J. 16(4): A467, 2002.

CURRICULUM VITAE

Scott P. Levick, PhD, FAHA

Associate Professor
Department of Physiology, Pharmacology and Toxicology
West Virginia University

DATE: 3/1/2023

OFFICE ADDRESS: Department of Physiology, Pharmacology and Toxicology
West Virginia University
Morgantown, WV, 26506

PHONE: +1 304-293-2418

E-MAIL: scott.levick@hsc.wvu.edu

CURRENT POSITION: Associate Professor

PLACE OF BIRTH: Australia

CITIZENSHIP: Australia/USA Permanent Resident

H-INDEX: 23

EDUCATION

2/25/1997 - 12/1/2001 BAppS, University of Queensland, Brisbane, Australia
2/1/2002 - 7/12/2005 PhD, University of Queensland, Brisbane, Australia

POSTGRADUATE/POSTDOCTORAL TRAINING

8/16/2005 - 1/31/2010 Postdoctoral Fellow, Cell Biology & Anatomy, University of South Carolina School of Medicine, Columbia, SC (Mentor: Joseph S. Janicki, PhD)

CURRENT ACADEMIC APPOINTMENTS

8/16/2017 – Present Adjunct Associate Professor, Pharmacology & Toxicology, Medical College of Wisconsin, Milwaukee, WI
1/15/2022 – Present Associate Professor, Physiology Pharmacology and Toxicology, West Virginia University, Morgantown, WV

PREVIOUS ACADEMIC APPOINTMENTS

2/1/2010 - 6/30/2011 Research Assistant Professor, Cell Biology & Anatomy, University of South Carolina School of Medicine, Columbia, SC
7/1/2011 – 6/30/2017 Assistant Professor, Pharmacology & Toxicology, Cardiovascular Center, Medical College of Wisconsin, Milwaukee, WI
7/1/2017 – 7/31/2017 Associate Professor, Pharmacology & Toxicology, Cardiovascular Center, Medical College of Wisconsin, Milwaukee, WI
8/1/2017 – 2/1/2022 Associate Professor, George and Mary Thompson Fellow, Department of Cardiology, Royal North Shore Hospital, Kolling Institute for Medical Research, University of Sydney, Sydney, Australia
1/2/2018 – 1/1/2021 Honorary Associate, Discipline of Physiology, Sydney Medical School, University of Sydney, Australia

AWARDS AND HONORS

2001	Vacation Scholarship, Australian National Heart Association
2001	BAppSc, First Class Honors
2002 – 2005	Australian Postgraduate Scholarship
2004	Faculty of Biological and Chemical Sciences Travel Award, University of Queensland
2005	Dean's Commendation Award for PhD Dissertation, University of Queensland
2007	Postdoctoral Teacher Training Program Award, National Science Foundation-Experimental Program to Stimulate Competitive Research (EPSCoR)
2008 – 2010	American Heart Association Postdoctoral Fellowship
2009	American Physiological Society Cardiovascular Section Research Award for Meritorious Research by a Young Investigator
2012	Competitively selected as Medical College of Wisconsin representative to apply to the Searle Scholars Program
2014	Outstanding Medical Student Teacher Award – Physician Scientist Pathway (Medical College of Wisconsin)
2015 – 2017	Medical College of Wisconsin Presidential Faculty Scholar Award
2016	Elected Fellow of the American Heart Association
2016	Outstanding Medical Student Teacher – M2 Gastrointestinal Nutrition Unit (Medical College of Wisconsin)
2017	The American Physiological Society Cardiovascular Section New Investigator Award
2020	*Heart, Lung and Circulation* Cardiovascular Science Award (for most outstanding original research article published in a 2019 volume of the journal)

PROFESSIONAL SOCIETIES

2001 – 2004	International Society for Heart Research (Member – Australasian Section)
2007 – Present	American Physiological Society (Member – Cardiovascular Section)
2008 – Present	American Heart Association (Fellow – Basic Science Council)
2012 – 2017	International Society for Heart Research (Member – North American Section)
2018 – 2021	International Society for Heart Research (Member – Australasian Section)
2018 – 2021	American Society for Matrix Biology (Member)

INSTITUTIONAL COMMITTEES

Medical College of Wisconsin

2012	Interdisciplinary Program (IDP) Graduate Student admission interviews
2012 - 2013	Judge for Graduate School of Biomedical Sciences Poster Session
2013 – 2017	Poster judge for MCW Research Day
2014 – 2017	Physician Scientist Research Pathway Advisory Council – strategic planning for the Physician Scientist Pathway curriculum
2015	Interdisciplinary Program (IDP) Graduate Student admission interviews
2015 – 2017	Judge for Graduate School of Biomedical Sciences Poster Session
2015 – 2017	Co-Director, Department of Pharmacology and Toxicology Seminar Series, Medical College of Wisconsin
2016 – 2017	Director, Cardiovascular Center Seminar Series, Medical College of Wisconsin
2016 – 2017	Department of Pharmacology liaison for the Office of Global Health
2017	Cardiovascular Center "Pre-Program Project Grants" Review Committee

University of Sydney/Kolling Institute

2017	Assessor for Milestone 4 for Medical Students (Sydney Medical School/Royal North Shore Hospital)
2017	Cardiology Fellow Interview Committee, Royal North Shore Hospital

2017 – 2022	Department of Cardiology Research Strategy Committee – research planning and co-ordination within the Department including clinical trials and equipment fund spending
2018	Ramsay Research and Teaching Fund Grant Review Panel, Royal North Shore Hospital
2018	Kolling Institute Level 12 Floor Meeting (Chair) – floor related issues including workplace health and safety, resource utilization, personnel issues between research groups
2019	Honour's Thesis Reviewer, The University of Sydney, Department of Physiology
2020	Reviewer, Great Australasian Undergraduate Research Writing Project, Australian Council for Undergraduate Research
2020 – 2022	Cardiovascular and Renal Priority Research Area Strategic Planning Committee – responsible for developing and implementing initiatives in the cardiovascular and renal fields to advance research, clinical impact, and reputation of these fields to meet the aims of the Kolling Institute Research Strategy. This includes: 1) prioritizing cardiovascular and renal area needs; 2) identifying and facilitating appropriate funding opportunities for large scale initiatives; and 3) building relationships and collaborations with internal/external stakeholders including industry, consumer groups, and the wider community.
2020 – 2022	Research Infrastructure and Support Services Strategic Planning Committee - responsible for the leadership, strategic direction and facilitation of the removal of barriers to high quality research within the Kolling Institute. This includes: 1) implementing an infrastructure roadmap to assess the current state and inform future need; 2) development of, and linkage to state of the art tissue repository and biobanking facilities; and 3) facilitating career development training.

West Virginia University

2022 - 2023	Department of Physiology, Pharmacology and Toxicology Search Committee for Tenure-track, Open rank Scientist
2022 - Present	Department of Physiology, Pharmacology and Toxicology Foundation Award Committee (Chair)

EDITORSHIPS/EDITORIAL BOARDS

Editorship

2017 – 2018	Guest Associate Editor, "Neuropeptides as Central Mediators of Cardiovascular Disease", *Frontiers in Physiology*
2018 – 2021	Associate Editor, *BMC Cardiovascular Disorders*
2020	Special Issue Editor, "Mast Cells and Fibrosis", *International Journal of Molecular Sciences*
2020 – Present	Associate Editor, *International Journal of Molecular Sciences*
2021 – Present	Associate Editor, *Frontiers in Physiology* – Vascular Physiology Section
2022	Special Issue Editor, "The Role of Fibroblasts in Acute and Chronic Inflammatory Processes", *Cells*

Editorial Boards

2018 – Present	BMC Cardiovascular Disorders
2019 – Present	Heart, Lung and Circulation
2019 – Present	Frontiers in Physiology – Cardio oncology Section
2019 – Present	Frontiers in Cardiovascular Medicine
2022 – Present	Frontiers in Physiology – Striated Muscle Physiology Section

AD HOC REVIEWER

Journal of the American College of Cardiology: CardioOncology
Circulation
Hypertension
FASEB Journal
Journal of Molecular and Cellular Cardiology (Recognized as an "Outstanding Reviewer", 2016)
Journal of Pharmacology and Experimental Therapeutics
Basic Research in Cardiology

International Journal of Cardiology
Cardiology
American Journal of Physiology: Heart & Circulatory Physiology
Kidney & Blood Pressure Research
Clinical & Experimental Immunology
Journal of Cardiovascular Pharmacology
Journal of Proteomics
Journal of Immunology
Regulatory Peptides
International Journal of Cardiology: Heart & Vessels
Canadian Journal of Diabetes
PloS ONE
Frontiers in Physiology
Drug Design, Development and Therapy
Neuropeptides
AJP: Regulatory, Integrative and Comparative Physiology
Biomed Research International
Cellular and Molecular Life Sciences
Heart, Lung, & Circulation (Recognized as an "Outstanding Reviewer", 2017)
Experimental and Molecular Pathology
Prostaglandins & Other Lipid Mediators (Recognized as an "Outstanding Reviewer", 2016)
Cancer Biomarkers
European Journal of Pharmacology (Recognized as an "Outstanding Reviewer", 2017, 2018)
Atherosclerosis
Journal of Histochemistry & Cytochemistry
Biomedicine & Pharmacotherapy
Mediators of Inflammation
Phytomedicine
Journal of Physiology and Pharmacology
Cardiovascular & Hematological Disorders-Drug Targets
Current Medicinal Chemistry
Expert Opinion on Therapeutic Patents
Heart Failure Reviews
Clinical and Experimental Pharmacology and Physiology
BMC Cardiovascular Disorders
Physiological Genomics
Protein and Cell
Journal of Cardiovascular Development and Disease
Cytokine
Frontiers in Cardiovascular Medicine
Biomolecules
Annals of Anatomy
Life Sciences
Medical Science Monitor
Experimental Cell Research
Molecular Medicine
Journal of Cardiac Translational Research
Clinical and Experimental Allergy
Experimental Biology and Medicine
Immunologic Research
Scientific Reports

REVIEWS AND STUDY SECTIONS

International

2012	Ad hoc Reviewer-External Expert, Netherlands Organisation for Scientific Research, Innovational Research Incentives Scheme
2015 – Present	Independent Expert Reviewer, William Harvey Research Institute (WHRI)-Academy International Fellowship Programme, London England
2016	Ad hoc Reviewer-External Expert, Netherlands Organisation for Scientific Research, Translational Research Programme
2017	External Grant Reviewer, National Health and Medical Research Council of Australia
2021	External Grant Reviewer, Medical Research Council, United Kingdom
2021	Reviewer, Diabetes Australia

National

2012 – 2016	Reviewer, Cardiac Biology Basic Science 1 Committee, American Heart Association
2012 – 2016	Reviewer, Cardiac Biology Basic Science 3 Committee, American Heart Association
2013 – Present	Abstract Reviewer, High Blood Pressure Research Scientific Sessions, American Heart Association
2016	Reviewer, National Institutes of Health (NIH)/National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), Diabetes Complications Consortium (DiaComp)
2023	Reviewer, Basic Sciences 1 Committee (Career Development Award), American Heart Association

GRANTS AND CONTRACTS

Current Grants and Contracts

Title: Replacement Substance P as a Therapy for Diabetic Cardiac Fibrosis
Source: WV - CTSI
Role: Principal Investigator
Direct Funds: $50,000

Title: Immunoregulatory Functions of FOXE1 in the adult Mouse Thyroid
Source: American Thyroid Foundation
Role: Co-Investigator
PI: Martyn Bullock
Dates: 7/1/2022 – 6/30/2023
Direct Funds: $50,000

Pending Grants and Contracts

Title: Manipulation of Histamine Receptors as a Treatment for Cardiac Fibrosis and Diastolic Dysfunction (R01 HL168021-01)
Source: NIH
Role: Principal Investigator
Direct Funds: $1,978,646

Title: Protection Against Diabetic Cardiomyopathy by the Neuropeptide Substance P (R01 HL166622-01)
Source: NIH
Role: Principal Investigator
Direct Funds: $850,072

Previously Funded Grants and Contracts

Title: The Effect of Smoke Exposure on the Early Stages of Left Ventricular Remodeling.
Source: Philip Morris International
Role: PI-Postdoctoral Fellowship
PI: Scott Levick
Dates: 5/1/2007 – 4/30/2008
Direct Funds: $40,000

Title: Neuropeptide Regulation of Cardiac Mast Cell-Mediated Myocardial Remodeling
Source: American Heart Association
Role: PI-Postdoctoral Fellowship
PI: Scott Levick
Dates: 7/1/2008 – 6/30/2010
Direct Funds: $80,000

Title: Neuro-immune Modulation of Cardiac Mast Cell-Mediated Myocardial Remodeling. (1K99HL093215)
Source: NIH
Role: PI
PI: Scott Levick
Dates: 7/1/2010 – 6/30/2011
Direct Funds: $83,333

Title: A New Paradigm of Inflammation-mediated Hypertensive Myocardial Remodeling
Source: University of South Carolina-Research Development Fund
Role: PI
PI: Scott Levick
Dates: 7/1/2010 – 6/30/2011
Direct Funds: $15,000

Title: Neuro-immune Modulation of Cardiac Mast Cell-Mediated Myocardial Remodeling. (R00HL093215)
Source: NIH
Role: PI
PI: Scott Levick
Dates: 7/1/2011 – 6/30/2015
Direct Funds: $733,528

Title: Understanding Reduced Cardiac Size Related to Postural Orthostatic Tachycardia
Source: Cullen Run Fund
Role: PI
PI: Scott Levick
Dates: 7/1/2015 – 6/30/2016
Direct Funds: $25,000

Title: Substance P as a Regulator of Adverse Remodeling in the Heart
Source: Greater Milwaukee Foundation-Elsa Schoeneich Medical Research Fund
Role: PI
PI: Scott Levick
Dates: 7/1/2015 – 12/31/2016
Direct Funds: $30,000

Title: Substance P: A central mediator of cardiac fibrosis and diastolic dysfunction (R56HL132908)
Source: NIH
Role: PI
PI: Scott Levick
Dates: 9/1/2016 – 8/31/2017
Direct Funds: $250,000

Title: Medical College of Wisconsin Presidential Faculty Scholar Award
Source: Presidents Office
Role: PI
PI: Scott Levick
Dates: 1/25/2016 - 1/24/2018
Direct Funds: $130,000

Title: Substance P: A Central Mediator of Cardiac Fibrosis and Diastolic Dysfunction (R01 HL132908-01)
Source: NIH
Role: Co-Investigator
PI: William Campbell
Dates: 9/1/2017 – 8/31/2022
Direct Funds: $800,000
This grant was originally awarded to Scott Levick as sole PI, however, the grant could not be transferred to the University of Sydney when Dr. Levick moved there from the Medical College of Wisconsin. The grant was instead transferred to William Campbell as PI, with Scott Levick taking a sub-contract from the grant (~$80,000/year).

UNDERGRADUATE STUDENT EDUCATION

2023 — 1. Katherine Baker, West Virginia University, EXPH 497 Undergraduate Research (Spring and Fall semesters)

GRADUATE MEDICAL EDUCATION

Medical College of Wisconsin

2012 – 2013 — Teaching Conference – Patient Orientated Problem-Solving System (POPS) – Pharmacokinetics, M2
2013 – 2017 — Small group facilitator for M2 and M3 students undertaking the Physician Scientist Pathway. Teaching rating of 1.2 (1=excellent, 4=poor)
2013 – 2017 — Teaching Conference – Patient Orientated Problem-Solving System (POPS) – Pharmacokinetics, M1
2016 – 2017 — Diarrhea Cases, Symptoms Unit, M2
2016 – 2017 — Lower Gastrointestinal Pharmacology, Gastrointestinal Pathophysiology Unit, M2

GRADUATE STUDENT EDUCATION

Courses

2016 – 2017 — Co-coordinator, Pharmacology and Toxicology Student Seminar Series, Medical College of Wisconsin

Graduate Students

Honors Students

1. Ainsley Kasparian, University of Technology Sydney, "The Peptide Catestatin as an Anti-fibrotic in Cardiac Disease", 2/2019 – 11/2019. First Class Honors.

2. Sam McCaffrey, University of Sydney, "Histamine Receptor Regulation of Cardiac Fibrosis", 2/2019 – 11/2019. First Class Honors.

PhD Students

1. Quynh Trang Tran, University of Sydney, "Polypharmacy in the Ageing Heart", 2018 – 2022, Co-supervisor.
2. Heather Connery, West Virginia University, 5/1/2022 – Present, Supervisor.

PhD Committees

1. Jennifer McLarty, University of South Carolina School of Medicine, "Estrogen Modulation of Cardiac Immune Cells is Cardioprotective", 2005 - 2011
2. Shraddha Nayak, Medical College of Wisconsin, "Development of a Novel Adora2b Transgenic Rat and Role of A2B Adenosine Receptors in Hypertension", 2013 – 2015
3. Patrick Gonyo, Medical College of Wisconsin, "Nucleolar Stress and DREAM Regulation by SmgGDS", 2013 – 2017

Laboratory Rotation Students

PhD Students

1. Andrew Monroe, Medical College of Wisconsin, 8/13/2012 – 10/8/2012
2. Michael Reimer, Medical College of Wisconsin, 10/8/2012 – 11/30/2012
3. Panida Lertkiatmongkol, Medical College of Wisconsin, 1/2/2013 – 3/30/2013
4. Kienan O'Dwyer, West Virginia University, 7/11/2022 – 8/1/2022 (BMS702)
5. Emily Henderson, West Virginia University, 10/3/2022 – 10/20/2022 (BMS702)

Medical Students

1. Michael Stevens - NIH Ruth L. Kirschstein National Research Service Award (NRSA) Institutional Research Training Fellow (T35), Medical College of Wisconsin, 2012

Graduate School Committee Service and Roles

2022	Graduate Faculty, WVU
2023 – present	Cell and Interdisciplinary Physiology Admissions Interviews
2022	Cell and Interdisciplinary Physiology Betschart Seminar Judge, WVU
2022 – present	Cell and Interdisciplinary Physiology, Student Writing Mentor
2023 – present	Co-Director, Cell and Interdisciplinary Physiology Graduate Program
2023 – present	Cell and Integrative Physiology Graduate Advisory Committee

MISCELLANEOUS SERVICE

2022	WV-INBRE grant reviewer
2022 - present	WVCTSI Member

POSTDOCTORAL FELLOWS

1. Heather Dehlin - NIH Ruth L. Kirschstein National Research Service Award (NRSA) Institutional Research Training Fellow (T32), Medical College of Wisconsin, 7/1/2012 – 6/12/2015, supervisor
2. Alexander Widiapradja –Medical College of Wisconsin and University of Sydney 1/25/2016 – Present, supervisor

EARLY CAREER RESEARCHER MENTOR COMMITTEES

1. Shayne Squires, MD, (Assistant Professor) Medical College of Wisconsin, 2016-2017
2. Kristen Bubb, PhD, (Lecturer) University of Sydney, 2018-2020
3. Elizabeth Bowdridge (Research Assistant Professor) West Virginia University Health Sciences Center, 2022 - present

INVITED LECTURES AND PRESENTATIONS: INTERNATIONAL

1. Scott Levick, Substance P: Two Sides of the Same Coin, University of Queensland School of Biomedical Sciences, Brisbane, Australia, 10/16/2014.
2. Scott Levick, The Neuropeptide Substance P as a Master Regulator of Cardiac Fibrosis, 2nd Cardiovascular Forum for Promoting Centers of Excellence and Young Investigators, Winnipeg, Canada, 9/6/2014.
3. Scott Levick, Substance P/Neurokinin-1 Receptor Regulation of Cardiac Fibrosis. Department of Physiology, University of Sydney, Sydney, Australia, 2/16/2017.
4. Scott Levick, Bayer Pharmaceuticals Australia Invited Speaker. Substance P/Neurokinin-1 Receptor Regulation of Cardiac Fibrosis. Department of Cardiology, Kolling Institute, Sydney, Australia, 2/17/2017.
5. Scott Levick, Regulation of Cardiac Remodeling by Substance P and the Neurokinin-1 Receptor. Department of Physiology, Czech Academy of Sciences, Prague, Czech Republic, 4/17/2018.
6. Scott Levick, Regulation of Cardiac Remodeling by Substance P and the Neurokinin-1 Receptor. Department of Cardiology, Royal North Shore Hospital, Australia, 8/24/2018.
7. Scott Levick, Neurokinin Receptor Regulation of Diabetic Cardiac Remodelling. Visiting Professor - Section on Comparative Medicine, Wake Forest University, Winston-Salem, USA, 11/14/2018.
8. Scott Levick, Regulation of Cardiac Remodeling by Substance P and the Neurokinin-1 Receptor. Visiting Professor - Section on Cardiology, Wake Forest University, Winston-Salem, USA, 11/16/2018.
9. Scott Levick, Cardiovascular Sciences Center Academic Journey Seminar Series. Wake Forest University, Winston-Salem, USA, 11/15/2018.
10. Scott Levick, The Different Faces of the Neuropeptide Substance P in Cardiac Fibrosis. Cardiovascular Science Center Seminar Series, Wake Forest University, Winston-Salem, USA, 7/11/2019.
11. Scott Levick, Neuropeptides in Cardiac Fibrosis. American Heart Association Scientific Sessions 2019, Symposia Session on "Cardiac Fibrosis: Regulation and Roles in the Stressed Heart". Philadelphia, USA, 11/17/2019.
12. Scott Levick, The Neuropeptide Substance P: A Master Regulator of Cardiac Fibrosis. Fralin Institute for Medical Research, Virginia Polytechnic and State University, Roanoke VA, USA, 12/18/2019.
13. Scott Levick, The Neuropeptide Substance P as a Therapeutic Target for Cardiac Fibrosis. Center for Disease Prevention Research, Medical College of Wisconsin, Milwaukee WI, USA, 9/22/2020.

INVITED LECTURES AND PRESENTATIONS: NATIONAL

1. Scott Levick, Sensory Nerve and Cardiac Mast Cell Modulation of Myocardial Remodeling, Department of Physiology, Medical College of Wisconsin, Milwaukee WI, USA, 9/8/2010.
2. Scott Levick, The Role of Substance P in Diabetic Cardiomyopathy. Cardiac Society of Australia and New Zealand 2019, Symposia Session on "Mechanisms and Pre-clinical Discover/Heart Failure Joint Session: Heart Failure and Diabetes". Adelaide, Australia, 8/11/2019.
3. Scott Levick, The Neuropeptide Substance P as a Therapeutic Target for Cardiac Fibrosis. Department of Integrative Medical Sciences, Northeastern Ohio Medical University (NEOMED), Rootstown OH, USA, 3/11/2021.
4. Scott Levick, The Neuropeptide Substance P: A Critical Regulator of Cardiac Fibrosis. Department of Physiology and Pharmacology, West Virginia University, Morgantown WV, USA, 9/21/2021.

INVITED LECTURES AND PRESENTATIONS: LOCAL AND INSTITUTIONAL

1. Scott Levick, Regulation of Hypertensive Myocardial Remodeling by Cardiac Mast Cells and Substance P, South Carolina COBRE Conference, Columbia, South Carolina, USA, 11/4/2010.
2. Scott Levick, Modulation of Adverse Myocardial Remodeling by the Neuropeptide Substance P, Cardiology Grand Rounds, Medical College of Wisconsin/Froedtert Hospital, USA, 11/29/2012.
3. Scott Levick, Cardiac Mast Cells and Myocardial Remodeling, Department of Cell Biology, Neurobiology and Anatomy, Medical College of Wisconsin, USA, 1/16/2013.
4. Scott Levick, Substance P as a Master Regulator of Adverse Remodeling in the Heart, Redox Biology Program, Medical College of Wisconsin, USA, 8/2/2013.
5. Scott Levick, Substance P and the Neurokinin-1 Receptor as Regulators of Cardiac Fibrosis. Department of Physiology, Medical College of Wisconsin, Milwaukee WI, USA, 3/15/2017.

6. Scott Levick, Substance P, Substance P Metabolites, the NK-1R, and MrgprX2/b2: Research in Progress. Department of Physiology and Pharmacology, West Virginia University, Morgantown WV, USA, 11/3/2022.

INVITED PRESENTATIONS AND AWARDS FOR RESEARCH EXCELLENCE TO POSTDOCTORAL FELLOWS

2012 – 2014	Heather Dehlin, NIH Ruth L. Kirschstein National Research Service Award (NRSA) Institutional Research Training Fellow (T32)
2016 – 2017	Alexander Widiapradja, Medical College of Wisconsin Presidential Postdoctoral Scholar
2017	Alexander Widiapradja, "Protective Actions of Substance P in Diabetes-Induced Cardiac Fibrosis". European Society for Cardiology Frontiers in Cardiovascular Biology, Vienna Austria (Oral Presentation)
2018	Alexander Widiapradja, European Society for Cardiology Frontiers in Cardiovascular Biology Travel Award
2019	Alexander Widiapradja, University of Sydney 'Kickstart Award', "Modulation of Macrophage Phenotype by Orphan Nuclear Receptor Nr4a1 as a Mechanism Underlying Cardiac Fibrosis" - $25,000

INVITED PRESENTATIONS AND AWARDS FOR RESEARCH EXCELLENCE TO GRADUATE STUDENTS

2019	First Class Honors - Ainsley Kasparian, University of Technology Sydney, "The Peptide Catestatin as an Anti-fibrotic in Cardiac Disease", 2/2019 – 11/2019.
2019	First Class Honors - Sam McCaffrey, University of Sydney, "Histamine Receptor Regulation of Cardiac Fibrosis", 2/2019 – 11/2019.

ABSTRACTS PRESENTED

1. Scott Levick, Andrew Fenning, Vincent Chan, Darryl Burstow, Lindsey Brown, Left ventricular function following exercise training in the spontaneously hypertensive rat, International Society for Heart Research Australasian Meeting, Brisbane, Australia, 2001.
2. Scott Levick, David Loch, Lindsey Brown, Cardiovascular Structure and Function following Exercise Training in the Deoxycorticosterone Acetate Rat, Australian Health and Medical Research Congress, Melbourne, Australia, 2002.
3. Scott Levick, Stephen Taylor, David Fairlie, Lindsey Brown, Cardiovascular Structural and Functional Adaptations to Group IIa sPLA2 Inhibition, International Society for Heart Research World Congress, Brisbane, Australia, 2004.
4. Scott Levick, Lindsey Brown, Cardiovascular Responses to Leukotriene Receptor Antagonism, International Society of Heart Research World Congress Satellite Meeting, Kruger National Park, South Africa, 2004.
5. Loren Morgan, Scott Levick, David Murray, Mary Forman, Gregory Brower, Joseph Janicki, An Innovative Technique for Isolating Functional Cardiac Mast Cells From the Heart, Experimental Biology Meeting, Washington DC, USA, 2007.
6. Scott Levick, Gregory Brower, Ashley Chastain, Michelle Bertling, Joseph Janicki, Inhibition of Matrix Metalloproteinase Activity in the Myocardium by ACE Inhibitors, Experimental Biology Meeting, Washington DC, USA, 2007.
7. Giselle Melendez, Tatayana Voloshenyuk, Jennifer McLarty, James Bradshaw, Loren Morgan, Scott Levick, Jason Gardner, Gregory Brower, Sodium Sulfite Mediated Oxidative Stress Triggers Cardiac Mast Cell Degranulation, Experimental Biology Meeting, Washington DC, USA, 2007.
8. Stephan Biscotte, Scott Levick, Michelle Bertling, Loren Morgan, Joseph Janicki, Gregory Brower, Angiotensin II Mediated Activation of Mast Cells, Experimental Biology Meeting, Washington DC, USA, 2007.
9. Scott Levick, David Murray, Gregory Brower, Joseph Janicki, Cardiac Mast Cells Mediate Hypertension-Induced Cardiac Fibrosis and Are Regulated by the Sympathetic Nervous System, American Heart Association High Blood Pressure Council Meeting, Atlanta, USA, 2008.
10. Scott Levick, Giselle Melendez, Jianping Li, Scott Supowit, Gregory Brower, Prevention of Volume Overload-Induced Adverse Myocardial Remodeling in Neurokinin-1 Receptor Knockout Mice, Experimental Biology Meeting, New Orleans, USA, 2009.

11. Scott Levick, Giselle Melendez, William Spencer, Substance P Mediated Myocardial Remodeling in the Hypertensive Heart, Experimental Biology Meeting, Washington DC, USA, 2011.
12. Gregory Brower, Yan Du, Jennifer McLarty, Joseph Janicki, Scott Levick, Gender Differences in Tumor Necrosis Factor-alpha Mediated Ventricular Dilatation, Experimental Biology Meeting, Washington DC, USA, 2011.
13. Jianping Li, Scott Levick, Joseph Janicki, Donald DiPette, Scott Supowit, Calcitonin Gene-Related Peptide is Protective Against Heart Failure, American Heart Association High Blood Pressure Council Meeting, Washington DC, USA, 2011.
14. Heather Dehlin, Andrew Monroe, Edward Manteufel, Scott Levick, Substance P Induces the Expression of Factors Relating to the Development of Cardiac Fibrosis, Medical College of Wisconsin Research Day, Medical College of Wisconsin, USA, 2012.
15. Michael Stevens, Edward Manteufel, Heather Dehlin, Scott Levick, Substance P Regulated Endothelin-1 in the Heart, Medical College of Wisconsin Medical Student Poster Day, Medical College of Wisconsin, USA, 2013.
16. Heather Dehlin, Michael Reimer, Andrew Monroe, Edward Manteufel, Scott Levick, Substance P Mediates Factors Related to Cardiac Remodeling in Response to Hypertension, Experimental Biology Meeting, Boston, USA, 2013.
17. Scott Levick, Heather Dehlin, Edward Manteufel. Regulation of cardiac mast cell density and tryptase production as a mechanism of substance P-induced cardiac fibrosis. Experimental Biology Meeting, San Diego, USA, 2016.
18. Alexander Widiapradja, Edward Manteufel, Michael Stevens, Anja Henreitter, William Campbell, Giselle Melendez, Scott Levick. Substance P Regulates Myocardial Endothelin-1 Levels and Endothelin Receptors in Cardiac Cells in Chronic Volume Overload. Medical College of Wisconsin Cardiovascular Center Retreat, Milwaukee, USA, 2016.
19. Alexander Widiapradja, Edward Manteufel, James Pena, Paul Goldspink, Amit Harma, John Imig, Bao Lu, Scott Levick. Determining the contribution of mast cell-specific neurokinin-1 receptors in pressure overload-induced cardiac fibrosis. Experimental Biology, Chicago USA, 2017.
20. Trang Tran, John Mach, Gizem Gemikonakli, Alexander Widiapradja, Scott P Levick, Susan Howlett, Rafael de Cabo, David G Le Couteur, Sarah N Hilmer. The effect of long-term polypharmacy on cardiovascular functions and cardiac fibrosis in aged mice. Australian Society of Clinical and Experimental Pharmacologists and Toxicologists, Adelaide, Australia 2018.
21. Giselle Melendez, David Soto-Pantoja, Jianli Bi, Gregory Hundley, Alexander Widiapradja, Edward Manteufel, Tancia Bradshaw, Scott Levick. Doxorubicin-induced myocardial fibrosis involves the neurokinin-1 receptor and direct effects on cardiac fibroblasts. American Heart Association Scientific Sessions, Chicago USA, 2018.
22. Alexander Widiapradja, Christine Yu, Katherine Kott, Gemma Figtree, Scott Levick. Substance P is associated with hypertension-induced cardiac fibrosis. High Blood Pressure Research Scientific Sessions, AHA, Chicago USA, 2018.
23. Alexander Widiapradja, Ainsley Kasparian, Scott P. Levick. "The Role of Nr4a1 in Angiotensin-II Model of Pressure Overload Induced Cardiac Fibrosis". European Society of Cardiology Congress, Paris, France, 2019.

INVITED CONFERENCE CHAIRS

2012	American Heart Association Scientific Sessions 2012, session titled, "Novel Mechanisms of Angiogenesis".
2013	American Heart Association High Blood Pressure Research Conference 2013, session titled, "Cardiac Hypertrophy and Dysfunction".
2018	American Heart Association Scientific Sessions 2018, session titled, "Translational Studies in Cardiac Fibrosis".

ORIGINAL PUBLISHED PEER-REVIEWED ARTICLES

1. Levick S, Fenning A, Brown L. Increased calcium influx mediates increased cardiac stiffness in hyperthyroid rats. *Cell Biochem Biophys*. 2005;43:53-60.

2. Allan A, Fenning A, Levick S, Hoey A, Brown L. Reversal of cardiac dysfunction by selective ET-A receptor antagonism. *Br J Pharmacol*. 2005;146:846-53.

3. Loch D, Levick S, Hoey A, Brown L. Rosuvastatin attenuates hypertension-induced cardiovascular remodeling without affecting blood pressure in DOCA-salt hypertensive rats. *J Cardiovasc Pharmacol*. 2006;47:396-404.
4. Levick S, Loch D, Rolfe B, Reid R, Fairlie D, Taylor S, Brown L. Antifibrotic activity of an inhibitor of group IIA secretory phospholipase A2 in young spontaneously hypertensive rats. *J Immunol*. 2006;176:7000-7.
5. Brower GL, Levick SP, Janicki JS. Inhibition of matrix metalloproteinase activity by ACE inhibitors prevents left ventricular remodeling in a rat model of heart failure. *Am J Physiol Heart Circ Physiol*. 2007;292:H3057-64.
6. Murray DB, Gardner JD, Levick SP, Brower GL, Morgan LM, Janicki JS. Response of cardiac mast cells to atrial natriuretic peptide. *Am J Physiol Heart Circ Physiol*. 2007;293:H1216-22.
7. Morgan LG, Levick SP, Murray DB, Forman MF, Brower GL, Janicki JS. A novel technique for isolating functional mast cells from the heart. *Inflamm Res*. 2008;57:241-6.
8. Levick SP, Gardner JD, Holland M, Hauer-Jensen M, Janicki JS, Brower GL. Protection from adverse myocardial remodeling secondary to chronic volume overload in mast cell deficient rats. *J Mol Cell Cardiol*. 2008;45:56-61.
9. Levick SP, McLarty JL, Murray DB, Freeman RM, Carver WE, Brower GL. Cardiac mast cells mediate left ventricular fibrosis in the hypertensive rat heart. *Hypertension*. 2009;53:1041-7.
10. Jobe LJ, Melendez GC, Levick SP, Du Y, Brower GL, Janicki JS. TNF-alpha inhibition attenuates adverse myocardial remodeling in a rat model of volume overload. *Am J Physiol Heart Circ Physiol*. 2009;297:H1462-8.
11. Levick SP, Murray DB, Janicki JS, Brower GL. Sympathetic nervous system modulation of inflammation and remodeling in the hypertensive heart. *Hypertension*. 2010;55:270-6.
12. Murray DB, Levick SP, Brower GL, Janicki JS. Inhibition of matrix metalloproteinase activity prevents increases in myocardial tumor necrosis factor-alpha. *J Mol Cell Cardiol*. 2010;49:245-50.
13. Meléndez GC, McLarty JL, Levick SP, Du Y, Janicki JS, Brower GL. Interleukin 6 mediates myocardial fibrosis, concentric hypertrophy, and diastolic dysfunction in rats. *Hypertension*. 2010;56:225-31. (selected for Editorial Comment)
14. Melendez GC, Voloshenyuk TG, McLarty JL, Levick SP, Brower GL. Oxidative stress mediated cardiac mast cell degranulation. *Toxicological and Environmental Chemistry*. 2010;92:1393-3101.
15. Chan V, Fenning A, Levick SP, Loch D, Chunduri P, Iyera A, Teoa YL, Hoey A, Wilson K, Burstow D, Brown L. Cardiovascular changes during maturation and ageing in male and female spontaneously hypertensive rats. *J Cardiovasc Pharmacol.* 2011;57:469-78.
16. McLarty JL, Melendez GC, Brower GL, Janicki JS, Levick SP. Tryptase/Protease-activated receptor 2 interactions induce selective mitogen-activated protein kinase signaling and collagen synthesis by cardiac fibroblasts. *Hypertension*. 2011;58:264-70. (selected for Editorial Comment)
17. Melendez GC, Li J, Law BA, Janicki JS, Supowit SC, Levick SP. Substance P induces adverse myocardial remodeling via a mechanism involving cardiac mast cells. *Cardiovasc Res*, 2011;92:420-9. (selected for European Society of Cardiology special issue translated to Russian)
18. McLarty JL, Melendez GC, Spencer WJ, Levick SP, Brower GL, Janicki JS. Isolation of Functional Cardiac Immune Cells. *J Vis Exp*. 2011(58).
19. Lu H, Melendez GC, Levick SP, Janicki JS. Prevention of adverse cardiac remodeling to volume overload in female rats is the result of an estrogen-altered mast cell phenotype. *Am J Physiol Heart Circ Physiol*. 2012;302:H811-H817.
20. McLarty JL, Melendez GC, Levick SP, Bennett S, Sabo-Attwood T, Brower GL, Janicki JS. Estrogenic modulation of inflammation-related genes in male rats following volume overload. *Physiol Genomics*, 2012;44:362-373.
21. Law BA, Levick SP, Carver WE. Alterations in cardiac structure and function in a murine model of chronic alcohol consumption. *Microsc Microanal*, 2012;18:453-461.
22. Li J, Lu H, Plante E, Meléndez GC, Levick SP, Janicki JS. Stem cell factor is responsible for the rapid response in mature mast cell density in the acutely stressed heart. *J Mol Cell Cardiol*. 2012;53:469-474.
23. Li J, Levick SP, Janicki JS, Dipette DJ, Supowit SC. Alpha-calcitonin gene-related peptide is protective against pressure overload-induced heart failure. *Regulatory Peptides*, 2013;185:20-28.
24. McLarty JL, Li J, Levick SP, Janicki JS. Estrogen modulates the influence of cardiac inflammatory cells on cardiac fibroblast function. *J Inflamm Res*, 2013;6:99-108.
25. Dehlin HM, Manteufel EJ, Monroe AL, Reimer MH, Levick SP. Substance P acting via the neurokinin-1 receptor regulates adverse myocardial remodeling in a rat model of hypertension. *Int J Cardiol*, 2013;168:4643-4651.

26. Melendez GC, Manteufel EJ, Dehlin HM, Register TC, Levick SP. Non-human primate and rat cardiac fibroblasts show similar extracellular matrix-related and cellular adhesion gene responses to substance P. *Heart, Lung, and Circulation*, 2015;24:395-403.
27. Jubair S, Li J, Dehlin HM, Manteufel EJ, Levick SP, Janicki JS. Substance P induces cardioprotection from ischemia via activation of AKT. *Am J Physiol: Heart Circ Physiol*, 2015;309:H676-H684.
28. Brower GL, Levick SP, Janicki JS. Differential effects of prevention and reversal treatment with lisinopril on left ventricular remodeling in a rat model of heart failure. *Heart, Lung, and Circulation*, 2015;24:919-924.
29. Li J, Jubair S, Levick SP, Janicki JS. The autocrine role of tryptase in pressure overload-induced mast cell activation, chymase release and cardiac fibrosis. *Int J Cardiol: Metabolic & Endocrine*, 2016;10:16-23.
30. Sharma A, Khan A-H, Levick SP, Sing K, Lee S, Hammock BD, Imig JD. Novel omega-3 fatty acid epoxygenase metabolite reduces kidney fibrosis. *Int J Mol Sci*, 2016;17:751.
31. Levick SP, Soto-Pantoja DR, Bradshaw TW, Hundley WG, Widiapradja A, Manteufel EJ, Bi J, Meléndez GC. Doxorubicin-induced myocardial fibrosis involves the neurokinin-1 receptor and direct effects on cardiac fibroblasts. *Heart, Lung and Circulation*, 2019;28:1598-1605 (selected as best scientific article for 2019).
32. Levick SP, Brower GL, Janicki JS. Substance P-mediated cardiac mast cell activation and its modulation: An *in vitro* study. *Neuropeptides*, 2019;74:52-59.
33. Widiapradja A, Dehlin HM, Manteufel EJ, Pena J, Goldspink PH, Sharma A, Imig J, Lu B, Levick SP. Regulation of cardiac mast cell maturation and function by the neurokinin-1 receptor in the fibrotic heart. *Scientific Reports*, 2019;9:11004.
34. McCaffery SL, Lim G, Bullock M, Kasparian AO, Clifton-Bligh R, Campbell WB, Widiapradja A, Levick SP. The histamine 3 receptor is expressed in the heart and its activation opposes adverse cardiac remodeling in the angiotensin II mouse model. *Int J Mol Sci,* 2020;21:9757 (Invited Article - Special Issue: Extracellular Matrix in Heart Disease).
35. Widiapradja A, Kasparian AO, McCaffrey SL, Kolb L, Imig J, Melendez GC, Levick SP. Replacement of lost substance P reduces fibrosis in the diabetic heart by preventing adverse fibroblast and macrophage phenotype changes. *Cells,* 2021;10:2659.
36. Lim G, Widiapradja A, Levick SP, McKelvey K, Liao, X-H, Refetoff S, Bullock M, Clifton-Bligh R. *Foxe1* deletion in the adult mouse is associated with thyroidal mast cell infiltration and hypothyroidism. *Endocrinology,* 2022;163:158.
37. Melendez GC, Kavanagh K, Lacey JL, Gharraee N, Block M, Widiapradja A, Levick SP. Substance P replacement reduces cardiac fibrosis in monkeys with type 2 diabetes. *Biomedicine and Pharmacotherapy*, 2023;160:114365.
38. Natarajan J, Kriska T, Hernreiter AM, Levick SP, Campbell WB. Effect of substance P metabolism by cardiovascular cells on intracellular calcium signaling through NK-1 and MRGPRX2 receptors (in preparation).
39. Widiapradja A, Kasparian AO, Levick SP. The orphan nuclear receptor Nr4a1 causes cardiac fibrosis via modulation of cardiac fibroblast and macrophage phenotype (in preparation).

BOOK CHAPTERS AND REVIEW ARTICLES

1. Brower GL, Gardner JD, Forman MF, Murray DB, Voloshenyuk T, Levick SP, Janicki JS. The relationship between myocardial extracellular matrix remodeling and ventricular function. *Eur J Cardiothorac Surg*. 2006;30:604-10.
2. Levick SP, Loch D, Taylor SM, Janicki JS. Arachidonic acid metabolism as a potential mediator of cardiac fibrosis associated with inflammation. *J Immunol*. 2007;178:641-6.
3. Boerma M, Brower GL, Kennedy RH, Joseph J, Wang J, Levick SP, Janicki JS, Hauer-Jensen M. Novel insight into the role of mast cells in cardiac disease. In. Mast Cells: Roles, Interactions and Disorders. Eds. Jonas F. Jung & Luca T. Scholz, Nova Publishers, New York, Ch 1. pp. 13-40, 2008.
4. Levick SP, Boerma M, Hauer-Jensen M, Brower GL, Janicki JS. Functional role of mast cells in the pathophysiology of cardiovascular diseases. In. Mast Cells: Roles, Interactions and Disorders. Eds. Jonas F. Jung & Luca T. Scholz, Nova Publishers, New York, Ch 2. pp. 41-76, 2008.
5. Levick SP, Brower GL, Janicki JS. The role of mast cells in mediating myocardial remodeling in response to sustained volume overload. In. Mast Cells and Cardiovascular Disease. Ed. Jacob Joseph, Nova Publishers, New York, Ch 8. pp. 153-173, 2010.
6. Levick SP, Melendez GC, Plante E, McLarty JL, Brower GL, Janicki JS. Cardiac mast cells: the centrepiece in adverse myocardial remodelling. *Cardiovasc Res*. 2011;89:12-9.

7. Janicki JS, Spinale FG, Levick SP. Gender differences in non-ischemic myocardial remodeling: are they due to estrogen modulation of cardiac mast cells and/or membrane type 1 matrix metalloproteinase. *Pflugers Arch - European Journal of Physiology*, 2013;465:687-397.
8. Levick SP, Goldspink PH. Could interferon-gamma be a therapeutic target for treating heart failure? *Heart Fail Rev,* 2014;19:227-36.
9. Dehlin HM and Levick SP. Substance P in heart failure: The good and the bad. *Int J Cardiol*, 2014;170:270-277.
10. Janicki JS, Brower GL, Levick SP. The emerging prominence of the cardiac mast cell as a potent mediator of adverse myocardial remodeling. In Methods in Molecular Biology, Mast Cells: Methods and Protocols (2nd Ed.). Eds. Kelly M. McNagny & Michael R. Hughes, Humana Press, New York, Ch 8, 2015,pp 121-140.
11. Widiapradja A, Chunduri P, Levick SP. The role of neuropeptides in adverse myocardial remodeling and heart failure. *Cell and Mol Life Sci,* 2017;74:2019-2038.
12. Levick SP, and Widiapradja A. Mast cells: A key contributor to cardiac fibrosis. *Int J Mol Sci,* 2018;19:231 (Invited Review - Special Issue: Extracellular Matrix in Development and Disease).
13. Levick SP, and Widiapradja A. The diabetic cardiac fibroblast. *Int J Mol Sci,* 2020;21:970 (Invited Review - Special Issue: Cardiovascular Complications of Diabetes).
14. Levick SP. Histamine receptors in heart failure. *Heart Failure Reviews*, 2022;27:1355-1372.
15. Chunduri P, Patel S, Levick SP. Relaxin/serelaxin for cardiac dysfunction and heart failure in hypertension. *Advances in Pharmacology*, 2022;94:183-211.

EDITORIALS

1. Levick SP, Brower GL. Regulation of matrix metalloproteinases is at the heart of myocardial remodeling. *Am J Physiol Heart Circ Physiol*. 2008;295:H1375-6.
2. Janicki JS, Levick SP. The convergence of ancient Chinese medicine with modern therapeutics to prevent cardiac fibrosis. *Am J Hypertens*, 2012;25:139.
4. Levick SP. Substance P and the neurokinin-1 receptor in the ischaemic heart: Two Sides to the Coin. *Int J Cardiol,* 2018;271:258-259 (Invited Editorial).
5. Levick SP. Understanding the complex role of substance P in the diseased heart. *Heart, Lung and Circulation*, 2018;27:1394-1397 (Invited Editorial).

LETTERS

1. Levick SP, Melendez GC. Targeting substance P and relaxin: A future combination therapy approach for heart failure? *Int J Cardiol,* 2016;204:154-155 (Invited Letter).

CURRICULUM VITAE

Feb, 2023

James W. Lewis, Ph.D.
Professor, Vice Chair of Education
Department of Neuroscience & Rockefeller Neuroscience Institute

Office Address: West Virginia University (WVU)
Biomedical Research Bldg, room 312
PO Box 9303
1 Medical Center Drive
Morgantown, WV 26506-9229
https://directory.hsc.wvu.edu/Profile/30475

Work: (304) 293-1517
Cell: (304) 680-4943
email: jwlewis@hsc.wvu.edu
fax: (304) 293-3850

Place of Birth: Hamburg, Germany.

Citizenship: U.S.A.

Education:
1985 - 1989 B.S., Biochemistry, honors with distinction, Pennsylvania State University.
1994 - 1994 EMT (Emergency Medical Technician), Dept of Transportation, St. Louis, MO.
1989 – 1997 Ph.D., Neurobiology, California Institute of Technology.

Postgraduate/Postdoctoral Training:
1997 - 2000 Post-doctoral training in fMRI of humans, Medical College of Wisconsin.
2000 - 2004 Faculty (Instructor, then Research Scientist) at Medical College of Wisconsin

Academic Positions and Appointments:
2004 - 2012 Research Assistant Professor at WVU, Dept. Physiology & Pharmacology
2012 – 2014 Teaching Assistant Professor at WVU. Dept. Neurobiology & Anatomy
2014 – 2017 Teaching Associate Professor at WVU. Dept. Neurobiology & Anatomy
2017 – 2018 Teaching Associate Professor at WVU. Dept. Phys, Pharm and Neuroscience
2018 – 2020 Teaching Associate Professor at WVU. Dept. Neuroscience
2020 – present Teaching Professor at WVU. Dept. Neuroscience

Awards and Honors:

Teaching Awards:

2011 Distinguished Teacher Award (student nominated), at the West Virginia University School of Medicine, Professional Degree Program—Senior Level. (Committee Chair, Dr. Ruth Kershner, EdD, RN, CHES) April 11th, 2011. (http://wvuhealthcare.com/wvuh/Content/Media/News-Releases/2011/04/11-081)

2012 West Virginia University Foundation Award for Outstanding Teaching. April 18th, 2012. CB Wilson, Associate Provost for Academic Personnel, and Paul Hill, Interim Chancellor of WVU. http://wvutoday.wvu.edu/n/2012/04/05/they-change-lives-six-wvu-faculty-members-named-outstanding-teachers ; http://www.wvuf.org/

2013 Chancellor's Innovators Award for our Educational Initiatives Group (EIG) team at the Health Sciences Center at WVU. Sponsored by Chancellor Christopher C. Colenda MD, MPH. (April 11, 2013).

2013 Acceptance into Academy of Excellence in Teaching & Learning at WVU. Program coordinator Gwendolyn Marshall, MSIR gmarshall@hsc.wvu.edu

2015 Excellence in Education award, Supplemental Educational Incentives program at WVU for recognition of commitment and dedication to education of medical health professionals. From Dr. Norman Ferrari, MD and Dr. Clay Marsh, MD, Vice President and Executive Dean of WVU Health Sciences.

2016 Excellence in Education award, Supplemental Educational Incentives program at WVU for recognition of commitment and dedication to education of medical health professionals. From Dr. Norman Ferrari, MD and Dr. Clay Marsh, MD, Vice President and Executive Dean of WVU Health Sciences.

2017 Excellence in Education award, Supplemental Educational Incentives program at WVU for recognition of commitment and dedication to education of medical health professionals. From Dr. Norman Ferrari, MD and Dr. Clay Marsh, MD, Vice President and Executive Dean of WVU Health Sciences.

2018 Excellence in Education award, Supplemental Educational Incentives program at WVU for recognition of commitment and dedication to education of medical health professionals. From Dr. Norman Ferrari, MD and Dr. Clay Marsh, MD, Vice President and Executive Dean of WVU Health Sciences.

2019 WVU School of Medicine Alumni Association Percival L. MacLachlan Award. Given in recognition of a basic sciences faculty chosen by the second year class of medical students for "***demonstrating unusual teaching ability and a sincere interest in the progress of the entire class***." Established by Michael J. Moore, MD of the class of 1946. Presented by Lynda B. Nine, Executive Director School of Medicine Alumni Association lnine@hsc.wvu.edu

2019 Excellence in Education award, Supplemental Educational Incentives program at WVU for recognition of commitment and dedication to education of medical health professionals. From Dr. Norman Ferrari, MD and Dr. Clay Marsh, MD, Vice President and Executive Dean of WVU Health Sciences.

Research Awards:

Scholarship (1995) Cold Spring Harbor, Brain Mapping Course, partial scholarship.

IDeA Travel award (2006). 1st Biennial National IDeA Symposium of Biomedical Research Excellence (NISBRE). NIH. July 20, Washington D.C.

Professional Societies & Affiliations:

1995 – Member of the Society for Neuroscience (SFN)
1998 – Member of the Organization for Human Brain Mapping (HBM)
2000 – Member of Acoustical Society of America (ASA)
2006 – Member of Cognitive Neuroscience Society (CNS)
2006 – Association for Research in Otolaryngology (ARO)

Institutional/University Committees:

2007 Faculty search committee for the Center for Advanced Imaging; coordinator Dr. Aina Puce.

2008-present Faculty sponsor for the West Virginia University Ultimate Club Extramural sports at WVU: http://cal.wvu.edu/EventList.aspx?fromdate=8/14/2012&todate=12/31/2012&display=Month&type=public&eventidn=4121&view=EventDetails&information_id=10522

2010 Faculty search committee for the Dept. Anatomy & Neurobiology; coordinator Dr. Dick Dey.

2011- present Neuroscience Seminar steering committee, coordinator Dr. Aric Agmon

2013-2014 Curriculum Committee Member for the School of Medicine at West Virginia University (chaired by Dr. Kenneth Landreth)

2013- present Human Gift Registry (HGR) committee member. Dept. Pathology and Laboratory Medicine (PALM), formerly Neurobiology & Anatomy, WVU.

2012- 2018 Education Initiative Group (EIG) committee member. Dept. Neurobiology & Anatomy. Coordinator Dr. Penprapa (Penny) Klinkhachorn, DVM, PhD.

2015- present Distinguished Teacher Award Committee. Coordinator Dr. H Wayne Lambert.

2015- present Qualifying Exam Committee for Graduate students in Neurobiology curriculum. Including review/grading of written examinations and oral examinations of PhD candidates at WVU. Coordinator Dr. Richard Dey.

Ad hoc Reviewer (Invited Peer-Review of Articles and Book Chapters):

01/2001 Reviewer for Canadian Journal of Experimental Psychology, Dr. Alan Kingstone, ed.
05/2002 Reviewer for Current Biology, Geoffrey North, ed.
11/2002 Reviewer for Neuropsychologia, Dr. Morris Moscovitch, co-ed.
09/2003 Reviewer for European Journal of Neuroscience, Dr. Nikos Logothetis, ed.
10/2003 Reviewer for Human Brain Map, Dr. Jose Pardo, ed.
07/2004 Reviewer for Cerebral Cortex, Michelle Pizzuti
11/2004 Reviewer for Human Brain Mapping, Dr. Peter Bandittini
01/2005 Reviewer for Cerebral Cortex, Dr. Steven Petersen
05/2006 Reviewer for J. Cognitive Neuroscience, Dr. Mark D'Esposito
07/2006 Reviewer for Cerebral Cortex, Michelle Pizzuti
08/2006 Reviewer for Human Brain Mapping, Dr. Peter Bandittini
09/2006 Reviewer for NeuroImage Dr. Ferdinand Binkofski
01/2007 Reviewer for Cerebral Cortex, Michelle Pizzuti
08/2007 Reviewer for NeuroImage, Dr. Richard Henson, Section Editor
09/2007 Reviewer for NeuroImage, Dr. Richard Henson, Section Editor
07/2007 Reviewer for Cerebral Cortex, Michelle Pizzuti
02/2008 Reviewer for Brain Research, Dr. John Foxe, Guest Editor
03/2008 Reviewer for Neuropsychologia, Dr. Daniel T. Tranel, Section Editor
04/2009 Reviewer of a book chapter, Dr. Marcus Naumer
08/2009 Reviewer for J. Neuroscience, Dr. John Maunsell, Editor
09/2009 Reviewer for NeuroImage, Dr. Andreas Kleinschmidt, Section Editor
09/2009 Reviewer for Psychophysiology, Dr. Stefan Debener, Associate Editor
09/2009 Reviewer for Journal of Neuroscience, Dr. Earl Miller, Editor
10/2009 Reviewer for Human Brain Mapping, Dr. Cathy Price, Editor
12/2009 Reviewer for NeuroImage, Dr. Aina Puce, Section Editor
12/2009 Reviewer for J Cognitive Neuroscience, Randy McIntosh. Editor
04/2010 Reviewer for Brain & Language, Dr. Steven Small, Editor
05/2010 Reviewed book chapter for Multisensory object perception in the primate brain, eds. MJ Naumer, J Kaiser
09/2010 Reviewer for Neuropsychologia, Dr. Daniel T. Tranel, Section Editor
09/2010 Reviewer for Frontiers, Dr. Maryse Lassonde, Associate Editor
10/2010 Reviewer for Frontiers, Dr. Federico Bermudez-Rattoni, Editor
11/2010 Reviewer for Cerebral Cortex, Michelle Pizzuti
06/2011 Reviewer for J. Neuroscience, Rev., editor, Charles Schroeder
09/2011 Reviewer for NeuroImage, Dr. Sonja A. Kotz, editor
12/2011 Reviewer for J. Neuroscience, Rev., editor, Sabine Kastner
02/2012 Reviewer for NeuroImage, Ms. Sonji D. Dawson, Journal Manager
03/2012 Reviewer for J. Neuroscience, Rev., editors, Charlie Schroder, Sabine Kastner
12/2012 Reviewer for J. Neuroscience, Rev. editor W. Usrey.
02/2012 Reviewer for Hearing Research, Rev editor Chris Petkov
04/2013 Reviewer for NeuroImage, editor Dr. Greg Hickok, PhD
06/2013 Reviewer for Experimental Brain Research, ed. Dr. Melvin Goodale, PhD
01/2014 Reviewer for PNAS, ed. Tom Myers and Jonathan Fritz, PhD.
01/2014 Reviewer for Frontiers, ed. Dr. Janos Eszter
04/2014 Reviewer for Frontiers, ed. Dr. Jonathan Fritz, PhD.
04/2014 Reviewer for Frontiers, ed. Dr. Einat Liebenthal
09/2014 Reviewer for Brain & Cognition, Assoc. ed. Brigitte Stemmer, MD, PhD.
11/2015 Reviewer for Frontiers, ed. Dr. Carol Seger, PhD

01/2016	Reviewer for NeuroImage, editor Dr. Aina Puce, PhD
02/2016	Reviewer for Human Brain Mapping,
10/2016	Reviewer for J. Cognitive Neuroscience, ed. Jeff Binder, MD
03/2017	Reviewer for Neuropsychology, Dr. Marius Peelin, editor
11/2017	Reviewer for Neuropsychologia, Dr. Stephan Hamann, PhD section ed.
06/2018	Reviewer for J. Cognitive Neuroscience, ed. Jeff Binder, MD
07/2018	Reviewer for PLOS one, ed. I. Puebla
02/2019	Reviewer for Frontiers Systems Neuroscience, ed. Jonathan Fritz, PhD
01/2020	Reviewer for Frontiers ed. Andrew J. Parker
01/2020	Reviewer for Attention, Perception and Psychophysics, ed. Rob Sanford

Ad hoc Grant Reviewer:

2003	Reviewer of research protocols for General Clinical Research Center at MCW.
2003	Reviewer for National Science Foundation, (Lynne E. Bernstein, PhD., Director, Cognitive Neuroscience)
2005	Reviewer for the Israel Science Foundation (Prof. Joseph Klafter, chairman; halinasz@isf.org.il).
2007- 2011	Reviewer for Program to Stimulate Competitive Research (PSCoR) at West Virginia University. Coordinator Tammy.Thompson@mail.wvu.edu. (3 Reviews)
2010	Reviewer for the Senate Committee on Research at West Virginia University. Coordinator Amanda Griffith; Amanda.Griffith@mail.wvu.edu
2011	Reviewer for National Science Foundation, (Betty Tuller, PhD., Director, Program in Perception, Action, and Cognition)
2015	Reviewer for Univ. Wisconsin, Milwaukee Research Growth Initiative program. Coordinator Kathleen Koch,
2018	WVCTSI Pilot Review Program at WVU. Coordinator Camille Charlier, MS.
2018	Reviewer for Human Frontier Science Program, France. Director Geoff Richards, MA, PhD. grant@hfsp.org

Research Grants:

Title:	COBRE Translational Centers in Neurosciences (Phase 3)
Source:	NIH: Centers of Biomedical Research Excellence (COBRE) in Sensory Neuroscience (P30RR03115)
Role:	**Consultant, Institutional researcher** of the Advanced Imaging (AI) core (PI: George Spirou, PhD)
Dates:	09/01/2010 – 5/30/2015
Core Funds:	$10,000 annual budget for the AI core
Total Funds:	$742,501 to SNRC
Title:	Delineating Autism subtypes based on sensory profiles and neuronal functioning
Source:	West Virginia Clinical and Translational Science institute (WVCTSI) pilot grant
Role:	**PI**
Dates:	02/2015 – 12/2016
Category:	Research
Total Funds:	$50,000

Title:	Somatic afferent stimulation to improve patient outcomes: fMRI imaging
Source:	West Virginia Clinical and Translational Science institute (WVCTSI) pilot grant
Role:	**Co-Investigator** (PI: Dr. William Stauber, PhD)
Dates:	9/1/2016 – 12/31/2016
Direct Funds:	$5,000

Title:	FMRI of Human Audiovisual Sensory Processing: F32 EY06767-01
Source:	National Eye Institute; Individual National Research Service Award (NRSA)
Role:	**Principal researcher**
Dates:	06/1997 – 07/2000
Direct Funds:	$74,908

Title:	FMRI of human auditory spatial processing: 1 R03 DC04642-01 small grant
Source:	National Institute on Deafness and Other Communication Disorders (NIDCD)
Role:	**Principal researcher**
Dates:	08/2000 – 08/2003
Direct Funds:	$150,000

Title:	3T Whole-body MRI scanner for functional imaging: 1S1 0RR17215-01
Source:	NIH shared instrumentation grant, Principal investigator Dr. Jim Hyde
Role:	**Institutional co-investigator**
Dates:	awarded April 2003
Direct Funds:	$2,000,000

Title:	FMRI of human auditory spatial processing: GCRC #742
Source:	NIH, General Clinical Research Center (GCRC) research infrastructure support
Role:	**Principal researcher**; http://www.mcw.edu/gcrc/index.html
Dates:	09/2002 – 09/2004
Direct Funds:	~$4,636 per year

Title:	Howard Hughes Fund (start up package): 2R278-R
Source:	Howard Hughes Foundation
Role:	**Principal investigator**
Dates:	05/2004 – 01/2006
Direct Funds:	$250,000

Title:	FMRI of auditory attention to complex natural sounds: 2P20 RR15574-06
Source:	Centers of Biomedical Research Excellence (COBRE) in Sensory Neuroscience
Role:	**Principal Investigator** of subproject 1;
Dates:	08/2005 – 07/2010
Direct Funds:	Years 1-5: $178,043; $274,022; $199,152; $189,369; $109,875

Title:	COBRE Translational Centers in Neurosciences (Phase 3)
Source:	NIH: Centers of Biomedical Research Excellence (COBRE) in Sensory Neuroscience (5P30GM103503)
Role:	Consultant, Institutional researcher of the Advanced Imaging (AI) core
Dates:	09/01/2010 – 5/30/2015
Category:	Infrastructural support and Research
Core Funds:	$10,000 annual budget for the Center for Advanced Imaging (CAI) core
Total Funds:	$742,501 to SNRC at WVU

Title:	The neural basis of social cognition
Source:	NIH 5R01NS049436
Role:	**Co-Investigator** consortium (PI: Dr. Aina Puce)
Dates:	02/01/09 – 01/31/12
Direct Funds:	$ 98,251

Title:	FMRI: 2P20 RR15574-06
Source:	National Defense Science and Engineering Graduate (NDSEG) Fellowship
Role:	**Laboratory Supervisor** for pre-doctoral grant awarded to William J. Talkington.
Dates:	9/2009 – 8/2012
Direct Funds:	$91,500; 3 years salary for graduate student stipend

Title:	Can we predict motor and cognitive outcome after ischemic brain lesions by combination of resting state fMRI and measures of white matter integrity?
Source:	West Virginia Clinical and Translational Science institute (WVCTSI) grant
Role:	**Co-Investigator** (PI: Dr. Paola Pergami, MD)
Dates:	4/1/2013 – 03/30/2014
Direct Funds:	$38,914

Title:	Mechanisms of infant feeding method protection against pediatric sleep-disordered breathing
Source:	COBRE
Role:	**Co-Investigator** (PI: Dr. Hawley Montgomery-Downs, PhD)
Dates:	4/1/2013 – 7/31/2013
Direct Funds:	$50,000

Title:	Delineating Autism Subtypes Based on Sensory Profiles and Neuronal Functioning
Source:	WVCTSI; Clinical Translational Research
Role:	**PI**
Dates:	02/01/2015 – 6/30/2016 (extensions into 2017)
Category:	Research
Total Funds:	$50,000

Title:	Autism Research
Source:	Crowd-Funding through WVU Foundation http://wvuautismresearch.kintera.org/faf/home/default.asp?ievent=1126357&lis=1&kntae1126357=C9693A108467460A9580A3689BC436C0 and http://wvuautismresearch.kintera.org/faf/home/default.asp?ievent=1126357
Role:	PI
Dates:	12/15/2014 – 06/30/2015 (Spring Semester at WVU)
Category:	Research
Total Funds:	Goal of $10,000 (presently at $1,200).

Title:	Mechanisms of infant feeding method protection against pediatric sleep-disordered breathing
Source:	West Virginia Clinical and Translational Science institute (WVCTSI) pilot grant
Role:	**Co-Investigator** (PI: Dr. Hawley Montgomery-Downs, PhD)
Dates:	6/1/2014 – 12/31/2016
Direct Funds:	$75,000

Title:	Somatic afferent stimulation to improve patient outcomes: fMRI imaging
Source:	West Virginia Clinical and Translational Science institute (WVCTSI) pilot grant
Role:	**Co-Investigator** (PI: Dr. William Stauber, PhD)
Dates:	9/16/2016 – 3/15/2017
Direct Funds:	$5,000

Title:	MRI assessment of neuromuscular electrical stimulation (NEMS) treatment for Guillain Barre Syndrome.
Source:	New Fund: 2R400 - Susan Dorsch Guillain-Barre Syndrome Research Fund Campaign Priority: Research Initiatives
Role:	Co-Investigator (PI: Dr. Cheryl A Smith, MD, PhD, Dept. Neurology)
Dates:	2017 – current
Category:	Research
Total Funds:	$ 100,000

Title:	Regulation of excitability in a sensory system by cellular and network components.
Source:	NIH; NIDCD
Role:	Consultant (PI: Shobhana Sivaramakrishnan, PhD, WVU)
Dates:	9/15/2017 – 8/31/2020
Direct Funds:	$250,000

Title:	Basal ganglia resting state functional connectivity in opioid use disorder
Source:	West Virginia Clinical and Translational Science institute (WVCTSI) pilot grant
Role:	**Co-Principal Investigator** (Co-PI: Dr. Garret Cooper, MD/PhD)
Dates:	10/1/2020 – 2/30/2022
Direct Funds:	$50,000

Teaching Experience and Philosophy:

Although I have had little formal training in teaching, I have had the great fortune of learning from a wide variety of instructors, and have abstracted several components of teaching that have shaped my teaching philosophy. First, I have adopted an overarching teaching philosophy of meeting students "half way": That is, I try to understand where the students are in terms of their level of knowledge and understanding, and to teach interactively (using a "pointed theatric teaching style") at a level that is not over their heads, but challenges them to think. A second component of my teaching philosophy is the use of "knowledge hooks". In every lecture I try to present several entertaining factoids and perform different in-class demonstrations (knowledge hooks) that I consider being *highly* memorable, which are related to the material being covered. As opposed to emphasizing "short term learning for the exam" approach, I believe my adopted approach and teaching style emphasizes the consolidation of a select number of memories that will last for years, and even decades, for the student. Later in life the student will be able to at least recall that they *had* learned information on a given topic at some point, and could thus more easily refer to that point in time to aid in recalling or looking up more details on the topic.

Teaching related abstracts/conferences:

2013	Great Teachers Seminars, 21st annual meeting, June 17-20th, 2013 in Cairo, WV. Coordinators David Gottshall and Mark Goldstein, mgoldstein@wvncc.edu
2016	HSC Faculty Engagement Event, "Large Group Teaching" group leader, April 2016. Coordinator: Dr. Rashida Khakoo, MD, MACP.
2017	HSC Faculty Engagement Event, "Large Group Teaching" group leader, April 2017. Coordinator: Dr. Rashida Khakoo, MD, MACP
2018	HSC Faculty Engagement Event, "Large Group Teaching" group leader, April 2018. Coordinator: Dr. Rashida Khakoo, MD, MACP
2019	HSC Faculty Engagement Event, "Large Group Teaching" group leader, April 2019. Coordinator: Dr. Rashida Khakoo, MD, MACP
2019	Panelist for the Medical Education Teaching and Learning (METL) Peer Observation workshop at the Southern Group on Education Affairs (SGEA) meeting https://www.aamc.org/members/gea/regions/sgea/ . Orlando, FL March 28-30, 2019. Coords Jean Bailey (Jean.Bailey@vcuhealth.org) Andrea Berry (Andrea.Berry@ucf.edu)
2019	**LEWIS JW**, Lama A. "On-stage lecture demonstrations to engage first year medical students in neurobiology and gross anatomy." SGEA Oral presentation (52 of 240 abstracts). Orlando, FL.
2019	Lama A, **LEWIS JW**, Murray AM. "Redesigning the Traditional Case Study Presentation: First Year Medical Neurobiology Course Student Teaching Projects that Prepare our Faculty of the Future." SGEA Poster presentation, Orlando, FL
2019	**LEWIS JW**, Lama A. "Large group lecture demonstrations to engage first year medical students in gross anatomy and neurobiology". Poster presentation. IAMSE Roanoke, VA.

Teaching experience:

High School and Grade School Outreach Education:



1995 - 1998	Brain Awareness Week participant. Introducing elementary school students (K-5) to biology of the brain; both in Gateway Elementary school, St. Louis, and Milwaukee area schools.
2002 - 2004	Urban Ecology Center weekend volunteer, teaching science ("brains") and ecology to K-12, six to eight days per year. Milwaukee, WI. http://my.execpc.com/~uec/more/more.html
2004	Taught Neuroscience "Left vs. right brain function" (Nov 18) to the Health Sciences & Technology Academy (HSTA; http://www.wv-hsta.org/). Fairmont, and surrounding

High Schools in West Virginia participated. Curriculum coordinator Jenny Bardwell, jbardwell@hsc.wvu.edu)

2005 Presider for the 11th annual (Apr. 16) HSTA symposium for high school students (Jenny Bardwell, HSTA Curriculum Coordinator jbardwell@hsc.wvu.edu)

2006, 2009 Served as a mentor for Morgantown High School Groundhog Job Shadow Day with seniors (Zach, Anica) who observed and participated in experimental procedures in the fMRI neuroimaging facilities at WVU. (http://www.ahla.com/gallery_gjsd.asp).

2007 Served as a mentor/advisor for a senior (Mathew) at a Morgantown area High School (2 weeks). Coordinators: Shirley Pugh, Brenda Higgs.

Undergraduate Education:

1990 - 1992 Three years as Teaching Assistant (as a graduate student) for the Introductory Neurobiology course at Caltech (appx. 12 students each year) under Dr. David Van Essen (vanessen@v1.wustl.edu). Included 1 lecture each week plus neurobiology demonstrations.

2005- 2017 Mentor for SUmmer Research Intern (SURI) students at WVU (see list of mentored students below). (http://www.hsc.wvu.edu/wvucn/SURI2007.php), designed for college students from around the country to conduct 10 weeks of intensive research in a laboratory at the West Virginia University.

2006 - 2010 Guest lecturer for Speech Pathology & Audiology (course SPA341) at WVU, to undergraduates lecture on the topic of Hearing Science: "FMRI of human auditory systems", course (~60 students; Coordinator, Dr. Norman Lass; NJLass@mail.wvu.edu)

2006 Lecturer for Introduction to Bioengineering (EE425/MAE473) to WVU undergraduates (2 lectures) on acoustics, the human auditory system, and neuroimaging (Coordinator, Dr. Susan K. Lemieux slemieux@hsc.wvu.edu, now at sklemieux@psu.edu)

2008 – 2012 Instructor for annual Introductory Physiology (Phys 241) undergraduate course (~360 students) at WVU, teaching neurons to systems level neuroscience (9 lecture hours/semester). Coordinator Dr. Stan Yokota. syokota@hsc.wvu.edu

2012 – present Nursing PALM207 (formerly NBAN207) Human Anatomy & Physiology II, Instructor for neurobiology Unit lectures and Gross Lab, plus Gross Lab facilitator for entire course. Coordinator Dr. Heather Billings. Department of Neurobiology & Anatomy.

2015, 2017 "Gross Lab Day" for nursing and physical therapy students at Pennsylvania State University, Fayette campus (~40 students). Coordinator Dr. Heather Billings. Department of Neurobiology & Anatomy.

Graduate Medical Education:

2008 - 2009 Served as lab facilitator for Gross Anatomy lab (neuroanatomy labs) for medical students at WVU. Coordinator Dr. Adrienne Salm, PhD. asalm@hsc.wvu.edu

2012 – 2013 Problem Based Learning (PBL) for 1st year Medical Students at WVU. Coordinators Dr. Steve Hardy, PhD., and Dr. Heather Billings, PhD.

2012 – present Human Structure (PALM801, formerly NBAN703) for 1st year Medical Students at WVU. Teaching Head & Neck lectures and Gross Anatomy Laboratory facilitator. Coordinator Dr. Holly Ressetar, PhD.

2012 – 2013 Medical Neurobiology (CCMD775) for 1st year medical students. Coordinator Dr. Richard Dey, PhD.

2014 – present Course coordinator for Medical Neurobiology CCMD813 (formerly CCMD775) for 1st year medical students at WVU, which entails an 11-week intensive overview of clinically oriented neurobiology.

2013 Judge for the annual WVU Children's Hospital fundraiser through the Medical Student Talent Show. Hosted by Masih Ahmed (M4).

2014 Instructor for Higher Function organization (NBAN795). Coordinator Dr. Richard Dey.

2014 – 2016 Member of M1 and M2 Subcommittee for aligning teaching/learning objectives across the two year didactic curriculum for medical students at WVU. Coordinator Dr. Jeffery Hogg, MD.

2022 Instructor for Physician Assistant program (PA547), teaching retina and visual system. Coordinators. Dr. Ashley Petrone and Dr. Mary Beth Mandich

Graduate Student Education:

1997 - 1998 Medical College of Wisconsin. Taught selected lectures on neurobiology of audition for Advanced Systems Neurobiology (Coordinator Dr. Ted DeYoe; deyoe@mcw.edu).

1997 - 2004 Informal advisor for 4 graduate students in the lab of Dr. Ted DeYoe at the Medical College of Wisconsin.

2001 Served as judge for 11th Annual Student Research Poster Session for the Graduate school of biomedical sciences at Medical College of Wisconsin.

2004 - 2008 Introduction to Systems Neurobiology, WVU Graduate lecture: presented seminars on human brain evolution (Dr. Al Berrebi, coordinator; aberrebi@hsc.wvu.edu, and subsequently Dr. Aina Puce; apuce@hsc.wvu.edu, now ainapuce@indiana.edu)

2005 Taught Systems Neuroscience to graduate students at WVU (Coordinator, Dr. Aina Puce; ainapuce@indiana.edu)

2005 - 2007 Advanced Systems Neuroscience graduate course at WVU. Presented multiple lectures on current research in the fields of auditory neuroscience and brain-machine interfaces (Coordinator, Dr. Aina Puce; ainapuce@indiana.edu)

2007 – 2018 Moderator of the graduate student Neuroscience Journal Club (weekly meeting during Fall and Spring semesters at WVU). Neuroscience curriculum coordinator, Dr. Al Berrebi, aberrebi@hsc.wvu.edu http://www.hsc.wvu.edu/som/resoff/gradprograms/neurosci_curriculum.asp)

2012 Served as a judge for the Van Liere Memorial Convocation and Health Sciences Research Day at WVU (March 9th). Judged poster presentations.

2015 – present Fundamentals of Neurobiology 1 and 2 (NSCI793B, formerly NBAN795). Instructor of lectures pertaining to brain function. Coordinator Dr. Aric Agmon (formerly Dr. Dick Dey).

Health Professionals Education:

2006 - 2015 Lecturer for Residents in Radiology (annual 1 hour lecture) on 3T fMRI research conducted at WVU. (Coordinator, Dr. Raymond R. Raylman, rraylman@hsc.wvu.edu)

2022 Webinar for the Medical Student Neurosurgery Training Center. An international Neurosurgery Interest Group. Topic (1 hour; n=45 participants) on Cortical Function and Localization geared for M1-M4 medical students. Coordinator. Dr. Divine Nwafor; https://www.neurosurgerytraining.org/?mn=uqoeYIVCL4t12SfZh3CqtePp5z0SxMY-p12L.qhYS8t7jiYZCaHeb

Postgraduate Courses and Workshops:

1999 - 2003 Instructor for the AFNI course (Analysis of Functional NeuroImages; twice per year): Introducing use of functional magnetic resonance imaging and analyses to users from all over the US. Medical College of Wisconsin, WI. http://www.firc.mcw.edu/course/ (course director Dr. Steve Rao, PhD).

Community Service Activities:

2002 - 2004 Urban Ecology Center weekend volunteer, teaching science ("brains") and ecology to K-12, six to eight days per year. http://my.execpc.com/~uec/more/more.html

2004 Volunteer at the Center for Avian Rehabilitation, for exotic birds.

2010 - 2011 Serve as volunteer at South Middle School in Morgantown. ~1.5 hours' time assisting each week. Supervisor; Charlene Bowen: http://boe.mono.k12.wv.us/SouthMiddle/pages/administration.htm

2014 - present Faculty sponsor of **CATALYST** (Community Action Team Accelerating Learning for Youth in Science and Technology) for WVU School of Medicine outreach program https://medicine.hsc.wvu.edu/md-student-services/organizations/catalyst/, where medical students and I travel to elementary and middle schools throughout the state of West Virginia to inspire interest in science and medicine. Student coordinators: Victor Greco, Kathy Barker, Sherif Ibrahim and Zach Claudio.

Grades 4-8th at Aurora Elementary/Junior high school (rural WV outreach). Nov 7th, 2014 School Principal Debbie Hibbs dhibbs@k12.wv.us

Grades 4-5 at Cheat Lake Elementary school (Nov 6th, 2015). Medical student president Sherif Ibrahim and Zach Claudio.

Grade 5, Cheat Lake Elementary school (Oct 14, 2016).

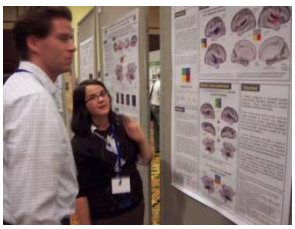
2019 Volunteer for Girl Scout World Thinking Day event (Monongalia County Girl Scouts), illustrating medically-related human brain and spinal cord tissues to scouts (80 or so) in conjunction with other troop-level activities. Morgantown, WV. Feb 23rd, 2019. Coordinator: Carrie Smith-Bell (carrie.smithbell@gmail.com)

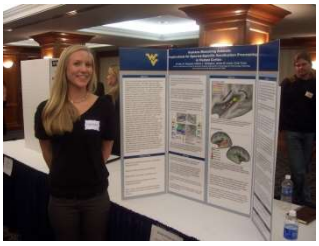
2019 Volunteer for the Pediatric & Adolescent Interest Group (PAIG) annual Medical Spelling Bee at WVU. Served as a moderator for this fundraising event. (coordinator Taylor Cunningham; PaigWVU@gmail.com)

University Mentoring Services (at West Virginia University):

PhD thesis committee member:

(Chair) Jillian Hardee, West Virginia University (2003-2009)
(Chair) Amy Prostko, West Virginia University (2004-2012)
(Chair) William J. Talkington, my laboratory, West Virginia University (2007-2013)
Brandon Rumsberg, Dept. Computer Sciences & Electrical Engineering (2007-2014)
Richard Felix, Dept. Neurobiology & Anatomy, WVU (2008-2011)
Garret C. Cooper, Dept. Neurobiology & Anatomy, WVU (2007-2010)
Josh Barker, Dept. Neurobiology & Anatomy, WVU (2004-2007)
Jesse Thompson, Dept. Physiology & Pharmacology, WVU (2011)
Neetu Nair WVU (2012- 2014)
Margeuax Gray (Schade) (2013-2017)
Christopher Bauer WVU (2012- 2017)
(Chair) Paula J Webster, Dept. Neurobiology & Anatomy, WVU (2012- 2019)
Gina Sizemore (2016-2018)
Anton Sobinov (2017-2019)
(Chair) Tyler McGauhey (2020-present)
Anna Korol (2022-present)





Master's committee member:

Michele Poland, Rider laboratory, WVU (2006-2008)

Laboratory Personnel Mentored:

Research Assistants

Nathan A. Walker, WVU (2004-2007)
Chris Frum, MS WVU (2007-2018)

Post-Doctoral Fellows

Alexandra S. Kadner, PhD, (2016)

Graduate students:

Nicole Hertel (2004-2006)
William J. Talkington (2007-2013)
Paula J. Webster (2012-2019)



Masters students:

Emily Kemper (2021)

Medical Internship research rotations:

Garret C. Cooper, MD, PhD, WVU (2011)



Medical Resident research rotations:

Garret C. Cooper, MD, PhD, Resident; WVU (2013)
Sam Z. Salmassi, MD MS2, WVU (2020)

Graduate laboratory rotation students:

Lynnsey Carroll
Jerry Audet
Alisa Elliot
Sylwia Mrowka
Margeaux Gray (Dept. Psychology) T32 training 2013-2014, adjunct 2014-2016
Richard Nolan
Helen (Addie) Boyd-Pratt (2021-

Undergraduate students mentored at or affiliated with WVU:

Amanda Vest	Dept. Speech Pathology & Audiology	PhD program at Vanderbilt
Ben Saunders	Dept. Biology	PhD program in Michigan
Catherine Tallaksen	Dept. Physics	
Brandon Smith	Dept. Biology	Dentistry School at WVU
Lauren Tabor	Dept. Speech Pathology & Audiology	
Stephanie Khoo	Dept. Biology	Foreign Language student
Joseph Ta	Dept. Biology	undergrad at WVU
Ting Wong (2011)	William and Mary University	
Alex Ashraf (2012-14, 2016)	Dept. Biology	undergrad at WVU
Alex Tranchini (2013)	Dept. Biology	PT school in Pittsburgh
Paula Pacurari (2014)	Dept. Engineering	to medical school
Sean Snyder (2015)	Dept Exercise Physiology	to medical school
Nadia Mardmomen (2015-16)	Dept. Biology	to dental school
Jessica Patterson (2015-16)	Dept. Biology	to medical school
Kathryn Baker (2015-16)	Dept. Biology	to medical school
Alyssa Chafin (2016-2017)	Dept Exercise Physiology	undergrad at WVU
Lauren Rentz (2018-2019)	Dept Exercise Physiology	undergrad at WVU
Michelle Coleman (2019-2021)	Dept Exercise Physiology	undergrad at WVU
Monica Bowers (2021)	(Communication Sciences & Disorders)	
Emma Belford (2021)	Dept Biology (Neuroscience major)	
Molly Summers (2021- 2022)	Dept Biology (Neuroscience major)	

Summer Undergraduate Research program students (SURI / SURE/ INTRO/ and INBRE):

William J. Talkington (2005, 2006)	PhD program at WVU, then post-doc at WVU
Audrey Jajosky (2006)	MD/PhD program at WVU
Lauren R. Engel (2007)	MD program in Colorado
Laura M. Skipper (2008)	PhD program at Temple University
Kristina M. Rapuano (2009)	PhD program at National Institutes of Health
Stephen Gray (2010)	PhD program at University of Chicago
Susannah Engdahl (2011)	PhD program at Univ. Michigan
Hayley N. Still (2013)	Undergrad at Lewis & Clark college, OR
Matthew Preda (2014)	Undergrad at Wheaton College
Magenta Silberman (2015)	PhD program at Utah
Gabriela Valencia (2016)	Undergrad at Layola University, Chicago
Andrew Forino (2017)	WVU INBRE program
Matt Csonka, (2017)	Medical Student, INTRO program
Sam Salmassi (2018)	Medical Student, INTRO program
Molly Layne (2018)	SURE Biomedical Engineering student
Yumi Tse (2019)	INBRE Biology student (Concord University)
Michelle Coleman (2020)	SURE Exercise Physiology
Katerina Pawlowski (2021, 2022)	INBRE
Shabrina Jarrell (2021)	INTRO program for MS1 students
Max Hurley (2022)	INTRO program for MS1 students

Invited Lectures, Presentations & Symposium talks:

International

"Parietal cortex connectivity in the macaque" Lyon, France. Hosted by Dr. Jean-Rene Duhamel. Sept, 1998.

"Cortical pathways for multisensory processing in macaque and human." Naples, Florida. Satellite meeting: Multisensory Interactions Subserving Orienting Behavior. Hosted by Dr. Josef Rauschecker. April 14-16, 2002

"Environmental and spatial sound processing in humans, as assessed by fMRI" New Delhi, India. Hosted by Dr. Jaganathan at the All India Institute of Medical Sciences, Oct, 2004.

"Multimodal processing of hand-manipulated tool sounds." Seiriken/Sokendai International symposium on cross-modal integration and plasticity; Okazaki, Japan. Hosted by Dr. Norihiro Sadato. March, 2006

"Cortical processing of auditory objects and action knowledge." Symposium on Concepts, Actions, and Objects (CAOS) Rovereto, Italy. Hosted by Drs. Alex Martin, Alfonso Caramazza, Melvyn Goodale, Bradford Mahon. April 19-22, 2007.
http://www.cimec.unitn.it/events/caos/index.htm

"Cortical processing of auditory objects and action knowledge." Hosted by John Paul Minda, PhD., University of Western Ontario, London Ontario, Canada. Nov. 30, 2007.
http://www.mindalab.com/

"Cortical networks for perception of real-world action sounds." 30th International Congress of Psychology (ICP) Serving Humanity. Cape Town, Africa. Hosted by Dr. Claude Alain, PhD., http://www.icp2012.com/ July 2012.

"What might one need to run an "AMPET lab?" Panelist for the Wearable PET: Society for Neuroscience Satellite Symposium, San Diego Convention Center, Nov 12, 2016.

National

"Parietal cortex connectivity in the macaque" Milwaukee, Wisconsin. Hosted by Dr. Edgar DeYoe, June 26, 1997.

"Parietal cortex connectivity in the macaque" Madison, Wisconsin. Hosted by Dr. John Brugge. Nov, 1997.

"Cortical pathways for multisensory processing in macaque and human." Naples, Florida. Satellite meeting: Multisensory Interactions Subserving Orienting Behavior. Hosted by Dr. Josef Rauschecker, April 14-16, 2002

"Cortical pathways for multisensory processing in macaque and human." Madison, Wisconsin. "Hearing and do-nuts". Hosted by Dr. Doris Kistler, May 10, 2002.

"Cortical pathways for multisensory processing in macaque and human." Orangeburg, NY. Nathan Kline Institute. Hosted by Dr. Charles Schroeder, May 15, 2002.

"Cortical networks for sound recognition in the congenitally blind" Charleston, SC. SE IDeA Regional Meeting COBRE. Hosted by Dr. Lucia Pirisi-Creek, Nov. 10, 2009.

"Cortical networks for hearing perception in humans, as revealed through fMRI". Pennsylvania State University, PA. Social, Life, & Engineering Sciences Imaging Center (SLEIC). Hosted by Dr. Susan K. Lemieux, March 29, 2010.

"Cortical networks for hearing perception and cognition" University of Iowa graduate student seminar series. Hosted by Dr. Dan Tranel, Sept. 7, 2010.

"Tools and Speech: Perspectives on human brain function from hearing perception". Stone Age Institute, in association with Indiana University. Hosted by Drs. Nick Toth and Kathy Schick. May 5, 2011.

"On-stage lecture demonstrations to engage first year medical students in neurobiology and gross anatomy." SGEA Oral presentation (52 of 240 abstracts). Orlando, FL. March 2019

Panelist for the Medical Education Teaching and Learning (METL) Peer Observation workshop at the Southern Group on Education Affairs (SGEA) meeting https://www.aamc.org/members/gea/regions/sgea/ Orlando, FL March 28-30, 2019. Coords. Jean Bailey (Jean.Bailey@vcuhealth.org) Andrea Berry (Andrea.Berry@ucf.edu)

Regional

Regular invited speaker (1-2 per year; 2004-present) at the WVU Neuro-Blitz seminar series. Hosted by Dr. George Spirou.

"FMRI of the human brain while processing environmental sounds". Morgantown WV. Dept. Biology at West Virginia University. Feb 20, 2006

"A comparison of how the brains of the sighted and blind process every day natural sounds" Morgantown, West Virginia. Hosted by Jessie Rayl (president) & Debbie Brooks. eagle.wings@wvdsl.net Mountain State Council of the Blind (MSCB) annual convention. Sept. 14, 2008.

"What you can do with a 3 Tesla scanner" Colloquium talk at the Dept. Psychology at WVU. Hosted by Dr. Hawley Montgomery-Downs. Nov. 3, 2008.

"Timely teaching tips". Hosted by C.B. Wilson, Associate Provost for Academic Personnel at WVU (assisted by Shirley Nichter, Shirley.Nichter@mail.wvu.edu). Oct 16, 2012.

"NSF idol" ("Dermatome man"). Competition promoting our science to members of the WVU Center for Neuroscience at the annual retreat. Hosted by Dr. George Spirou, PhD, July 19, 2015 at Oglebay resort.

Research Interests:

My research expertise involves functional magnetic resonance imaging (fMRI), and electroencephalography (EEG) plus evoked response potential (ERP) imaging with human participants. My research interests range from systems-level visual, auditory, and multisensory processing, to studies of hearing perception, and to advancing cognitive models of object and action knowledge representations. More recent interests include examining cortical plasticity in sensory systems related to (1) malformation of cortical development in epilepsy patients, (2) aberrant networks of patients suffering from chronic headache pain, (3) the study of multisensory processing in individuals with autism spectrum disorder, and (4) the study of conceptual knowledge and language representation in bilingual (Chinese/English) adults so as to advance models of cognition.

Original Published Peer-Reviewed Articles (Publications in chronological order):

A Partial List of Published Work in MyBibliography (updated Sept 2021)
https://www.ncbi.nlm.nih.gov/myncbi/james.lewis.4/bibliography/public/

LEWIS JW and Olavarria JF (1995) Two Rules for Callosal Connectivity in Striate Cortex of the Rat. *J. Comp. Neurology* 361:119-137. (Link)

Gallant JL, Connor CE, Rakshit S, **LEWIS JW**, and Van Essen DC (1996) Neural Responses to Polar, Hyperbolic, and Cartesian Gratings in Area V4 of the Macaque Monkey. *J. Neurophysiology* 76(4): 2718-39. (Link)

Drury, HA, Van Essen DC, Anderson CH, Lee C, Coogan T, and **LEWIS JW** (1996) Computerized mappings of the cerebral cortex: A multi-resolution flattening method and a surface-based coordinate system. *J. Cognitive Neuroscience* 8(1):1-28. (Link)

LEWIS JW, Burton H, and Van Essen DC (1999) Anatomical evidence for the posterior boundary of Area 2 in the Macaque Monkey. *Somatosensory and Motor Res*. 16(4):382-390. (Link)

LEWIS JW and Van Essen DC (2000) Mapping of architectonic subdivisions in the Macaque Monkey, with emphasis on parieto-occipital cortex. *J. Comp. Neurol*. 428:79-111. (Link) (pdf)

LEWIS JW and Van Essen DC (2000) Cortico-cortical connections of visual, sensorimotor, and multimodal processing areas in the parietal lobe of the Macaque Monkey. *J. Comp. Neurol*. 428:112-137. (pdf)

LEWIS JW, Beauchamp, MS, and DeYoe EA (2000) A comparison of visual and auditory motion processing in human cerebral cortex. *Cerebral Cortex* 10:873-888. (pdf)

Van Essen DC, **LEWIS JW**, HA Drury, N Hadjikhani, RBH Tootell, M Bakircioglu, and Miller MI (2001) Mapping visual cortex in monkeys and humans Using Surface-based Atlases. *Vision Research* 41(10-11):1359-78. (pdf)

LEWIS JW, Wightman F, Brefczynski JA, Phinney RE, Binder JR, DeYoe EA (2004). Human brain regions involved in recognizing environmental sounds. *Cerebral Cortex* 14:1008-21. (Link) (pdf)

Salvan CV, Ulmer JL, DeYoe EA, Wascher T, Mathews VP, **LEWIS JW**, and Prost RW (2004) Visual object agnosia and pure word alexia: Correlation of fMRI and lesion localization. *J. Comp. Assisted Tomography*. 28(1):63-67. (Link)

LEWIS JW, Brefczynski JA, Phinney RE, Janik, JJ, DeYoe EA (2005). Distinct cortical pathways for processing tool versus animal sounds. *Journal of Neuroscience* 25(21):5148-5158. (Link) (pdf)

LEWIS JW, Phinney RE, Brefczynski JA, DeYoe EA (2006) Lefties get it "right" when hearing tool sounds. *J. Cog. Neuroscience* 18(8):1314-1330. (Link) (Cover art)

Huddleston WE, **LEWIS JW**, Phinney RE, DeYoe EA (2008) Auditory and visual attention-based apparent motion share functional parallels. *Perception & Psychophysics* 70(7):1207-1216. (Link)

Brefczynski-Lewis JA, Datta R., **LEWIS JW**, DeYoe EA (2009) The topography of visuospatial attention as revealed by a novel visual field mapping technique. *J. Cog. Neuroscience* 21(7):1207-1216. (pdf)

LEWIS JW, Talkington WJ, Walker NA, Spirou GA, Jajosky A, Frum C, Brefczynski-Lewis, JA (2009) Human cortical organization for processing vocalizations indicates representation of harmonic structure as a signal attribute. *J. Neuroscience* 29(7):2283-2296. doi:10.1523/JNEUROSCI.4145-08.2009 (Link)

Engel LR, Frum C, Puce A, Walker NA, **LEWIS JW** (2009) Different categories of living and non-living sound-sources activate distinct cortical networks. *NeuroImage* 47:1778-1791. doi:10.1016/j.neuroimage.2009.05.041 (Link)

Ortigue S, Bianchi-Demicheli F, Patel N, Frum C, **LEWIS JW** (2010) Neuroimaging of Love: fMRI meta-analysis evidence towards new perspectives in sexual medicine. *J. Sexual Med*. 11:3541-3552 doi: 10.1111/j.1743-6109.2010.01999.x. (Link)

LEWIS JW, Talkington WJ, Puce A, Engel LR, Frum C (2011; Epub 2010) Cortical networks representing object categories and high-level attributes of familiar real-world action sounds. *J. Cog. Neuroscience* 23(8):2079-2101. (Link)

LEWIS JW, Frum C, Brefczynski-Lewis JA, Talkington WJ, Walker NA, Rapuano KM, Kovach AL (2011) Cortical network differences in the sighted versus early blind for recognition of human-produced action sounds. *Human Brain Mapping*. 32:2241-2255. doi:10.1002/hbm.21185. (Link)

Cacioppo S, Bianchi-Demicheli F, Frum C, Pfaus JG, **LEWIS JW** (2012) The common neural bases between sexual desire and love: a multilevel kernel density fMRI analysis. *J. Sexual Med*. 9(4):1048-54 doi: 10.1111/j.1743-6109.2012.02651.x. Epub 2012 Feb 21 (Link)

LEWIS JW, Talkington WJ, Tallaksen K, Frum CA (2012) Auditory object salience: human cortical processing of non-biological action sounds and their acoustic signal attributes. *Frontiers in Systems Neuroscience*. Vol. 6, Article 27 doi:10.3389/fnsys.2012.00027

Talkington WJ, Rapuano KM, Hitt L, Frum CA, **LEWIS JW** (2012) Humans mimicking animals: A cortical hierarchy for human vocal communication sounds. *J. Neuroscience* 32(23):8084-8093.

Juan E, Frum C, Bianchi-Demicheli F, Want Y, **LEWIS JW**, Cacioppo S (2013) Beyond Human Intentions and Emotions. *Frontiers in Human Neuroscience* 7(99)1-14 doi: 10.3389/fnhum.2013.00099

Cacioppo S, Couto B, Bolmont M, Sedeno L, Frum C, **LEWIS JW**, Manes F, Ibanez A, Cacioppo JT (2013) Selective decision-making deficit in love following damage to the anterior insula. *Current Trends in Neurology.*

Cacioppo S, Frum C, **LEWIS JW**, Manes F, Ibanez A, Cacioppo JT (2013) A quantitative meta-analysis of functional imaging studies of social rejection. *Scientific Reports*. 3(2027):1-3

Talkington WJ, Taglialatela JP, **LEWIS JW** (2013) Using naturalistic utterances to investigate cortical pathways for processing communication sounds in humans and non-human primates. Invited Review for *Hearing Research.* 305:74-85

Geangu E, Quadrelli E, **LEWIS JW**, Macchi Cassia V, & Turati, C. (2015). By the sound of it. An ERP investigation of human action sound processing in 7-month-old infants. *Developmental Cognitive Neuroscience*. 12(2015):134-144

Bauer CE, Brefczynski-Lewis JA, Marano G, Mandich MB, Stolin A, Martone P, **LEWIS JW**, Jaliparthi G, Raylman RR, Majewski S (2016). Concept of an Upright Wearable Positron Emission Tomography (PET) Imager in Humans. *Brain & Behavior*. 6:e00530

Webster PJ, Skipper-Kallal JM, Frum C, Still HN, **LEWIS JW** (2017) Divergent human cortical regions for processing distinct acoustic-semantic categories of natural sounds: animal action sounds versus vocalizations. *Frontiers in Neuroscience*. 10(Article 579):1-18. Doi 10.3389/fnins.2016.00579.

Brefczynski-Lewis JA, **LEWIS JW** (2017) Auditory object perception: A neurobiological model and prospective review. Invited Review, Neuropsychologia 105:223-242.

LEWIS JW, Silberman MJ, Donai JJ, Frum CA, Brefczynski-Lewis JA (2018) Hearing and orally mimicking different acoustic-semantic categories of natural sound engage distinct left hemisphere cortical regions. Brain & Language 183:64-78 doi: 10.1016/j.bandl.2018.05.00

Pazzaglia M, Galli G, Scivoletto G, **LEWIS JW**, Giannini AM, and Molinari M (*2018*) "Embodying functionally relevant action sounds in patients with spinal cord injury" (reference number: SREP-18-23978), Scientific Reports.

Bauer CE, **LEWIS JW**, Brefczynski-Lewis JA, Frum C, Schade-Gray M, Haut M, Montgomery-Downs H (2019). Breastfeeding Duration is Associated with Regional, but not Global, Differences in White Matter Tracts. *Brain Sciences 10(1) https://doi.org/10.3390/brainsci10010019*

Webster PJ, Frum C, Kurowski-Burt A, Wen S, Bauer C, Ramadan J, Baker K, **LEWIS JW** (2020). Processing of real-world, dynamic natural stimuli in autism is linked to corticobasal function. *Autism Research* https://doi.org/10.1002/aur.2250 PMID*: **31944557***

Nolan R, Brandmeir N, Tucker E, Magruder J, Lee M, Chen G, **LEWIS JW** (2020). Functional and resting-state characterizations of a periventricular heterotopic nodule associated with epileptogenic activity. *Neurosurgical Focus* 48(2) doi: 10.3171/2019.11.FOCUS19765. PMID: **32006947**

Klichowski M, Nowik A, Kroliczak G, **LEWIS JW** (2020). Functional lateralization of tool-sound and action-word processing in a bilingual brain. *Health Psychology Report* HPR-00318-2019-02

LEWIS JW, Lama A, Paserba B, Hurst B (2020) Interactive Large Group Lecture Demonstrations: Dramatization of medical neurobiology concepts to improve student perception of understanding fluid mechanisms of the central nervous system. Medical Science Educator DOI: https://doi.org/10.1007/s40670-020-00953-w

Talkington WJ, Donai J, Kadner AS, Layne ML, Forino A, Wen S, Gao S, Gray MM, Ashraf A, Valencia G, Smith B, Khoo S, Gray S, Lass N, Brefczynski-Lewis J, Engdahl S, Graham D, Frum C, **LEWIS JW** (2020) Electrophysiological evidence of early cortical sensitivity to human conspecific mimic voice as a distinct category of natural sound. *J. Speech, Language, and Hearing*. https://doi.org/10.1044/2020_JSLHR-20-00063 PMID: 32936717

Frey J, Neeley B, Umer A, **LEWIS JW**, Lama A, Pawar G, Murray A (2021) Neuro Day: An innovative curriculum connecting medical students with patients. *Neurology 96(10):e1482-e1486*.

Csonka M, Mardmomen N, Webster PJ, Brefczynski-Lewis JA, Frum C, **LEWIS JW** (2021) Meta-analyses support a taxonomic model for representations of different categories of audio-visual interaction events in the human brain. *Cerebral Cortex Communications* (weblink)

Valencia G, Khoo S, Wong T, Ta J, Hou B, Barsalou L, Hazen K, Lin HH, Wang S, Brefczynski-Lewis JA, Frum C, **LEWIS JW** (2021) Chinese-English bilinguals show linguistic-perceptual links in the brain associating short spoken phrases with corresponding real-world natural action sounds by semantic category. *Language, Cognition and Neuroscience*.

Lama AM, Murray AM, Frey J, Neeley B, **LEWIS JW** (2021) Using a Mock Rounds Model and Neurology Patients to Teach Neurological Exam Skills in a Medical Neurobiology Course. *Med Sci Educ*. https://doi.org/10.1007/s40670-021-01345-4

Submitted manuscripts:

LEWIS JW, Lama A, Hogg JP, Boo S, Tucker ES, Brown CM, Zdilla MJ, Petrone A, Lambert HW, Agmon A, Billings H, Roth L, Patterson B, Palmer B (2022) Online interactive medical neuroimaging interactive exercise for medical students to identify human brain structures. Annals of Anatomy (in revision).

Book Chapters:

Calvert GA and **LEWIS JW** (2004) Hemodynamic studies of audio-visual interactions. Invited, peer-reviewed book chapter in: Handbook of Multisensory Processing. Section E. Eds. Calvert, GA, Spence, and BE Stein, eds. MIT Press, Cambridge, MA. Chapter 30:483-502. (Link)

LEWIS JW (2010) Audio-visual perception of everyday natural objects—hemodynamic studies in humans. Invited, peer-reviewed book chapter in: Multisensory object perception in the primate brain. Eds. MJ Naumer, J Kaiser. Springer, Oxford University Press. Chapter 10:155-190. (Link) (cover art)

Invited Reviews:

LEWIS JW (2006) Cortical networks related to human use of tools. *The Neuroscientist*. June 1st 12(3):211-231. DOI: 10.1177/1073858406288327 (pdf) (cover art)

Patents and Patent Applications:

US Patent Application filed 03/14/2013 to the United States Patent and Trademark Office (Application No. 13/827,557) "Apparatus and implementation method of a set of universal compact portable MR-compatible PET inserts to convert whole-body MRI scanners into organ-specific hybrid PET/MRI imagers." Majewski S, Proffitt J, **LEWIS JW**, Brefczynski-Lewis JA, Stolin A.

US Patent approval 12/05/2019 WVURC No. 609 US Patent App. 13/827,557 "Apparatus and Implementation Method of a Set of Universal Compact Portable MR-Compatible PET Inserts..." 0074539-000018

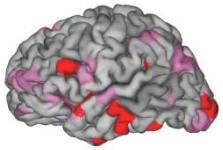
Museum showcases & popular magazines (Invited):

American Museum of Natural History (2006-present) has been showcasing work from the above invited review article on human tool use, as part of the Human Origins permanent exhibit.
http://www.amnh.org/exhibitions/permanent/humanorigins/human/tools4.php
http://www.amnh.org/exhibitions/permanent-exhibitions/human-origins-and-cultural-halls/anne-and-bernard-spitzer-hall-of-human-origins

Scientific American Magazine (February 2011 issue) featured a "last page" graphic and blurb "Your Brain in Love" created by my laboratory. This image and results were based on a recent publication (Ortigue et al., 2010 cited above).
http://www.scientificamerican.com/article.cfm?id=your-brain-in-love-graphsci

Scientific American Web Exclusive Graphic (Feb 14, 2011). Based on Ortigue et al., 2010
http://www.scientificamerican.com/article.cfm?id=graphic-science-passionate-love-in-the-brain

Graphic art featured in the book: Cognitive Neuroscience, 4th ed. Editors: Michael Gazzaniga, Richard Ivry, and George Mangun. W.W. Norton & Company 1/4 page, inside text (Dec, 2012)



Graphic art featured in Brazilian Journal:

Graphics for Medicalexpress web article (Feb 14, 2014) featuring our collaborative research on neuroscience of love. http://medicalxpress.com/news/2014-02-brain-sweet-neurological-patient.html

Autism Crowd Funding aired on Channel 12 WBOY news. March 2, 2015
http://www.wboy.com/story/28242051/wvu-researchers-create-crowd-funding-campaign-for-autism-studies and link to our CrowdSource funding website:
http://wvuautismresearch.kintera.org/faf/home/default.asp?ievent=1126357

Theses:

LEWIS JW (May, 1989) Ergothioneine Utilization Mediated by Plasmid-Borne Genes in Agrobacterium Radiobacter. Pennsylvania State University. Undergraduate Honors Thesis

LEWIS JW (May, 1997) The Intraparietal Sulcus of the Macaque and Connected Cortical Regions: Anatomical Parcellation and Connections Throughout the Hemisphere. Caltech PhD Thesis.

Abstracts presented, Peer-reviewed:

Janik JJ, **LEWIS JW**, Ropella KM, DeYoe EA (2004) Bispectral analysis for different categories of natural sounds. *Biomedical Engineering Soc.* #712.

Abstracts presented:

LEWIS JW and Olavarria JF (1990) Topography of interhemispheric connections throughout striate cortex in rat. *Soc. Neurosci. Abstr.* 16: #295.11

Olavarria JF and **LEWIS JW** (1992) The distribution of callosal cells correlates with dense cytochrome oxidase stripes in V2 of the macaque monkey. *Soc. Neurosci. Abstr*. 18(1):293 #132.2

O'Brien BJ, Olavarria JF, **LEWIS JW**, and Brenowitz EA (1992) Neonatal enucleation increases the complexity of the visual callosal pattern in the hamster. *Soc. Neurosci. Abstr*. 18(2):1314 #556.2

LEWIS JW and Van Essen DC (1994) Connections of area VIP with area MIP and other architectonically identified areas of the intraparietal sulcus in macaque monkeys. *Soc. Neurosci. Abstr*. 20(1):774 #324.11

Drury HA, Van Essen DC, Anderson C, Lee C, Coogan T, and **LEWIS JW** (1995) Computerized methods for flattening the cerebral cortex. *Human Brain Mapping conference* Suppl. (1):65

LEWIS JW and Van Essen DC (1996) Connections of visual area VIP with somatosensory and motor areas of the macaque monkey. *Soc. Neurosci. Abstr.* 22(1):398 (#160.4)

Van Essen DC, Drury HA, and **LEWIS JW** (1998) Comparisons among cortical partitioning schemes within and across species using surface-based atlases. *Neuroimage; Human Brain Mapping conference* 7(4):S741.

Van Essen, DC, Drury HA, and **LEWIS JW** (1998) Surface-based atlases for comparing partitioning schemes in macaque and human cerebral cortex. *Soc. Neurosci. Abstr*. 24(1):529 (#213.1)

LEWIS JW and DeYoe EA (1998) Cortical interaction of visual and auditory motion processing. *Soc. Neurosci. Abstr*. 24(1):529 #213.3

LEWIS JW and DeYoe EA (1998) Cortical Activation and Suppression in Response to Sound and Visual Motion Processing. *Neuroimage; Human Brain Mapping conference* 7(4):S378.

Brefczynski, J, **LEWIS JW**, and DeYoe EA (1999) Topography of attentional enhancement in human occipital and parietal cortex. *Soc. Neurosci. Abstr*. 25(1):287 #115.4

Drury, HA, Van Essen, DC, and **LEWIS JW** (1999) Towards probabilistic surface-based atlases of primate cerebral cortex. *Soc. Neurosci. Abstr*. 25(2):1929 #766.1

Saad, ZS, **LEWIS JW**, Ropella KM, DeYoe EA (2000) Delay of FMRI response in blood vessels versus parenchyma. *Soc. Neurosci. Abstr*. 26(1):821 #309.7

LEWIS JW, Wightman, FL., Junion Dienger JL, DeYoe EA (2001) FMRI Activation in response to the identification of natural sounds. *Soc. Neurosci. Abstr*. 27 Program #512.9.

LEWIS JW (2002) Cortical pathways for multimodal motion processing in macaque and human. Multisensory Interactions Subserving Orienting Behavior satellite meeting to Neural Control of Movement. (April 15) 12:5.

Schneider WE, Phinney RE, **LEWIS JW**, DeYoe EA (2002). Attention-based apparent motion: An auditory analog of a visual phenomenon. *Soc. Neurosci. Abstr*. 28 Program #715.7

LEWIS JW and DeYoe EA (2003). Animal vs tool-related sounds are processed differently in right vs left handed subjects. *Neuroimage; Human Brain Mapping conference* 19(2):#1488.

LEWIS JW, Janik JJ, Ropella KM, DeYoe EA (2004) Tool vs. vocalization sounds: spectral differences and fMRI responses. *Soc. Neurosci. Abstr* #752.6.

Hertel N, **LEWIS JW** (2006) Human cortical regions sensitive to the harmonic structure of natural sounds. Neuroimage *Human Brain Mapping conference* Vol 31(S1):#S844.

LEWIS JW and Walker NA (2006) Human cortical regions sensitive to the harmonic structure of animal vocalizations. *1st National IDeA symposium of Biomedical Research Excellence*, Abstr #346, pg C59.

LEWIS JW, Puce A, Engel LR (2008) Cortical processing of human vs. non-human categories of action sounds. *Neuroimage*14th meeting: *Human Brain Mapping conference* #694, Abstr#1229.

Talkington, WJ, **LEWIS JW** (2008) Harmonic sound processing in the human auditory system. *2nd National IDeA symposium of Biomedical Research Excellence*, Abstr #302.

LEWIS JW, Engel LR (2008) Different categories of action sounds are processed along different human cortical pathways. *2nd National IDeA symposium of Biomedical Research Excellence*, Abstr #280.

Skipper LM, **LEWIS JW** (2009) Cortical representation of different categories of biological sound. *Human Brain Mapping conference*. Abstr #2034.

LEWIS JW, Frum C, Walker NA, Brefczynski-Lewis JA, Kovach A (2009) Cortical pathways for recognition of real-world action sounds in the congenitally blind. *Human Brain Mapping conference*. Abstr #2029.

LEWIS JW, Rapuano KM, Frum C (2009) Cortical networks for sound recognition in the congenitally blind. 3nd Regional IDeA symposium of Biomedical Research Excellence, Abstr #NS-O7 (selected for oral presentation).

Ortigue S, Bianchi-Demicheli F, Frum C, **LEWIS JW** (2010) Beyond human sexual desire: An fMRI meta-analysis. *Cog. Neuroscience* Abstract #929.

Rapuano KM, Talkington WJ, Frum C, **LEWIS JW** (2010) Humans mimicking animals: Implications for species specific vocalization processing in human cortex. Columbia Undergraduate Science Journal; Research conference symposium at Pennsylvania State University. Abstract & Poster.

Talkington WJ, **LEWIS JW** (2010) Humans mimicking animals: Implications for species-specific vocalization processing in humans. *Soc. for Neurosci. Abstr* #15012; 275.15.

Juan E, Bianchi-Demicheli F, Frum C, **LEWIS JW,** Ortigue S, (2011) Beyond human intentions: A statistical Multi-Level Kernel Density fMRI analysis towards social neuroscience. *Soc. for Social Neurosci. Abstr* Poster#51.

LEWIS JW, Frum C, Talkington WJ, (2012) Human cortical regions for processing salient auditory objects and their acoustic signal attributes. *Human Brain Mapping conference (in Beijing, China)*. Abstract #978MT:7115

Galli G, Pazzaglia M, **LEWIS JW**, Scivoletto G, Molinari M, Aglioti S (2012) "Embodiment of functionally relevant action sounds in patients with lower spinal cord injury". CAOS, Workshop on Concept, Action and Objects. Rovereto, Italy

Wahi-Anwar, MW, Rotella JS, Gearhart AR, Little DR, **LEWIS JW**, Lemieux SK (2013) An inexpensive scanner-independent luminescent motion monitor for MRI. Research conference symposium at Pennsylvania State University.

Geangu E, Quadrelli E, **LEWIS JW**, Bolognini N, Cassia VM, Turati C (2014) In the World of Social Sounds. An ERP Investigation of Infant Processing of Human Action Sounds. International Conference on Infant Studies, Control ID: 1882672, Berlin, Germany.

LEWIS JW, Talkington JW, Smith B, Khoo S, Frum C, Graham DW, Schade M (2014) Auditory evoked potentials reveal harmonic structure as a signal attribute. *Soc. for Neurosci.* Washington D.C., USA Abstr#235.02

Webster PJ, Frum CF, **LEWIS JW** (2014) How the human brain is organized to process everyday real-world sounds ranging from vocalizations to sound-producing action events? *Soc. for Neurosci.* Abstr#388.08

Bauer, C. Brefczynski-Lewis J, **LEWIS JW**, Mandich, MB, Majewski, S. (2014) A novel upright low-dose brain imager: A new tool in neuroscience and its potential applications. *Soc. for Neurosci.*, November 2014.

Brefczynski-Lewis JA, Bauer C, **LEWIS JW**, Mandich, M, Majewski, S. (2014) Pilot testing of a PET insert for MRI: Preliminary results and clinical and research applications. *Soc. for Neurosci.* November 2014.

Montgomery-Downs HE, **LEWIS JW**, Brefczynski-Lewis J, Clawges H, Carey M, Hou B, Schade M, Tesser P, Frum C (2015) Infant Feeding Method and Pediatric Sleep-Disordered Breathing. Associated Professional Sleep Societies (SLEEP 2015).

Webster PJ, Frum CF, Burt A, **LEWIS JW** (2015) Individuals with autism develop adaptive neural mechanisms to integrate audiovisual information. West Virginia Clinical Translational Science Initiative meeting. Charleston, WV. Poster#13 (poster selected oral presentation by Ms Webster).

Webster PJ, Frum CF, Kurkowski-Burt A, **LEWIS JW** (2015) Delineating adaptive neural mechanisms in individuals with autism when processing unimodal vs. bimodal real-world stimuli using functional MRI. *Soc. for Neurosci.* Abstr#680.08

Webster PJ, Frum CF, Bauer C, Kurkowski-Burt A, Mardmomen N, Baker K, **LEWIS JW** (2016) Adaptive Neural Mechanisms in Individuals with Autism for Integrating Multisensory Real-world Stimuli. *International Soc. Autism Research (INSAR). Poster.*

LEWIS JW, Donai J, Silberman M, Frum C, (2016) Evidence for distinct echo-mirror neuron subsystems in the human brain. *Human Brain Mapping conference (in Geneva, Switzerland)*. Abstract/Poster #4142

Chafin, A, **LEWIS JW**, Stauber W, (2016) Somatic afferent stimulation to improve patient outcomes: fMRI imaging. *West Virginia Clinical Translational Science Initiative (WVCTSI) annual meeting.*

Mardmomen N, Webster PJ, **LEWIS JW**, (2016) Resting state MRI functional connectivity and sensory processing in autism spectrum disorder. *WVCTSI annual meeting.*

Webster PJ, Frum CF, Bauer C, Kurkowski-Burt A, Baker, K, Mardmomen N, Patterson J, **LEWIS JW** (2016) Adaptive neural mechanisms in individuals with autism when processing multisensory vs. unisensory real-world stimuli. *WVCTSI annual meeting.*

Kurowski-Burt A, McCombie S, Webster PJ, **LEWIS JW** (2017) A Qualitative View of Relationships in Young Adults with Sensory Processing Difficulties. *Amer Occup Therapy Assoc*.

Czonka M, Webster PJ, **LEWIS JW** (2018) Different human brain networks for perceiving audio-visual interactions: a Meta-Analysis. *Van Liere symposium,* WVU Poster.

Bassler J, Wen, S, Webster PJ, **LEWIS JW** (2018) Comparison of statistical methods to calculate an audiovisual temporal binding window. *Eastern North American Region (ENAR) International Biometric Society*. Poster 10D

Klichowski M, Kroliczak G, **LEWIS JW** , Nowik A (2018) Functional lateralization of tool-sound and action-word processing in a bilingual brain. Conference paper Neuronus 2018 IBRO Neuroscience forum, Krakow, Poland.

Long, K, Kurowski-Burt A, McCombie S, Webster PJ, **LEWIS JW** (2019) Sensory Profiles, Functional Magnetic Resonance Imaging, and Temporal Binding Windows: A Comparison of Data of Autistic Individuals. *Amer Occup Therapy Assoc*.

Hixon HE, Boyd-Pratt H, Layne M, Lass N, Talkington WJ, Frum C, **LEWIS JW**, Donai J (2019) Animal sounds versus human mimics: A classification study. *American Academy of Audiology*.

Webster P, Jonathan K, **LEWIS JW**, Wang S (2020) Extremely wide temporal binding windows in a subgroup of individuals with Autism. Int. Soc. For Autism Research (Abstract #35880). May 6, Seattle WA

Kingsly, J., Webster, P.J., Bassler, J., Wen, S., Schade, M.M., **LEWIS, J.W**., Wang, S. (2020) Timing of Audiovisual Integration in Individuals with Autism. Poster presented at: 17th Annual Undergraduate Research Day at the Capitol; 2020 Feb 7; Charleston, WV.

Coleman M, Webster P, **LEWIS JW** (2020) Aberrant cortical networks for multi-sensory processing with autism spectrum disorder. Summer Undergraduate REsearch (SURE) Program at WVU, conference.

Coleman M, Webster P, **LEWIS JW** (2021) Aberrant cortical networks for multi-sensory processing with autism spectrum disorder. Undergraduate Research Day at the Capitol Symposium. March 5. Poster #57. https://drive.google.com/file/d/1tgcqMM-Oavo-Rk-3rI4k9kZfAd3niGe9/view

Pawlowski K, **LEWIS JW** (2021) Chronic headache pain mapping. INBRE summer program at WVU.

Brefczynski-Lewis, JA, Stolin, A., Siva, N., Glover, C, Rajagopalan, S, Nott, K, Chandi, S, Wuest, T., **LEWIS JW**, Morano, G, Majewski, S. Bedside PET imager: potential for research and point-of-care imaging. Society for Neuroscience, Chicago, IL. 2021

Siva, NK, Bauer, C, Glover, C, Stolin, A, **LEWIS JW**, Chandi, S, Melnick, H, Morano, G, Parker, B, Mandich, M, Qi, J, Majewski, S, Brefczynski-Lewis, JA. A future for ecologically valid human neuroimaging: demonstration of real-time, ambulatory, low-dose PET imaging, Society for Neuroscience, Chicago, IL. 2021

Jarrell S, Coleman MM, Salmassi S, Webster PJ, **LEWIS JW** (2021) Aberrant connectivity of biological motion processing networks in Autism Spectrum Disorder. *Soc. Neuroscience*.

Pawlowski K, Hurley M, **LEWIS JW** (2022) Chronic headache pain mapping: A case study. INBRE summer program at WVU.

Summers M, Pawlowski K, Hurley M, Nolan R, Watson D, Palmer J, **LEWIS JW** (2022) A novel search for a biomarker of pain perception using EEG recordings from a chronic headache patient. Research Apprenticeship Program (RAP) program and capstone program for Dept. Biology at WVU.

Hurley M, Pawlowski K, Summers M, Nolan R, Palmer J, Watson D, **LEWIS JW** (2023) Mapping pain perception using fMRI, rsfMRI, and EEG recordings from a patient with Chronic Headache. Van Liere research conference at WVU.

Academic advisors:

(**Doctoral Advisor**)
Dr. David Van Essen, Ph.D., Chairman and Edison Professor of Neurobiology
Department of Anatomy and Neurobiology, Box 8108
Washington University Medical School
660 S. Euclid Ave.
St. Louis, MO 63110
Phone: (314) 362-7043
Web page: http://brainvis.wustl.edu/wiki/index.php/Lab:People
Email: vanessen@V1.WUSTL.EDU

(**Post-doctoral Advisor**)
Dr. Edgar A DeYoe, Ph.D., Professor of Neurobiology
Department of Radiology
Medical College of Wisconsin
8701 Watertown Plank Rd. Box 26509 Milwaukee, WI 53226
Phone: (414) 456-4920
Web page: http://www.mcw.edu/display/docid20898.htm
Email: deyoe@mcw.edu

Julie A. Lockman, Ph.D.

CONTACT INFORMATION

Home Address: 305 Teardrop Ct, Morgantown, WV 26508
Office Address: 1 Medical Center Drive, PO Box 9000, Morgantown, WV 26506
Office Phone: (304) 293-8044
Email: jmlockman@hsc.wvu.edu

CURRENT POSITIONS

7/2020-present
Assistant Vice President for Graduate Education
West Virginia University Health Sciences Center
Senior Associate Vice-President for Research and Graduate Education: Laura Gibson, PhD

7/2018-6/2022
Director, Faculty Affairs, Culture and Inclusion
West Virginia University Health Sciences Center
Associate Vice-President for Academic Affairs: Louise Veselicky, DDS, MDS, MEd

06/2016-present
Associate Professor, Service Track
Department of Physiology & Pharmacology
West Virginia University (WVU) School of Medicine
Chair: Tim Nurkiewiecz, PhD

07/2014-present
Adjunct Associate Professor
School of Pharmacy, West Virginia University
Dean: William Petros, PharmD

EDUCATION AND POSTDOCTORAL TRAINING

INSTITUTION	DEGREE/POSITION	YEAR
Texas Tech University Health Sciences Center, School of Pharmacy Amarillo, TX	Postdoctoral Research & Teaching Associate Mentor: Quentin R. Smith, Ph.D. (Neuropharmacology, Molecular Biology)	2006-2008
Texas Tech University, Health Sciences Center, Graduate School of Biomedical Sciences Amarillo, TX	Ph.D., Pharmaceutical Sciences Dissertation Title: "Iron-overload toxicity in central nervous system-associated cells and its attenuation by calcium channel blockers." Advisor and Chair: Cornelis J. Van der Schyf, D.Sc. (Dean's Award Recipient and Banner Bearer)	2006
West Texas A&M University Canyon, TX 79015	B.S., Chemistry and Biology (*summa cum laude*)	2001

PREVIOUS POSITIONS AND APPOINTMENTS

07/2017-05/2020
Core Director, WVCTSI Professional Development Core
West Virginia Clinical & Translational Science Institute (WVCTSI)
PI: Sally Hodder

03/2015-05/2020
Director of Investigator Development
West Virginia Clinical & Translational Science Institute (WVCTSI)
Website: www.wvctsi.org
Director: Sally Hodder, MD

01/2014-03/2015
Education Manager, West Virginia Clinical & Translational Science Institute (WVCTSI)
West Virginia University Research Corporation, Supervisor: Fred L. Minnear, PhD

06/2014-06/2016
Adjunct Assistant Professor (taught pharmacology to WVU Medical Students)
Department of Physiology & Pharmacology, Chair: David P. Siderovski, PhD
WVU School of Medicine

08/2008-01/2014
Assistant Professor of Biology
Appointment: 9 months, 60% Teaching, 30% Research, 10% Service
Department of Life, Earth, and Environmental Sciences (LEES), Chair: David Sissom, PhD
West Texas A&M University (WTAMU)
WTAMU Box 60808, Canyon, TX 79016
Phone: 806-651-2570

HONORS AND AWARDS

2021	Nominee, HSC VP Award for Outstanding Achievement in Regional or Local Service, West Virginia University
November 2017	Inductee, Academy of Excellence in Teaching and Learning, Health Sciences Center, West Virginia University
July 2017	**Fellow**, 2017-2018 cohort, Provost's Academic Leadership Fellows Program, West Virginia University (Mentor: Dr. Louise Veselicky)
May 2017	**Fellow,** 2017-2018 cohort, Professional **Mentoring Skills** Enhancing Diversity (PROMISED) Program, Certificate in Research Leadership, Institute for Clinical Research Education, University of Pittsburgh (Director: Dr. Doris Rubio)
Spring 2015	Women's Leadership Initiative (Phase 5), West Virginia University
2014	***AAPS Pharmaceutical Research* Meritorious Manuscript Award**
Spring 2012	**Teaching Excellence Award, Texas A&M University System** • Based upon student recommendations and evaluations
Spring 2012	**Outstanding Instructional Contributions,** College of Agriculture, Science and Engineering, West Texas A&M University • Based upon faculty peer recommendations and committee selection
Spring 2011	**Teaching Excellence Award, Texas A&M University System** • Based upon student recommendations and evaluations
Fall 2008	**Outstanding Teacher Award** by WTAMU Mortar Board Senior Honor Society
2007	TTUHSC Graduate School of Biomedical Sciences Dean's Award Recipient
2000	Delta Xi Beta Beta Beta Honor Society Academic Scholarship, WTAMU
1999	Mortar Board Senior National Honor Society, Induction, WTAMU
1998	Beta Beta Beta Biological National Honor Society, Induction, WTAMU

PROFESSIONAL AFFILIATIONS

Council of Graduate Schools, member (2021-)

American Association of Medical Colleges (AAMC), member (2016-)
- Graduate Research, Education and Training Group (2020-)
- Group on Faculty Affairs, AAMC, member (2017-)
    - Mentoring circle participant (2018-2019)
- Group on Women in Medicine and Science, member (GWIMS)—AAMC (2016-)
- Group on Diversity and Inclusion (GDI) (2019-)

National Research Mentoring Network (2015-)
Association for Clinical and Translational Science (ACTS) (2015-2016)
West Virginia Clinical and Translational Science Institute (WVCTSI) (2014-)
Texas Association of Advisors for the Health Professions (2012-2014)
Leadership Launch Amarillo (2010-2013)
Society for Neuroscience (2005-2008)
American Association of Pharmaceutical Sciences (2003-2016)

ADMINISTRATIVE EXPERIENCE

2020-	Assistant VP for Graduate Education: oversee recruitment, admission, matriculation and curriculum for the the PhD in biomedical sciences and its seven associated programs; liaison with the Provost's Office and the five schools at the Health Sciences Center
2020-	Program Director, MS in Biomedical Sciences, WVU School of Medicine
2019-2022	Director, Diversity, Equity and Inclusion Initiatives for WVU Health Sciences
2018-2022	Promotion and Tenure Review of HSC files; Provost-level
2018-2022	Orientation and Onboarding Liaison for Health Sciences Faculty at WVU
2017-2020	Director, Research Scholars program, West Virginia Clinical & Translational Science Institute
2017-2018	Administrative Coordinator, Planning and Launching of the Health Professions Living Learning Community
2017-2019	Administrative Director, PhD Program in Clinical & Translational Sciences
2015-2020	Director, WVCTSI Investigator Development Programs; Supervisor of 2-6 staff members
2015-2018	Co-Director, Introduction to Research Opportunities (INTRO) program for First-Year Medical Students
2014	Assistant Director; Introduction to Research Opportunities (INTRO) program for First-Year Medical Students

PROFESSIONAL SERVICE

Current Committee Appointments:

National

2019-2020	Chair, IDeA-CTR Professional Development Core Leadership Interest Group
2017	"First Jobs" Task Force Member, Group on Women in Medicine and Science (GWIMS), AAMC

WVU-Institutional

7/2022-	Department of Chemical and Biomedical Engineering Advisory/Visiting Committee, member
04/2022-	Strengths Work Group, The Purpose Center, West Virginia University
11/2021-	Graduate Faculty Status Review Task Force, WVU Office of the Associate Provost for Graduate Education
02/2021-6/2022	WVU Diversity, Equity, and Inclusion (DEI) Council, Office of the Vice President for DEI
02/2021-	Rewards and Recognition Committee, Office of the Provost, WVU
10/2020-	Facilitator, Inclusive Hiring Initiative, WVU ADVANCE Center
10/2020-05/2021	WVU Graduate Education Task Force, WVU Office of the Provost
08/2020-	Program Director, Women's Leadership Initiative Strengths-based Pods, WVU
07/2020-	Graduate Council, ex-officio, WVU

07/2020-4/2021	Provost's Academic Working Group for Racial Justice for Faculty, WVU
07/2019-	Steering Committee Member, Women's Leadership Initiative, WVU

WVU HSC/SOM:

2022-	Training Committee, National Institute of Environmental Health Sciences, Bethesda, MD. T32. 1T32ES032920-01A1 Predoctoral Training in Systems Toxicology Program.
2021-	Chair, WVU School of Medicine Priority Action Team on Graduate Education
2020-	Internal Advisory Committee, National Institute of Neurological Disorders and Stroke, National Institutes of Health, Bethesda, MD. T32 AG052375-01A1, Predoctoral Training in Stroke and Its co-Morbidities.
2022-	Graduate Education Priority Action Team Chair, School of Medicine Strategic Envisioning Plan, WVU School of Medicine
2022-	Strengths-based Programs Advisory Group, member, The Purpose Center, WVU
2020-2022	Search Committee Chair, WVU HSC Diversity, Equity and Inclusion Liaison position, WVU Health Sciences Center
2020-2021	Chair, Biomedical Sciences First Year Curriculum Committee, WVU HSC
2020-	Member (ex-officio), MD/PhD Admissions Committee, School of Medicine
2019-2022	Chair, WVU HSC Diversity and Inclusion Council
2019-2020	Chair, WVU HSC Cross-cutting Programs Diversity, Equity and Inclusion Committee
2017-	Member, Graduate Council, WVU Health Sciences
2017-2020	Program Director, M.S. in Clinical & Translational Science (20 enrollees)
2017-2020	Program Director, Certificate in Clinical & Translational Science (1 enrollee)
2015-	Member, Faculty Development Advisory Committee, WVU Health Sciences
2015-2018	Member, HSC Graduate Programs Committee on Academic and Professional Standards (GP-CAPS), WVU
2015-2018	Executive Committee Member, WISH Committee, WVU Health Sciences
2014-2019	Member, WISH Committee, WVU Health Sciences
2014-2017	Member, Admissions Committee, Master's and Certificate in Clinical and Translational Science, WVU School of Medicine
2014-2016	Member, Selection Committee. Initiation to Research Opportunities (INTRO) for medical students. WVU School of Medicine

Department

2019-2020	Member, Tenure-track Faculty Search Committee, Department of Physiology & Pharmacology, WVU SOM
2020-2021	Member, Teaching Faculty Search Committee, Department of Physiology & Pharmacology, WVU SOM

Previous Committee Appointments:

WVU Institutional

2016-2017	Member, Occupational Therapy Search Committee, WVU Health Sciences
2016-2017	Committee Chair, Women in Science and Health (WISH), WVU Health Sciences
2015-2017	Scholarship Committee Member, Clinical and Translational Science Doctoral Program, WVU School of Medicine
2015-2016	Vice Chair, WISH Committee, WVU Health Sciences Center
2012-2013	Alcohol and Other Drugs Committee, West Texas A&M University

2009-2013	Institutional Review Board (IRB), West Texas A&M University
2010-2012	Developmental Education Committee, West Texas A&M University
2005-2006	Student Member, Course Evaluation Committee, Graduate School of Biomedical Sciences. Texas Tech University. Chair: Roderick Nairn, Ph.D.

WVU HSC/SOM
Departmental

2014-2016	Communications Committee, WVCTSI
2014	Member, Biostatistics & Epidemiology Short Course Planning Committee, WVCTSI-WVU
2014	Member, Summit on Obesity and Other Metabolic Diseases Planning Committee, WVCTSI-WVU
2012-2013	Non-majors Course Evaluation Committee, West Texas A&M University
2012-2013	Core Curriculum Evaluation Committee, West Texas A&M University
2012-2013	Curriculum Review Committee, West Texas A&M University
2008-2013	Health Professions Advisory Committee, West Texas A&M University

Other Professional Service Activities

Developed and implemented the Women's Leadership Initiative Strengths-based leadership Coaching Program (2020-2021): designed program and co-devloped curriculum; trained coaches and led one of the small groups (9 coaches; 30 participants)

One-on-one Strengths coaching for graduate students and women leaders and scientists

Facilitator (May 2021) Inclusive Hiring Initiative Workshop, Search Committee Pharmaceutical Systems And Policy Department, WVU School of Pharmacy.

Facilitator (May 2021) Inclusive Hiring Initiative Workshop, Department of Women and Gender Studies WVU.

Facilitator (December 2020) Inclusive Hiring Initiative Workshop, Department of Sociology and Anthropology, WVU.

External Reviewer (July 2020). IDeA-CTR Professional Development Core Renewal, Great Plains-CTR

Poster Judge (November 2019). Southeast Regional IDeA Conference, Louisville, KY.

Session Moderator (March 2019). E.J. Van Liere Convocation & Research Day, WVU, Morgantown, WV.

Table Facilitator (March 2019). Mentoring. WVU HSC Faculty Engagement Event, Morgantown, WV.

Table Facilitator (April 2018). Mentoring. WVU HSC Faculty Engagement Event, Morgantown, WV.

Table Facilitator (Feb 2017). Clinical and Translational Research Collaborations. WVU HSC Faculty Engagement Event, Morgantown, WV.

Poster Judge (July 2016). WVU Centers for Neuroscience Retreat, Davis WV.

Moderator (June 2016). Teaching Scholars Summer Institute, WVU HSC, Morgantown, WV.

Presentation Judge (July 2015). Centers for Neuroscience Retreat, Wheeling, WV.

Research and Education Representative (one of six) for the Liaison Committee for Medical Education Accreditation Site Visit, (February 2015). WVU School of Medicine.

Poster Judge (February 2015, 2016, March 2018). E.J. Van Liere Convocation & HSC Research Day, WVU, Morgantown, WV.

Faculty Advisor (2014-2016). American Association of Pharmaceutical Scientists, WVU Student Chapter.

GRANTS AND CONTRACTS

7/ 1/2017-6/30/2022	West Virginia Clinical & Translational Science Institute: Improving Health through
Funded	Partnerships and Transformative Research (WVCTSI). (Hodder, PI). NIH NIGMS

Competing Renewal for Parent Project Number 2U54GM104942-02. Total Cost: $20 MM NIH with an additional $35.5 MM in cost share funds.
Sub-project ID: 6658 Professional Development Core (PDC)
Total Core Budget $4,312,039
My Role: Project Lead and Core Director, 25% Effort (ended July 1, 2020)

2017-2018 Core Direct Cost: $692,664 ($116,769-NIH funds)
2018-2019 Core Direct Cost: $764,028 ($124,753-NIH funds)
2019-2020 Core Direct Cost: $794,945 ($109,028-NIH funds)

2005-2006 Renewal, American Foundation for Pharmaceutical Education, Pre-Doctoral Fellowship, $6,000-**funded**
2004-2005 American Foundation for Pharmaceutical Education; Pre-Doctoral Fellowship, $6,000-**funded**

TEACHING/EDUCATIONAL EXPERIENCE

Undergraduate Medical and Dental Education:

09/2014-12/2020 **PCOL 801 Medical Pharmacology.** Teaching team member. Deliver lectures to second year medical students on drug development and Good Clinical Practice (1 session), pharmacology of antibacterial agents (6), cholinergic pharmacology (2), Intro to CNS (1), Insulin and hypoglycemic agents (2), and translational pharmacology (1). West Virginia University School of Medicine.

01/2021- **PCOL 812 Medical Pharmacology 1**. Teaching Team member. Deliver lectures to first year medical students on pharmacology of antibacterial agents (6). West Virginia University School of Medicine.

01/2022- **PCOL 820 Medical Pharmacology 2**. Teaching Team member. Deliver USMLE review on antibacterials to second year medical students (1).

09/2019- **PCOL 760 Pharmacology and Therapeutics**. Teaching Team Member. Deliver lectures to second year dental students on pharmacology of antibacterial agents (2). West Virginia University School of Dentistry.

Summer 2014- 2020 **Introduction to Research Opportunities (INTRO):** Curriculum development and implementation: planned eight weekly enrichment sessions to supplement MS1 summer research experiences. Provided content delivery for the following topics: effective poster design and presentation (group facilitator), refining your elevator pitch (group facilitator). Annual in the summer time.

Undergraduate Education:

09/2020- **BMEG 203 Biomedical Engineering Seminar.** Guest presenter on the topic of "Leveraging Your Strengths for Engagement, Impact and Effectiveness in the Workplace." 2 sessions. West Virginia University.

08/2009-12/2013 **BIOL 4355 Human Pharmacology.** Course administrator and sole instructor. Fall course. Introduction of general principles of drug action and therapeutic mechanisms of drug classes in select body systems. Format: lecture-based, problem-based, student presentations. (Topics: treatment of cardiovascular diseases, infectious diseases, cancer, neurosensory disorders, and psychiatric disorders). Average class: 40 students. West Texas A&M University.

01/2009-12/2013	**BIOL 4095 Problems: Independent Study Course**. Facilitated independent study learning experiences for students tailored to their career of interest. Examples include book discussions, pharmacological case studies, research papers or presentations. Undergraduate. Total: 20 students. West Texas A&M University.
06/2010-12/2013	**BIOL 4097 Cellular and Molecular Biology Research**. Mentoring and supervision of undergraduate students in molecular and cellular biology research experiences. Experimental design, implementation and analysis. Total: seven students. West Texas A&M University.
08/2008-05/2013	**BIOL 3402 Cell Biology and Cell Biology Laboratory**. Course administrator and sole instructor. Spring course. Instruct students in the area of cellular and molecular biology, demonstrate, and teach current laboratory techniques relevant to the field. Lecture, discussion, and case study format. Undergraduate. Average class size: 25 students. West Texas A&M University.
01/2009-12/2013	**BIOL 1406 Contemporary Biology for science majors**. Course administrator and sole instructor. Fall and spring course. Instruct students planning a career in the sciences on major biological concepts. This course covers basic and organic chemistry, macromolecules, cells and organelles, mitosis, tissues and body systems (respiratory, cardiovascular, nervous, and digestive). Format: lecture-based, laboratory-based, and problem-based. Undergraduate. Average class size: 100 students. West Texas A&M University.
8/2008-12/2013	**BIOL 1408 Biology for non-science majors**. Course administrator and sole instructor. Fall and spring course. Instruct students outside of the sciences on the importance of biology in their everyday life while covering important biological concepts. This course surveys basic and organic chemistry, macromolecules, cells and organelles, mitosis, tissues and body systems. Lecture format. Undergraduate. Average class size: 80 students. West Texas A&M University.

Graduate Student Education

08/2020-	**BMS 701 Biomedical Lab Experience**. Course Director. Fall/Spring Course.
07/2020-	**BMS 707 Experiential Learn**ing. Course Director. 3 semesters per year.
06/2020	**Professionalism in Healthcare.** Facilitated Session on Cultural Competence in Healthcare. Summer.
8/2019-	**MICB 782 Advanced Microbiology.** Team Member. Deliver content on antibacterial agents. Fall Course. (2)
1/2019-	**CTS 693C CTS Scientific Integrity.** Course Director and sole instructor. Web-based course. Spring Course.
6/2018-2020	**CTS 693A Communicating your science**. Course Director. Hybrid course consisting of didactic content and writing assignments. Spring and summer semesters.
01/2018-2020	**CTS 697 Research.** Course Director. Assist with placement of Master's students in research experiences, monitor progress, and administer grades.
8/2017-2020	**CTS 707 Journal Club.** Team Member. Facilitate Journal Club 3-4 times per year and facilitate two professional development sessions for students.
8/2017-2020	**CTS 695 Grant Preparation.** Course Director. Delivery of foundational content. Monitor progress. Review proposal and assign grades.
04/2017-2020	**PHAR 779 Drugs: Bench to Market**. Team member. Delivered content on Translational Science in Pharmacology.

08/2009-12/2013	**BIOL 5355 Human Pharmacology.** Course administrator and sole instructor. Fall course. Introduction of general principles of drug action and therapeutic mechanisms of drug classes in select body systems. Format: lecture-based, problem-based, student presentations. Graduate. (Topics: treatment of cardiovascular diseases, infectious diseases, cancer, neurosensory disorders, psychiatric disorders). Average class: 10 students. West Texas A&M University.
06/2010-12/2013	**BIOL 6395/6397 Advanced Problems**. Mentoring and supervising graduate students in molecular and cellular biology research laboratory-experimental design, implementation and analysis. Total: six students.
01/2010-12/2013	**BIOL 6301/6302 Thesis**. Mentoring of biology graduate students completing their thesis. Total: four students. (Details found in Student Mentoring section.)

Health Professions Education

08/2019-	**PCOL 760 Pharmacology & Therapeutics**. Teaching team member. Fall course. Teach second year dental students pharmacology of antibacterials (2). WVU School of Dentistry
02/2016-2018	**PHAR 814 Biochemical Pharmacology**. Teaching team member. Spring course. Actively teach first year pharmacy students the following: Pharmacodynamics (5 sessions), CNS systems pharmacology (3), antimicrobials (3), drug development/translational pharmacology (1). WVU School of Pharmacy.
02/2015-05/2015	**PHAR 793J Fundamentals of Biochemistry**. Teaching team member. Delivered eight lectures and facilitated two presentation sessions for first year pharmacy students. Lecture topics: signal transduction (1 session) and metabolic pathways (7 sessions). West Virginia University School of Pharmacy.
08/2013-12/2013	**NURS 6384 Pharmacotherapeutics**. Course administrator and sole instructor. Introduction to pharmacotherapeutics from a pathophysiologic, pharmacologic, and prescribing perspective. Design, delivery, and evaluation of graduate nursing students in online course environment. (17 lectures) 25 students. West Texas A&M University.
01/2005-05/2008	**PHAR 3361 Case Studies in Pharmacology**. Team Leader/Facilitator. Problem-based learning course, second year pharmacy students. Course Administration: Responsible for writing pharmacology-based clinical cases, grading quizzes and case reports, training group facilitator's on Case content. Facilitator: Directed student groups in application of basic and medical pharmacology and prepared student performance evaluations. Texas Tech University School of Pharmacy.

STUDENT MENTORING: GRADUATE AND UNDERGRADUATE

2020	Ahmad Khan, MD, Clinical and Translational Science MS Student, West Virginia University School of Medicine, Role: Committee chair Proposal: Feasibility of Implementation of Readmission Reduction Program in Patients With Decompensated Cirrhosis in a Large Rural Tertiary Care Hospital.
2019-2020	Krystal Hughes, Clinical and Translational Science MS Student, West Virginia University School of Medicine, Role: Committee chair
2019-2020	Safi Khan, MD, Clinical and Translational Science MS Student, West Virginia University School of Medicine, Role: Committee chair Proposal: Clinical and Economic Burden of Stroke Among Young, Midlife and Older Adults in the United States.
2018-2020	Peter Farjo, MD, Clinical and Translational Science MS Student,

West Virginia University School of Medicine, Role: Committee Chair

2018-2019 James Henry Fugett II, Clinical and Translational Science MS Student, West Virginia University School of Medicine, Role: Committee chair

2019-2020 Charles Ituka Mosimah, Clinical and Translational Science MS Student, West Virginia University School of Medicine, Role: Committee chair

2018-2020 Gina Sizemore, Clinical & Translational Science PhD Student
West Virginia University School of Medicine, Role: Committee chair
Dissertation: Exploring the Functional Role of Large Conductance Potassium Channels in Termination of Triple Negative Breast Cancer"—August 2020

2018-2020 Wail Ali, MD, Graduate Student in MS in Clinical and Translational Sciences
West Virginia University School of Medicine, Role: Committee chair
Thesis: The Impact of L-Carnitine Supplementation on Myocardial Injury in Children with Congenital Heart Defects Undergoing Open-Heart Surgery: A Pilot Double-Blinded Randomized, Controlled Trial, August 2020

2012-2013 Monika Jones-Higgins, Graduate Student, West Texas A&M University.
Role: Advisor and Committee Chair

- Thesis: "NGP1-01, a novel dual-mechanism drug, decreases iron toxicity in neuronal and astrocyte cell lines"—M.S. in Biology-August 2013.
- Recipient of Kilgore Graduate Research Fellowship, 2011

2010-2012 Shanal DeSilva, Graduate Student, West Texas A&M University.
Role: Advisor and Committee Chair

- First Place Graduate Poster, 2011 WTAMU Student Research Conference
- Thesis: "Albumin Permeability in Experimental Brain Metastases of Breast Cancer and the Differential Effects on Astrocytes, Neurons, and Metastatic Tumor Cells"—M.S. in Biology-August 2012.

2011-2014 Yasemin Celik, Graduate Student, West Texas A&M University.
Role: Advisor and Committee Chair.

2010 Manoj Pant, Undergraduate Student, Recipient of Summer Research Fellowship, Kilgore Research Center, West Texas A&M University. Role: Advisor and Mentor.

2009-2010 Areeba Anam, Graduate Student, West Texas A&M University. Role: Advisor.

2008-2013 Academic Advisor for Pre-dental, Pre-pharmacy, and Pre-chiropractic students, Average: 40 students/semester.

INVITED PROFESSIONAL PRESENTATIONS AND DISCUSSIONS

National

Julie Lockman, Connor L Ferguson, Nicole R Beason, Mallory Weaver. A strengths-based approach to professional development for graduate students in biomedical sciences. Presented October 2021. American Association of Medical Colleges Graduate Research, Education, and Training Conference.

Jennifer McCall-Hosenfield, **Julie Lockman**, Heather Dorr, Leigh Patterson. Advancing Faculty Scholarship in the 21st Century. 90 minute workshop. Accepted for July 2020 Association of American Medical Colleges 2020 Group on Faculty Affairs Professional Development Conference. GFA Compendium. Pg 8. https://www.aamc.org/media/48981/download

Julie Lockman, Meghan Reeves, Joan Lakoski (June 2020). Lessons Learned and Best Practices: Professional Development of CTR-funded investigators. *Invited Workshop Session for June 2020.* National IDeA Symposium of Biomedical Research Excellence (NISBRE). Washington D.C.

Julie Lockman (June 2018). Lessons Learned and Best Practices in Investigator Development and Service Delivery—IDeA-CTR. Podium Presentation. 8th Annual National IDeA Symposium of Biomedical Research Excellence (NISBRE). Washington D.C.

State/Regional:

JA Lockman, S Cotton and A Vasquez. (January 2020). Diversity Summit for Health Career Students—Panelist. Pierpont Community and Technical College. Fairmont, WV.

JA Lockman (May 2019). Navigating the Mentoring Relationship Workshop (3 hours). Topics: Aligning Expectations; Maintaining Effective Communication. Marshall University School of Medicine, Huntington, WV.

JA Lockman (May 2019). Leveraging Statewide Resources to Support a Career in Clinical and Translational Research. Marshall University School of Medicine. Huntington, WV.

JA Lockman (October 2018). Connecting infrastructure to support clinical and translational research in West Virginia. Special faculty seminar. West Virginia School of Osteopathic Medicine, Lewisburg WV.

JA Lockman (October 2016). Enhancing Clinical Research Programs through a statewide support network. Faculty Monthly Research Meeting. West Virginia School of Osteopathic Medicine, Lewisburg WV.

Lockman JA Hulsey TC, Mason JD, Minnear FL. (September 2014) Educational Opportunities. WVCTSI Annual Meeting. Roanoke, WV.

Local:

JA Lockman (September 2022). Equitable and Inclusive Hiring. Search Committee for Chairman of Microbiology, WVU School of Medicine.

JA Lockman (September 2021). Equitable and Inclusive Hiring. Department of Neuroscience, WVU School of Medicine.

JA Lockman (May 2021). Equitable and Inclusive Hiring. Department of Microbiology, Immunology, and Cell Biology, WVU School of Medicine.

JA Lockman (May 2021). Discover Your Strengths Workshop. LGBTQ Center/Commission. Morgantown, WV.

JA Lockman. (March 2021). Two part series. Building an Inclusive Community through Strengths. Statler College of Engineering. WVU. Morgantown, WV.

SA Wood , **JA Lockman**, S Graff, H Oneal. (February 2021) Women's Leadership in the Pandemic: Balancing Leading, Achieving and Innovation, Women in Science and Health Committee, WVU HSC, Morgantown, WV. (~15 participants)

JA Lockman, G Baugh, JK Davis. (February 2021) Leveraging Your Strengths as an Academic Leader. WVU HSC Office of Faculty Development. Morgantown, WV. (20 participants)

JA Lockman. (February 2021). Discovering Your Strengths Workshop. Health Sciences Graduate Students. WVU, Morgantown, WV.

JA Lockman. (October, 2020). Diversity, Equity, and Inclusion Initiatives at WVU and its Health Sciences Center. (~30 participants). Department of Behavioral Medicine and Psychiatry Grand Rounds. Morgantown, WV.

JA Lockman (Oct. 5 2020). Mentoring Up. WVU Health Sciences Center T32 Training Programs. (10 participants). Morgantown, WV.

JA Lockman (August 2020, November 2020). Two-part series on Discovering Your Strengths. Medical Weight Management Team. Department of Medicine. WVU School of Medicine, Morgantown, WV.

JA Lockman (Feb. 2020, April 2020). Leveraging Your Strengths Seminar and Book Club Discussion. Graduate Women Advocating for Science. (~20 participants). Morgantown, WV.

JA Lockman (March 2020). Navigating Academic Life by Leveraging Your Strengths. Females Advancing Clinical and Translational Science. (~30 participants). Morgantown, WV.

JA Lockman. (March 2020). Discover Your Strengths Workshop. Audience WVU Office of Research and Graduate Education office staff. (~25 participants). Morgantown, WV.

JA Lockman and S Ballard Conrad. (November 2019). Executive Presence and Communication Strategies. WVU Women's Leadership Initiative Leadership Seminar Series. Morgantown, WV.

JA Lockman. (November 2019). Discover Your Strengths. Audience: WVCTSI Research Scholars. Morgantown, WV.

JA Lockman. (October 2019). Navigating the Mentoring Relationship. Teaching Scholars Longitudinal Program. Morgantown, WV.

J Lockman. (June 2019). Mentoring and Being Mentored. Teaching Scholars Summer Institute. Morgantown, WV.

J Lockman, E Morgan, M Reeves (May 2019) Engaging in Clinical Research at WVU. Anesthesiology Grand Rounds. Morgantown, WV.

J Lockman (March 2019). Mentoring and Being Mentored Roundtable Discussion. WVU HSC Faculty Engagement Event. Morgantown, WV.

J Lockman (March 2019). Introduction to the West Virginia Clinical and Translational Science Institute. WVU HSC Faculty Engagement Event. Morgantown, WV.

JA Lockman (October 2018). Navigating the translational research spectrum. Radiology Residents Conference, WVU. Morgantown, WV.

J Lockman (May 2018). Navigating the Mentoring Relationship. Speaker. West Virginia Clinical & Translational Science Institute Annual Meeting, Morgantown, WV.

J Lockman (April 2018). Update on the West Virginia Clinical and Translational Science Institute. WVU HSC Faculty Engagement Event. Morgantown, WV.

K Cullen, **J Lockman**, S Kennedy-Rea, P Speaker, K Stores. (March 2018). Evening of Science: Focus on the Science of Collaboration. Panelist. West Virginia University, Morgantown, WV.

JA Lockman, Chester AL, Price, SL, Khakoo RA. (June 2017). Leadership Panel. Panelist. WVU HSC Teaching Scholars Program, Morgantown, WV.

JA Lockman, RA Khakoo, SL Price, PJ Murray. (February 2017). Leadership in the Academic Medical Center. Moderator of panel discussion. WVU HSC Faculty Engagement Event, Morgantown, WV.

A Karshenas, **JA Lockman,** T Bland. (August 2016) Clinical Research Overview at WVU. WVU New Faculty Orientation. Waterfront Place, Morgantown, WV.

JA Lockman, SH Neal, BN Talkington. (July 2016). Enhancing Clinical Research Programs through training in clinical and translational science. Radiology Residents Conference, WVU. Morgantown, WV.

SL Hodder and **JA Lockman** (April 2016). Research Collaborations—Table Facilitator. Inaugural WVU HSC Faculty Engagement Event, Morgantown, WV.

RA Khakoo, AM Chester**, JA Lockman**, S Price. (March 2016). Mentoring Panel Discussion. WVU HSC Center for Faculty Development and Office of Continuing Education. Morgantown, WV.

CC Higgins and **JA Lockman**. (October 2014) WVCTSI: Assisting Researchers to Improve Health Disparities in WV and the Appalachian Region. 2014 WV Rural Health Conference. Lakeview Resort. Morgantown, WV.

JA Lockman and CC Higgins. (October 2014) WVCTSI: Assisting Researchers to Improve Health Disparities in WV and the Appalachian Region. Women in Science and Health Monthly Meeting, WVU, Morgantown, WV.

JA Lockman and J Cox. (July 2014). Enhancing Clinical Research Programs with new Services and Tools: WVCTSI Services Overview and IDR Demonstration. Ophthalmology Grand Rounds, WVU, Morgantown, WV.

JA Lockman and J Cox. (July 2014). Enhancing Clinical Research with Services and Tools: WVCTSI Services Overview and IDR Demonstration. Radiology Residents Conference, WVU. Morgantown, WV.

CC Higgins and **JA Lockman**. (July 2014) WVCTSI: Assisting Researchers to Improve Health Disparities in WV and the Appalachian Region. Behavioral Medicine Grand Rounds, WVU, Morgantown, WV.

CC Higgins, **JA Lockman**, J Cox, CJ Mullett. (June 2014). Enhancing Clinical Research Programs with new Services and Tools: WVCTSI Services Overview and IDR Demonstration. Behavioral Medicine Faculty Research Meeting, WVU, Morgantown, WV.

CC Higgins, **JA Lockman**, J Cox, CJ Mullett. (June 2014). Enhancing Clinical Research Programs with new Services and Tools: WVCTSI Services Overview and IDR Demonstration. Emergency Medicine Faculty Research Meeting, WVU, Morgantown, WV.

JA Lockman (May 2014). WVCTSI Services Overview. Research Study Coordinators Quarterly Meeting, WVU, Morgantown, WV.

CC Higgins, **JA Lockman**, J Cox, CJ Mullett. (May 2014). Enhancing Clinical Research Programs with new Services and Tools: WVCTSI Services Overview and IDR Demonstration. Family Medicine Faculty Development, WVU, Morgantown, WV.

JA Lockman and CC Higgins. (April 2014). Enhancing Clinical Research Programs with new Services and Tools: WVCTSI Services Overview. Nursing Research Council, Ruby Memorial Hospital. Morgantown, WV.

CC Higgins, **JA Lockman**, J Cox, CJ Mullett. (April 2014). Enhancing Clinical Research Programs with new Services and Tools: WVCTSI Services Overview and IDR Demonstration. Clinical Pharmacy Department Meeting, WVU, Morgantown, WV.

PROFESSIONAL DEVELOPMENT

09/2022 Leveraging the Power of Self-awareness to Lead More Effectively. American Association of Medical Colleges.

08/2022 Adult Mental Health First Aid. National Council for Mental Wellbeing. Presented by Layne Hitchcock. (gained certification). Hosted by the HSC Office of Research and Graduate Education.

10/2021 Mentoring with Cultural Awareness. Dr. Kelly Diggs-Andrews. Hosted by the HSC Office of Research and Graduate Education.

09/2020 Inclusive Hiring Initiative Train-the-Trainer. Facilitated by WVU ADVANCE Center.

01/2020-
05/2020 The Leadership Bridge: Phase 2. Energy Leadership. Leading Through Change. Building and Rebuilding Trust through Conversations. Hosted by WVU Women's Leadership Initiative. Presenter: Deb Degner.

01/2020-
05/2020 Developing a Liberatory Consciousness for Transformative Action: An Introductory Course for Social Justice Change Agents in Academia. WVU ADVANCE Center Professional Development Course for University Leaders. 10 hour course.

02/2020 Higher Level: Implicit Bias. 2 hour workshop. WVU Division of Diversity, Equity and Inclusion.

12/2019 Safe Zone Training. WVU LGBTQ+ Center. 3 hour course.

12/2019 American Association of Medical Colleges Mid-Career Women in Medicine and Science Leadership Seminar. 4-day professional development conference. New Orleans, LA.

10/2019 Gallup Successful Strengths Coaching. Gallup Organization. 2-Day Course. Washington, D.C.

5/2019 Gallup Coaching for Individuals, Managers, & Teams 3-day course. Gallup Organization. Morgantown, WV.
9/2018 The Leadership Bridge: Energy Leadership series for Women's Leadership Initiative coaches (3-month program). Presenter: Deb Degner.
5/2018 "Change Leadership" WVU Leadership and Organization Development, workshop.
04/2018 "Leadership Training: **Executive Shadowing -**Professional Mentoring Skills Enhancing Diversity (PROMISED), University of Pittsburgh Institute for Clinical Research Education; weekly sessions with assignments and videoconferencing.
03/2018 "Leadership Training: **Setting the Culture-**Professional Mentoring Skills Enhancing Diversity (PROMISED), University of Pittsburgh Institute for Clinical Research Education; weekly sessions with assignments and videoconferencing.
01/2018 "Leadership Training: **Time Management-** Professional Mentoring Skills Enhancing Diversity (PROMISED), University of Pittsburgh Institute for Clinical Research Education; weekly sessions with assignments and videoconferencing.
11/2017 "Leadership Training: **Five Year Plans**- Professional Mentoring Skills Enhancing Diversity (PROMISED), University of Pittsburgh Institute for Clinical Research Education; weekly sessions with assignments and videoconferencing.
7/2017 "Leadership Training: **Understanding Academia**- Professional Mentoring Skills Enhancing Diversity (PROMISED), University of Pittsburgh Institute for Clinical Research Education; weekly sessions with assignments and videoconferencing.
6/2017 "Leadership Training: **Understanding Strengths and Weaknesses**- Professional Mentoring Skills Enhancing Diversity (PROMISED), University of Pittsburgh Institute for Clinical Research Education; weekly sessions with assignments and videoconferencing
5/2017 "**Career Coaching**: Professional Mentoring Skills Enhancing Diversity (PROMISED)", sponsored by University of Pittsburgh Institute for Clinical Research Education in conjunction with NRMN, **3 day workshop**-May 17-19
6/17/2016: "NRMN Facilitating Mentor Training Workshop", sponsored by the National Research Mentoring Network (NRMN) and University of Wisconsin-Madison. 8-hour workshop. Facilitators: Drs. Cheri Barta, Angela Byars-Winston, Pamela Asquith. Madison, WI.
6/16/2016: "NRMN Research Mentor Training", sponsored by NRMN and University of Wisconsin-Madison. 8-hr workshop. Facilitators: Drs. Christine Pfund, Pamela Asquith. Madison, WI.
3/14/2016: "Research Mentor Training for Faculty" Workshop Participant, 8-hour seminar, Facilitator: Dr. Kelly Diggs-Andrews, NRMN Master Facilitator. WVU, Morgantown, WV.
12/8/2015: "Giving and Receiving Feedback" Women's Leadership Coaching. Webinar.
01-05/2015: "Networking and Development of Partnerships", "Effective Communication", "Notetaking Skills", "Effective Leadership Modes", "Finding Your Leadership Style". Leadership Development Institute, Mountaineer Leadership Academy, WVU.
01/2015 "Women Working Together: Solutions for Greater Productivity, Retention and Morale" by Dr. Anne Litwin, Hosted by the Women's Leadership Initiative, WVU.

PUBLICATIONS

Gillis M, **Lockman J**, et al. (2017) A guide to prepare for your first job in academic medicine: GWIMS toolkit [PDF document]. American Association of Medical Colleges.
Retrieved from https://www.aamc.org/download/483868/data/toolkitfirstjob.pdf

Original Published Peer-Reviewed Articles

Julie Lockman and Connor Ferguson. Impact of a strengths-based professional development program for biomedical and health sciences graduate students. *Journal of College Student Development*. Submitted November 2022.

Glance, C., Luzynski, C., Petrone, A.B, Holmes, M.H, Dagen, A.S., Lockman, J.A. The Effectiveness of a strengths-based leadership coaching program for women. (2023). *Journal of Leadership Education.* 22(1)38-50. DOI: 10.12806/V22/I1/R9

Swan Dagen, A. J., Glance, C. J., De-Frank Cole, L. J., **Lockman, J. A**. You Can't Be What You Can't See: Supporting Women's Leadership Development in Higher Education. (2022). *Consulting Psychology Journal: Practice and Research*. 74(2) 194-206. https://doi.org/10.1037/cpb0000207

Mittapalli RK, Adkins CE, Bohn KA, AS Mohammad**, Lockman JA,** Lockman PR. Quantitative Fluorescent Microscopy to Measure Vascular Pore Sizes in Primary and Metastatic Brain Tumors. (2017). *Can Res.* 77(2):238-246. PMID: 27815391. PMCID: PMC5267930.

Adkins CE, Mittapalli RK, Manda VK, Nounou MI, Mohammad A, Terrell TB, Celik Y, Grothe TR, **Lockman JA**, and Lockman PR. P-glycoprotein mediated efflux limits substrate and drug uptake in a preclinical brain metastases of breast cancer model. (2013*). Front Pharmacol.* 4:136. PMID: 24312053, PMC3816283

Lockman JA, Geldenhuys WJ, Jones-Higgins MR, Patrick JD, Allen DD, and Van der Schyf CJ. NGP1-01, a multi-targeted polycyclic cage amine, attenuates iron-induced cell death in brain endothelial cells. (2012). *Brain Res.*1489: 133–139. PMID: 23099055

Lockman JA, Geldenhuys WJ, Bohn KA, DeSilva SF, Allen DD, and Van der Schyf CJ. Differential effect of nimodipine in attenuating iron-induced toxicity in brain- and blood-brain barrier-associated cell types. (2012). *Neurochem Res.* 37(1)134-42. PMID: 21935732

Kunal S. Taskar, Vinay Rudraraju, Rajendar K. Mittapalli, Ramakrishna Samala, Helen R. Thorsheim, **Julie Lockman**, Brunilde Gril, Emily Hua, Diane Palmieri, Joseph W. Polli, Stephen Castellino, Stephen D. Rubin, Paul R. Lockman, Patricia S. Steeg, Quentin R Smith, PhD. Lapatinib Distribution in HER2 Overexpressing Experimental Brain Metastases of Breast Cancer. (2012). *Pharm Res. 29(2): 770-81.* PMID: 22011930, PMC3489161
***2014 *AAPS Pharmaceutical Research* Meritorious Manuscript Award**

Lockman PR, Mittapalli RK, Taskar KS, Rudraraju V, Gril B, Bohn KA, Adkins CE, Roberts A, Thorsheim HR, **Gaasch JA**, Huang S, Palmieri D, Steeg PS, Smith QR. Heterogeneous Blood-Tumor Barrier Permeability Determines Drug Efficacy in Mouse Brain Metastases of Breast Cancer. (2010). *Clin Cancer Res*. 16(23):5664-78. PMID: 20829328, PMC2999649

Palmieri D, Lockman PR, Thomas F, Hua E, Herring J, Hargrave E, Johnson M, Flores N, Qian Y, Vega-Valle E, Taskar K, Rudraraju V, Mittapalli RK, **Gaasch JA**, Bohn KA, Thorsheim H, Liewehr DJ, Davis S, Riley J, Walker R, Bronder JL, Feigenbaum L, Steinberg SM, Camphausen K, Meltzer PS, Richon V, Smith QR and Steeg PS. Vorinostat inhibits brain metastatic colonization in a model of triple-negative breast cancer and induces DNA double strand breaks. (2009). *Clin Cancer Res.* 15(19):6148-57. PMID: 19789319

Thomas FC, Taskar K, Rudraraju V, Goda S, Thorsheim H, **Gaasch JA**, Mittapalli RK, Palmieri D, Steeg PS, Lockman PR and Smith QR. Uptake of ANG1005, A Novel Paclitaxel Derivative, Through the Blood-Brain

Barrier into Brain and Experimental Brain Metastases of Breast Cancer. (2009) *Pharm Res.* 26(11):2486-94. PMID: 19774344, PMC2896053

Lockman PR, **Gaasch JA**, Borges K, Ehlo A, Smith QR. Using WebCt to implement a basic science competency education course. (2008). *AJPE*. 72(2): Article 39. PMID: 18483605

Gaasch JA, Geldenhuys WJ, Lockman PR, Allen DD, Van der Schyf CJ. Voltage-gated calcium channels provide an alternate route for iron uptake in neuronal cell cultures. (2007). *Neurochem. Res*. 32:1686-93. PMID: 17404834

Gaasch JA, Lockman PR, Geldenhuys WJ, Allen DD, Van der Schyf CJ. Brain Iron Toxicity: Differential responses of astrocytes, neurons, and endothelial cells. Review. (2007). *Neurochem. Res*. 32:1196-208. PMID: 17404839

Lockman PR, **Gaasch J**, McAfee G, Abbruscato TJ, Van der Schyf CJ, Allen DD. Nicotine Exposure does not alter plasma to brain choline transfer. (2006). *Neurosci. Res*. 31:503-8.

Gaasch JA, Bolwahn AB, Lindsey JS. Hepatocyte growth factor-regulated genes in differentiated RAW 264.7 osteoclast and undifferentiated cells. (2006). *Gene.* 369:142-52. PMID: 16403606

ABSTRACTS PUBLISHED/PRESENTED: POSTER OR PODIUM

Connor Ferguson and **Julie Lockman**. (Sept. 2022). Strengths for Scientists: Advancing Graduate Student Professional Development through a Strengths-based Cohort Model. 2022 AAMC Biomedical Research Training Conference. Chicago, IL

Allison Dagen, Lisa De-Frank Cole, Christina Glance, **Julie Lockman**. (June 2022). You Can't Be What You Can't See: Supporting Women's Leadership Development in Higher Education. Podium presentation. International Leadership Association Women & Leadership Conference. Portsmouth, UK.

Jennifer McCall-Hosenfield, **Julie Lockman**, Heather Dorr, Leigh Patterson. Advancing Faculty Scholarship in the 21st Century. 90 minute workshop. Accepted for July 2020 Association of American Medical Colleges 2020 Group on Faculty Affairs Professional Development Conference. GFA Compendium. Pg 8. https://www.aamc.org/media/48981/download

Julie Lockman and Louise Veselicky. (July 2018). Developing Future Academic Leaders. Abstract for poster presentation. Association of American Medical Colleges 2018 Group on Faculty Affairs Professional Development Conference. St. Louis, MO.

Julie Lockman and Louise Veselicky. (July 2018). Evidence-based assessment of basic science teaching efforts within an academic health sciences center. Abstract for poster presentation. Association of American Medical Colleges 2018 Group on Faculty Affairs Professional Development Conference. St. Louis, MO.

Ahmad Hanif, Werner Geldenhuys, **Julie A. Lockman**, Mohammed Nayeem, Paul R. Lockman, Marina Galvez-Peralta. (May 2018). Asyncronous Teaching of Biochemical Pharmacology in the PharmD Program. Poster Presentation. Celebrate Teaching, Learning, Research. West Virginia University. Morgantown, WV.

Monika R. Jones-Higgins, Y. Celik, **J. Lockman**. (November 2012). Neuroprotective Effects of NGP1-01 in Cellular Iron Overload Conditions. Abstract for poster presentation. Texas A&M University 10th Annual Pathways Student Research Conference, Galveston, TX.

Yasemin Celik, Mohamed Nounou, Chris Adkins, Paul R. Lockman, and **Julie A. Lockman**. (July 2012). Pharmacological Concentrations of Paclitaxel Kills Brain Metastases and Central Nervous System Cells. Abstract for poster presentation. Texas Tech University HSC, School of Pharmacy Research Days. Amarillo, TX.

Shanal F DeSilva, Chris E Adkins, Yasemin Celik, Manoj Pant, Paul R Lockman, **Julie A Lockman.** (April 2012). Albumin accumulation in experimental brain metastases of breast cancer is cytotoxic to normal brain cells. Abstract for oral presentation. WTAMU Annual Student Research Conference. West Texas A&M University, Canyon, TX.

Monika R. Jones-Higgins, Y. Celik, & **J. A. Lockman**. The evaluation of iron toxicity levels on three separate neuronal cell types. (April 2012). Abstract for poster presentation at the WTAMU Annual Student Research Conference. West Texas A&M University, Canyon, TX.

Shanal F. DeSilva, C. Adkins, Y. Celik, P. Lockman, **J. Lockman**. (March 2012). Albumin present in brain metastases of breast cancer is cytotoxic to astrocytes and neurons. Abstract for poster presentation at the Beta Beta Beta District Convention. Oklahoma University Biological Field Station, Kingston, Oklahoma.

Yasemin Celik, S. F. DeSilva, M. R. Jones, and **J. Lockman.** (March 2012)**.** Comparison of *In-Vitro* Paclitaxel Cytotoxicity in Normal Brain Cells and Cancer Cells. Abstract for poster presentation at the Beta Beta Beta District Convention. Oklahoma University Biological Field Station, Kingston, Oklahoma.

Shanal F. DeSilva, Yasemin Celik, **Julie A. Lockman.** (August 2011). Albumin is cytotoxic to astrocytes, neurons, but not metastatic breast cancer cells. Abstract for poster presentation at the 9th Annual Pathways Student Research Symposium, Texas A&M University. College Station, TX.

Shanal F. DeSilva, Chris E. Adkins, Yasemin Celik, Paul R. Lockman, **Julie A. Lockman.** (August 2011). Albumin permeability in experimental brain metastases of breast cancer and the effects on normal brain cells and tumor cells. Abstract for poser presentation. Cancer Prevention and Research Institute of Texas (CPRIT) annual conference. Austin, TX.

Paul Richard Lockman, Chris E. Adkins, Kaci A. Bohn, Rajendar K. Mittapalli, Vinay Rudraraju, Kunal Taskar, **Julie A. Gaasch**, Diane Palmieri, Quentin R. Smith, and Patricia Steeg. (August 2011). Heterogeneous tumor cell implantation, growth, and vascular function in brain metastases of breast cancer. Abstract for poster presentation. Era of Hope Annual Conference. Orlando, FL.

Shanal F. DeSilva, Saru Pahari, **Julie Lockman**. (April 2011). Variable albumin accumulation in experimental brain metastasis of breast cancer. Abstract for poster presentation. WTAMU Annual Student Research Conference. West Texas A&M University, Canyon, TX.

Manoj K. Pant, Kaci A. Bohn, Christopher E. Adkins, Rajendar K. Mittapalli, **Julie A. Gaasch.** (Oct 2010). Analysis of Albumin Permeability in Brain Metastases. Abstract for poster presentation. 8th Annual Pathways Student Research Symposium. West Texas A&M University. Canyon, TX.

Mittapalli RK, Bohn KA, Taskar KS, Rudraraju V, **Gaasch JA**, Smith QR and Lockman PR**.** (Nov 2008) Permeability measurements at the blood-brain and blood-tumor barrier using different molecular weight fluorescent markers. Abstract for poster presentation. Society for Neuroscience Annual Meeting. Washington DC.

Rudraraju V, Taskar KS, **Gaasch JA**, Thomas FC, Mitapalli RK, Lockman PR, Palmieri D, Steeg P, and Smith QR. (November 2008) Uptake of Suberoylanilide Hydroxamic Acid, a Histone Deacetylase Inhibitor, into Brain Metastases of Breast Cancer. Abstract for poster presentation at The American Association of Pharmaceutical Scientists, Annual Meeting. San Diego, CA.

Taskar KS, Rudraraju V, Thorsheim H, **Gaasch JA**, Mittapalli RK, Lockman PR, Steeg P, Palmieri D, Polli JW, Castellino SX, Rubin SD, Smith QR (November 2008) Distribution of Dual Tyrosine Kinase Inhibitor Lapatinib in Brain Metastases of Breast Cancer. Abstract for poster presentation. The American Association of Pharmaceutical Scientists, Annual Meeting.

Smith QR, Rudraraju V, Taskar KS, **Gaasch JA**, Mittapalli RK, Bohn KA, Palmieri D, Lockman PR , Steeg P (July 2008) Anticancer Drug uptake and distribution in MDA-MB-231BR brain metastases of breast cancer. Abstract for poster presentation. Era of Hope, DOD Breast Cancer Research Program, Baltimore MD.

Lockman PR, Bohn KA, Mittapalli RK, Rudaruju V, Taskar K, **Gaasch JA**, Palmieri D, Smith QR, Steeg P (July 2008) Blood-tumor barrier permeability and vascularity in a model of brain metastasis of breast cancer. Abstract for poster presentation. Era of Hope, DOD Breast Cancer Research Program, Baltimore MD.

Taskar K, Mittapalli RK, Rudraraju V, Egbert JA, Bohn KA, **Gaasch JA**, Thomas F, Lockman PR and Smith QR. (November 2007) Improved Left Ventricle Intracardiac injection method for brain metastases of breast cancer in immune compromised mice. Abstract for poster presentation. Society for Neuroscience Annual Meeting. San Diego, CA.

Goda S, Thomas FC, **Gaasch JA**, Abbruscato TJ, and Smith QR. (November 2007) Blood-brain barrier permeability and transport of bumetanide. Abstract for poster presentation. Society for Neuroscience Annual Meeting. San Diego, CA.

Bohn KA, Mittapalli RK, Egbert JM, **Gaasch JA**, Taskar KS, Rudraraju V, Smith QR, and Lockman PR. (August 2007) Microvascular density and vascular volume similarities between implantation and metastatic models of tumor induction. Abstract for poster presentation. Texas Tech University HSC, School of Pharmacy, Annual Research Days. Amarillo, TX.

Gaasch JA, Lockman PR, Geldenhuys WJ, Allen DD, and Van der Schyf CJ. (October 2006) Differential toxic responses to iron overload by neuronal, brain endothelial, and astrocytic cells in vitro: protection by the L-type calcium channel blocker nimodipine. Abstract for **podium presentation.** Society for Neuroscience Annual Meeting. Atlanta, Georgia.

Geldenhuys WJ, **Gaasch JA**, Lockman PR, Allen DD, and Van der Schyf CJ.
(October 2006) KCl-stimulated iron uptake in PC12 cells is blocked by nimodipine. Abstract for poster presentation. Society for Neuroscience Annual Meeting. Atlanta, GA.

Gaasch JA, Geldenhuys WJ, Lockman PR, Allen DD, and Van der Schyf CJ. (February 2006) Iron entry into neuronal cells via the L-type Calcium channel in an *in vitro* model of iron overload. Abstract for poster presentation. Texas Tech University HSC, Student Research Week, Lubbock, TX.

Gaasch JA, Geldenhuys WJ, Van der Schyf CJ*, Allen DD, and Lockman PR. (November 2005) Iron enters neuronal cells via the L-type calcium channel in an *in vitro* model of subarachnoid hemorrhage. Abstract for **podium presentation.** Society for Neuroscience Annual Meeting. Washington, D.C.

Lockman PR, **Gaasch JA**, Mdzinarishvili A, Bickel U, Geldenhuys WJ, Van der Schyf CJ, and Allen DD. (November 2005) Long term effects of subarachnoid hemorrhage on blood-brain barrier integrity and cerebral perfusion flow. Abstract for poster presentation. Society for Neuroscience Annual Meeting. Washington, D.C.

Gaasch JA, Geldenhuys WJ, Van der Schyf CJ*, Allen DD and Lockman PR. (July 2005) Iron toxicity in neuronal cells via entry through the L-type calcium channel. Abstract for poster presentation. Texas Tech University HSC, School of Pharmacy, Annual Research Days. Amarillo, TX.

Gaasch JA and Lindsey JS. (July 2004) Microarray Analysis of Hepatocyte Growth Factor Regulated Genes in Osteoclast Cells. Poster Presentation. Abstract for presentation at the Texas Tech University HSC, School of Pharmacy, Annual Research Days. Amarillo, TX.

Rec'd 9/1/11

Curriculum Vitae as of 12/1/2005

ROBERT R. MERCER

Address: National Institute for Occupational Safety and Health
1095 Willowdale Rd, Mail Stop 2015
Morgantown, WV 26505
Email RPM7@cdc.gov
(304) 285-6157 Office, (304) 285-5938 Fax

Birthdate: November 7, 1952

Citizenship: United States

Family: Children: Abby (9-24-81) Robert (2-6-86)

Education:

1972 - Citadel
1975 - B.A., University of North Carolina
1982 - Ph.D., University of North Carolina
Department of Biomedical Mathematics and Engineering

Postgraduate Training:

1983-1987 - Medical Research Associate, Department of Medicine, Duke University Medical Center

Appointments:

1975-1977 - Electronic Technician, Physiology, University of North Carolina
1978-1979 - Biologist, Environmental Protection Agency
1979-1982 - Biomedical Engineer, Environmental Protection Agency
1987-1992 - Assistant Medical Research Professor, Department of Medicine, Duke
1992-1996 - Associate Medical Research Professor, Department of Medicine, Duke
1992-1996 - Duke University Integrated Toxicology Program
1992-1996 - Director of Research, Center for Extrapolation Modeling
1997-Date - Biomedical Engineer, NIOSH, Pathology and Physiology Branch
1998-Date - Adjunct Associate Professor, Department of Physiology, WVU

Societies:

1982 - Sigma Xi
1987 - American Physiological Society

11/12-1002

1988 - Biomedical Engineering Society

Presentations at National and International Meetings:

May 1979 Mercer RR, C Ackrill, P Taylor, J O'Neil. "Measurement of the multiple breath nitrogen washout in hamsters with emphysema-like lesions." Conference on Respiratory Physiology of Small Animals, UC Davis.

May 1985 Mercer RR and JD Crapo. "Alveolar P-V relationships determined from 3-D reconstruction of alveoli in the rat lung." ATS, Anaheim, California.

Aug 1985 Mercer RR, LY Chang, KE Pinkerton and JD Crapo. "A new approach for determining sampling errors and optimizing experimental design in EM morphometry." IV Euro. Symp. for Stereology, Goteborg, Sweden.

Aug 1985 Mercer RR and JD Crapo. "Methods for 3-D reconstruction of alveoli." IV Euro. Symp. for Stereology, Goteborg, Sweden.

May 1986 Mercer RR and JD Crapo. "Three-dimensional reconstruction of the ventilatory unit." American Thoracic Society, Kansas City, Missouri.

May 1987 Mercer RR and JD Crapo. "Changes in alveolar duct length and diameter with deflation." American Thoracic Society, New Orleans, Louisiana.

June 1987 Mercer RR. "3-D Reconstruction of the Gas Exchange Region." Air Pollution Control Association, New York, New York. Invited Speaker.

Oct 1987 Mercer RR. "Modeling Ventilation." Extrapolation Modeling of Inhaled Particles and Gases, Duke, Durham, North Carolina. Invited Speaker.

May 1988 Mercer RR. "Comparison of gas exchange structure across species." American Thoracic Society, Las Vegas, Nevada.

May 1988 Mercer RR. "Sites of airspace edema formation following hyperbaric and hyperoxic exposures." American Physiological Society, Las Vegas, Nevada.

Aug 1988 Mercer RR. "Mechanical properties of lung parenchyma." World Congress on Biomedical Engineering, San Antonio, Texas. Invited Speaker.

Mar 1989 Mercer RR. "Quantification of tracer movement in pulmonary edema." FASEB, New Orleans, Louisiana.

Apr 1990 Mercer RR. "Pulmonary targets for inhaled oxidants." The Lung as a Target for Oxidant Stress, Duke University Integrated Toxicology Program Symposium, Durham, North Carolina. Invited Speaker.

Aug 1990 Mercer RR. "Dosimetry of reactive gases in gas exchange units of the lungs." EPA seminar series, Research Triangle Park, North Carolina.

Aug 1990 Mercer RR. "Volume-pressure hysteresis of the lungs." First World Congress of Biomechanics. San Diego, California. Invited Speaker.

Apr 1991 Mercer RR. "Changes in collagen fibril structure with lung inflation." American Physiological Society, Atlanta, Georgia.

Oct 1992 Mercer RR. "The architecture of collagen and elastin fibers." Biomedical Engineering Society Fall Meeting, Charlottesville, Virginia. Invited Speaker.

Feb 1993 Mercer RR. "Engineering approaches to inhalation toxicology." Penn

State. Visiting Professor.

Feb 1994 Mercer RR. "Mathematical modeling to assess the toxic inhaled pollutants." Conference in Biomedical Engineering, Chapel Hill, N.C. Invited Speaker.

Mar 1994 Mercer RR. "Extrapolation modeling of complex particulate dosimetry." Center for Indoor Air Research, Baltimore, Maryland. Invited Speaker.

Oct 1994 Mercer RR. "Distribution of strain in the lungs." APS conference on Mechanotransduction and regulation of growth and differentiation. Sarasota, Florida. Invited Speaker.

Mar 1995 Mercer RR. "Pulmonary deposition models." Nasal and Pulmonary Drug Delivery, Munich, Germany. Invited Speaker.

Dec 1996 Mercer RR. "Human airway epithelial cell distribution." UNC Pulmonary Medicine Research Conference. Invited Speaker.

Apr 1996 Mercer RR. "Toxicity of inhaled ambient dusts, their sites of deposition and injury." NIOSH, Morgantown, West Virginia. Invited speaker.

Oct 1996 Mercer RR. "Toxicity from inhaled nitric oxide." University of New York, Rochester, New York.

Mar 1998 Mercer RR. "Small airways epithelial cells and diseases", University of North Carolina Cystic Fibrosis Center. Invited Speaker.

Mar 2001 Mercer RR "Habituation in NO mediated production of cyclic GMP", SOT, Seattle, Wa.

Aug 2003 Mercer RR "Identification of SWCNT in the lungs", NIOSH Nanoaerosol Conference, Wheeling, WV.

Mar 2005 Mercer RR "Responses of lung parenchyma to carbon nanotubes", SOT, New Orleans,La, Platform Speaker

Oct 2005 Mercer RR "Lung parenchymal responses to carbon nanotubes", 2nd International Symposium on Nanotechnology and Occupational Health, Minneapolis, Mn Invited Speaker

Jan 2006 Mercer RR "Distribution of SWCNT in the lungs", NanoTox 2006, Miami, Fl, Invited Speaker

Apr 2006 Mercer RR "SWCNT Distribute and Injure the Lungs in a size dependent manner", New York Occupational Safety & Health Research Center 27th annual meeting, New York, NY, Invited Speaker

Jun 2006 Mercer RR "Inhalation toxicology of SWCNT", Society for Risk Assessment Teleseminar, Invited Speaker

Mar 2007 Mercer RR "Dispersion Enhances Toxicity of Carbon Nanotubes", Nanoparticles Platform Session Speaker SOT, Charlotte, NC.

Mar 2008 Mercer RR "Use of labeled single walled carbon nanotubes to study acute translocation from the lungs." Nanoparticles Platform Session Speaker SOT, Charlotte, NC.

Mar 2010 Mercer RR "Movement of carbon nanotubes into the interstitium", NIOSH Nanotoxicology Research Center Oglebay, WV Apr 2010. Nanoparticles Platform Session Speaker SOT, Charlotte, NC.

Mar 2011 Mercer RR "Pulmonary fibrotic response to sub-chronic multi-walled

carbon nanotubes exposure." Nanotoxicology Platform Session Speaker SOT, Washington,DC.

Participation in Workshops and Study Sections :

NHLBI Workshop on Micromechanics of the Lung, March 28-29, 1987. Invited Speaker.

NHLBI Workshop on Effects of Physical Forces on Lung Structure, Function and Metabolism, April 3-4, 1989. Invited Speaker.

NHLBI Workshop on Environmental Lung Disease, May 29-31, 1991. Invited Speaker.

Environmental Criteria and Assessment Office, USEPA, 1991. Workshop on Ventilation Rates and Respiratory Surface Areas for Inhalation RfC Methodology. Invited participant.

Office of Technology Assessment, U.S. Congress, 1991. Workshop on Noncancer Health Threats to the Lung. Invited participant.

Clean Air Scientific Advisory Committee (CASAC), USEPA 1992. Review of the draft National Ambient Air Quality Standards for Nitrogen Oxides. Consultant.

Workshop on Particle Deposition and Clearance from the Lungs. International Society for Aerosols in Medicine, Garmisch-Partenkirchen, Germany, March, 1993. Invited Speaker.

Workshop on Interactions of Particles with the Lung. American Lung Association Meeting, San Francisco, California, May 1993.

Workshop on Toxicity of Drinking Water Contaminants. USEPA workgroup, May 1995-1997.

NIOSH Workshop on Aerosols, Wheeling WV, Aug 2004

NIOSH Workshop on Nanoaerosols, Wheeling WV, Aug 2005

NIOSH Construction NORA National Academy Review 2008

NIOSH Workshop on Nanomaterials, Wheeling WV, Apr 2010

Awards:

2005 Alice Hamilton Award Honorable Mention Biological Sciences Category and
2006 Charles C. Shepard Science Award Outstanding Scientific Paper
Co-Author on Shvedova et al, Unusual inflammatory and fibrogenic pulmonary responses to single-walled carbon nanotubes in mice. Am J Physiol Lung 289:L698-708,2005.

2008 Charles C. Shepard Science Award Nominee for Outstanding Scientific Paper
Mercer et al, Alteration of deposition pattern and pulmonary response as a result of improved dispersion of aspirated single walled carbon nanotubes in a mouse model. Am J Physiol Lung Cell Mol Physiol. 294:L87-97, 2008.

2008 Bullard-Sherwood Award for Research-to-Practice. Co-Author on Hubbs et al, Prevention of Flavoring-Related Bonchiolitis Obliterans.

2009 Alice Hamilton Award for Outstanding Scientific Paper. Co-Author on Shvedova et al. Inhalation vs. aspiration of single-walled carbon nanotubes in C57BL/6 mice: inflammation, fibrosis, oxidative stress, and mutagenesis. Am J Physiol Lung Cell Mol Physiol 295:L522-L565.

2010 Alice Hamilton Award for Outstanding Scientific Paper. Co-Author on Porter DW, Hubbs AF, Mercer RR, Wu N, Wolfarth MG, Sriram K, Leonard SS, Battelli L, Schwegler-Berry D, Friend S, Andrew M, Chen BT, Tsuroka S, Endo M and Castranova V. Mouse pulmonary dose- and time course-responses induced by exposure to multi-walled carbon nanotubes. Toxicology 269:136-147, 2010.

2011 Charles C. Shepard Science Award Nominee for Outstanding Scientific Paper
Mercer et al, Distribution and Persistence of Pleural Penetrations by Multi-walled Carbon Nanotubes. Part Fibre Toxicol. Epub 7:28 2010

Reviewer:

American Lung Association grant review
American Journal of Physiology
American Review of Respiratory Disease
IEEE Transaction of Biomedical Engineering
Journal of Applied Physiology
Nature
Particle and Fibre Toxicology

Publications:

1. Smith DM, RR Mercer, JL Goldman, OW Henson Jr and MM Henson. A phase-locked loop device for the fine frequency analysis of the biosonar signals of bats. J Acoust Soc Am 61:1092-1093, 1977.

2. Smith DM, RR Mercer and FL Eldridge. Servo Control of end-tidal CO_2 in paralyzed animals. J App Physiol 45:133-136, 1978.

3. Smith DM, RH Propst and RR Mercer. An FM electronics system for biomedical data recording. IEEE Transactions on BME 26:170-172, March 1979.

4. Raub JA, RR Mercer, FJ Miller, JA Graham and JJ O'Neil. Dose response to elastase-induced emphysema in hamsters. Am Rev Respir Dis 125:432-435, 1982.

5. Johnson TA, RR Mercer, PC Taylor, JA Graham and JJ O'Neil. Oxygen consumption measured with microcomputer-assisted Warburg manometry. J Appl Physiol 53:1634-1637, 1982.

6. Mercer RR. Doctoral Dissertation: Quantitative morphometric observations on the role of osteocytes in bone resorption during lactation. University of North Carolina, W4 M554 December 1982.

7. Raub, JA, RR Mercer, RJ Kavlock, and CJ Setzer. Effects of prenatal nitrofen exposure on postnatal lung function in the rat. Prog Clin Biol Res 140:119-134, 1983.

8. Crapo JD, BE Barry, L Chang and RR Mercer. Alterations in lung structure caused by inhalation of oxidants. J Toxicol Environ Hlth 13:301-321, 1984.

9. Brumley G, J Stevens, J Raub, R Mercer and J Crapo. Type II alveolar cell dual function: repair versus surfactant synthesis. Progress Resp Res 18:154-160, 1984.

10. Raub JA, RR Mercer, M Grady and P Hu. Inhalation studies of Mt. St. Helen's volcanic ash in animals. II. Lung function, biochemistry and histology. Environ Res 37:72-83, 1985.

11. Wiester MJ, CJ Setzer, BE Barry, RR Mercer and MA Grady. Inhalation studies of Mt. Saint Helen volcanic ash in animals: Respiratory mechanics, airway reactivity and deposition. Environ Res 36:230-240, 1985.

12. Mercer RR and MA Crenshaw. The role of osteocytes in bone resorption during lactation: morphometric observations. Bone 6:269-274, 1985.

13. Chang LY, RR Mercer and JD Crapo. Differential distribution of brush cells in the rat lung. Anatomical Record 216:49-54, 1986.

14. Pinkerton KE, CG Plopper, RR Mercer, VL Roggli, AL Patra, AR Brody and JD Crapo. Airway branching patterns influence asbestos fiber location and the extent of tissue injury in the pulmonary parenchyma. Lab Invest 55:688-695, 1986.

15. Mercer RR and JD Crapo. Methods for 3-D reconstruction of alveoli. Acta Stereologica 5:149-153, 1986.

16. Mercer RR, JM Laco and JD Crapo. Three-dimensional reconstruction of alveoli in the rat lung for determination of pressure-volume relationships. J Appl Physiol 62:1480-1487, 1987.

17. Mercer RR and JD Crapo. Three-dimensional reconstruction of the rat acinus. J Appl Physiol 63:785-794, 1987.

18. Mercer RR, LY Chang, KE Pinkerton and JD Crapo. A new approach for determining sampling errors and optimizing experimental design in EM morphometry. Acta Stereologica 6:141-144, 1987.

19. Barry BE, RR Mercer, FJ Miller and JD Crapo. Effects of inhalation of 0.25 ppm ozone on the terminal bronchioles of juvenile and adult rats. Exp Lung Res 14:225-245, 1988.

20. Crapo JD, RO Crapo, RJ Jensen, RR Mercer and ER Weibel. Evaluation of lung diffusing capacity by physiological and morphometric techniques. J Appl Physiol 64:2083-2091, 1988.

21. Chang L, RR Mercer, BL Stockstill, FJ Miller, JA Graham, JJ Ospital and JD Crapo. Effects of low levels of NO_2 on terminal bronchiolar cells and its relative toxicity compared to O_3. Toxico Appl Pharmacol 96:451-464, 1988.

22. Randell SH, RR Mercer and SL Young. Postnatal growth of pulmonary acinii and alveoli in normal and oxygen exposed rats studied by serial-section reconstructions. Am J Anat 186:55-68, 1989.

23. Randell SH, RR Mercer, and SL Young. Neonatal hyperoxia affects the pulmonary alveolar and capillary structure of 40-day-old rats. Am J Path 136:1259-1266, 1990.

24. Mercer RR, SH Randell and SL Young. Measurement of boundaries using a digitizer tablet. J Microscopy 160:97-105, 1990.

25. Mercer RR, GM McCauley and S Anjilvel. Approximation of surfaces in quantitative 3-D reconstructions. IEEE Trans BME 37:1136-1146, 1990.

26. Mercer RR and JD Crapo. The spatial distribution of collagen and elastin fibers in the lungs. J Appl Physiol 69:756-765, 1990.

27. Chang LY, RR Mercer, KE Pinkerton and JD Crapo. Quantifying lung structure: experimental design and biological variation in various models of lung injury. Am Rev Respir Dis 143:625-634, 1991.

28. Mercer RR, ML Russell and JD Crapo. Radon dosimetry based on the depth distribution of nuclei in human and rat airways. Health Physics 61:117-130, 1991.

29. Mercer RR, S Anjilvel, FJ Miller and JD Crapo. Inhomogeneity of ventilatory unit volume and its effects on reactive gas uptake. J Appl Physiol 70:2193-2205, 1991.

30. Rannels DE, B Stockstill, RR Mercer and JD Crapo. Cellular changes in the lungs of adrenalectomized rats following left pneumonectomy. Am J Respir Cell Mol Physiol 5:351-362, 1991.

31. Mercer RR and JD Crapo. Structural changes in elastin fibers following elastase administration in hamsters. J Appl Physiol 72:1473-1479, 1992.

32. Stone KC, RR Mercer, P Gehr, B Stockstill and JD Crapo. Allometric relationships of cell numbers and size in the mammalian lung. Am J Respir Cell Mol Biol 6:235-243, 1992.

33. Pinkerton KE, RR Mercer, CG Plopper and JD Crapo. Distribution of injury and microdosimetry of ozone in the ventilatory unit of the rat. J Appl Physiol 73:817-824, 1992.

34. Stone KC, RR Mercer, BA Freeman and JD Crapo. Distribution of lung cell numbers and volumes between alveolar and nonalveolar tissues. Am Rev Respir Dis 146:454-456, 1992.

35. Miller FJ, RR Mercer and JD Crapo. Lower respiratory tract structure of laboratory animals and humans: dosimetry implications. Aerosol Sci and Tech 18:257-271, 1993.

36. Pinkerton KE and RR Mercer. Ozone, extracellular matrix and epithelial adaption. Health Effects Institute Communications 1:15-19, 1992

37. Vincent R, RR Mercer, LL Chang, FJ Miller, DL Costa and JD Crapo. Quantitative ultrastructural analysis of connective tissue in the lungs. Health Effects Institute

Communications 1:24-27, 1992.

39. Pinkerton KE, JT Gallen, RR Mercer, VC Wong, CG Plopper and BK Tarkington. Aerosolized fluorescent microspheres detected in the lung using confocal scanning laser microscopy. Micro Res Tech 26:437-443, 1993.

40. Mercer RR, ML Russell, VL Roggli and JD Crapo. Cell number and distribution in human and rat airways. Am J Respir Cell Mol Biol 10:613-624, 1994.

41. Mercer RR, ML Russell and JD Crapo. Alveolar septal structure in different species. J Appl Physiol 77:1060-1066, 1994.

42. Koblinger L, W Hofmann, RC Graham and RR Mercer. Aerosol inhalation in the rat lung. J Aerosol Med 8:7-19, 1995.

43. Mercer RR, DL Costa and JD Crapo. Effects of prolonged exposure to low doses of nitric oxide or nitrogen dioxide on alveolar septa of the adult rat lung. Lab Invest 73:20-28, 1995.

44. Stockstill BL, LY Chang, MG Menache, PW Mellick, RR Mercer and JD Crapo. Bronchiolarized metaplasia and interstitial fibrosis in rat lungs chroncially exposed to low and high ambient levels of ozone. Tox Appl Pharm 134:251-263, 1995.

45. Chang LY, BL Stockstill, MG Menache, RR Mercer and JD Crapo. Consequences of prolonged inhalation of ozone on F344/N rats. Res Rep Health Eff Inst 65:3-39, 1995.

46. Overton JH, RC Graham, MG Menache, RR Mercer and FJ Miller. Influence of tracheobronchial region expansion and volume on reactive gas uptake and interspecies dose extrapolations. Inhal. Toxicol. 8:723–745, 1996

47. Allred TF, Mercer, RR, Thomas FR and Auten RL. Effects of brief exposure to 95% oxygen on surfactant protein and mRNA in adult rat alveolar and bronchiolar epithelium. Am J Physiol 276:L999-L1009, 1999.

48. Vlahovic G, Russell ML, Mercer RR and JD Crapo. Cellular and connective tissue changes in alveolar septal walls in emphysema. Am J Respir Crit Care Med, 160:2086-2092, 1999.

49. Brady TC, Crapo JD, and RR Mercer. Nitric oxide inhalation transiently elevates pulmonary levels of cyclic GMP, inducible nitric oxide synthase mRNA and TNF-α. Am J Physiol, 275:L509-L515, 1998.

50. Aderibigbe AO, Thomas RF, Mercer RR and RL Auten. Brief exposure to 95% oxygen alters surfactant protein D and mRNA in adult rat alveolar and bronchiolar epithelium. Am J Respir Cell Mol Biol, 20:219-227, 1999.

51. Porter, DW, Castranova, V, Robinson, VA, Hubbs, AF, Mercer, RR, Scabilloni, J., Goldsmith, T., Schwegler-Berry, D., Battelli, L., Washko, R., Burkhart, J., Piacitelli, C., Whitmer, M. and Jones W. Acute inflammatory reaction in rat after intratracheal instillation of material collected from a nylon flocking plant. J Toxicol Environ Health 57:25-45, 1999.

52. Millecchia, L., Mercer, R., Schwegler-Berry, D., Willard, P., and Friend, S. Apoptosis revealed by epifluorescence can be compared with silica localization by SEM backscatter using paraffin sections on carbon planchets. Microscopy and Microanalysis 6 (Suppl.2) 578-579, 2000.

53. Wang L, Medan D, Huang C, Shi X, Mercer RR, Millecchia L, Castranova V, Rojanasakul Y. Role of neutrophil apoptosis in vanadium-induced pulmonary inflammation in mice. J Env. Path. Toxicol. Oncol. 21:343-350, 2002.

54. Hubbs AF, Battelli LA, Goldsmith WT, Porter DW, Frazer D, Friend S, Schwegler-Berry D, Mercer RR, Reynolds JS, Grotw A, Castranova V, Kullman G, Fedan JS, Dowdy J and WG Jones. Necrosis of nasal and airway epithelium in rats inhaling vapors of artificial butter flavoring. Toxicol Appl Pharmacol. 185:128-35. 2002.

55. Wang L, Antonini J, Rojanasakul Y, Castranova V, Scabilloni JF and Mercer RR. Potential role of apoptotic macrophages in pulmonary inflammation and fibrosis. J Cell Physiol. 194:215-24 2002.

56. Wang L, Medan D. Mercer RR, Overmiller D. Leornard S, Castranova V, Shi X., Ding M., Huang C. and Rojanasakul Y. Vanadium-induced apoptosis and pulmonary inflammation in mice: Role of reactive oxygen species. J. Cell Physiology, 195:99-107 2003.

57. Porter DW, AF Hubbs, RR Mercer V Robinson, V Ramsey M Dawn L Jeffrey, A. Khan, L Battelli, K Brumbaush V Castranova. Progression of lung inflammation and damage in rats after cessation of silica inhalation. Toxicol. Sci, 79:370-380 2004.

58. Scabilloni, L Wang, JM Antonini, JR Roberts, V Castranova, RR Mercer. Matrix metalloproteinase induction in fibrosis and fibrotic nodule formation due to silica inhalation. AJP Lung Cell and Mol Physiol. 288:L709-717, 2005.

59. Wang, L, L Bowman, Y Lu, Y Rojanasakul, R Mercer, V Castranova, M Ding. Essential role of p53 in silica-induced apoptosis. Am J Physiol Lung Cell Mol Physiol 288: L488-496 2005.

60. Shvedova AA, Kisin ER, Mercer R, Murray AR, Johnson VJ, Potapovich AI, Tyurina YY, Gorelik O, Arepalli S, Schwegler-Berry D, Hubbs AF, Antonini J, Evans DE, Ku BK, Ramsey D, Maynard A, Kagan VE, Castranova V, Baron P. Unusual inflammatory and fibrogenic pulmonary responses to single walled carbon nanotubes in mice. Am J Physiol Lung Cell Mol Physiol. 289:698-708, 2005.

61. Baker, BA, K.M.K. Rao, K. Krajnak, R. Mercer, G.R. Miller, and R.G. Cutlip, Stereological analysis of muscle morphology following exposure to repetitive stretch-shortening cycles in a rat model. Appl Physiol. Nutr. Metab. 31:167-170, 2006.

62. Baker, B.A., K.M.K. Rao, R.R. Mercer, K.B. Geronilla, M.L. Kashon, G.R. Miller, R.G. Cutlip. Quantitative histology and MGF gene expression in rats following SSC exercise *in vivo*,Med. Sci. Sports Exerc. 38:463-471, 2006.

63. Wang, LY, JF Scabilloni, J Antonini, Y Rojanasakul, V Castranova and RR Mercer. Induction of secondary apoptosis, inflammation and lung fibrosis after intratracheal instillation of apoptotic cells in rats. Am J Physiol Lung Cell Mol Physiol. 290:L695-L702. 2006.

64. Wang, LY, JF Scabilloni, JM Antonini, V Castranova, Y Rojanasakul, JR Robert, Z Zhang, RR Mercer. Role of lung surfactant in phagocytic clearance of apoptotic cells by macrophages in rats. Lab Invest 86:458-466, 2006.

65. Kagan, VE, YY Tyurina, VA Tyurin, NV Konduru, AI Potapovich, AN Osipov, ER Kisin, D Schwegler-Berry, RR Mercer, V Castranova, AA Shvedova. Direct and indirect effects of single walled carbon nanotubes on RAW 264.7 macrophages: Role of Iron. Toxicol Letters 165:88-100, 2006.

66. Ghanem, MM, Battelli LA, Mercer RR, Scabilloni JF, Kashon, ML, MA, JY, Nath J and Hubbs AF. Apoptosis and Bax expression are increased by coal dust in the polycyclic aromatic hydrocarbon exposed lung. Environ. Health Persp 114:1367-1373, 2006.

67. Summan, M Warren GL, Mercer RR, Chapman R, Hulderman T, Van Rooijen N and Simeonova. Macrophages and skeletal muscle regeneration: a clodronate-containing liposome depletion study. Am J Physiol Reg Integr Comp Physiol 290:R1488-1495, 2006.

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69. Baker BA, Mercer RR, Geronilla KB, Kashon ML, Miller GR and Cutlip RG. Impact of repetition number on muscle performance and histological response. Med Sci Sports Exerc 39:1275-1281, 2007.

70. Hubbs AF, Goldsmith WT, Kashon ML, Frazer D, Mercer RR, Battelli LA, Kullman GJ, Schwegler-Berry D, Friend S, Castranova V. Respiratory toxicologic pathology of inhaled diacetyl in sprague-dawley rats. Toxicol Path, 36:330-344, 2008.

71. Wang L, Chanvorachote P, Toledo D, Stehlik C, Mercer RR, Castranova V, and Rojanasakul Y. Peroxide is a key mediator of Bcl-2 downregulation and apoptosis induction by cisplatin in human lung cancer cells. Mol. Cancer Thera. Mol Pharmacol. 73:119-27., 2008.

72. Mercer RR, Scabilloni J, Wang L, Kisin E, Murray A, Schwegler-Berry D, Shvedova A, and Castranova V. Alteration of deposition pattern and pulmonary response as a result of improved dispersion of aspirated single walled carbon nanotubes in a mouse model. Am J Physiol Lung Cell Mol Physiol. 294:L87-97, 2008.
73. Shvedova AA, Kisin E, Murray E, Johnson V, Gorelik O, Arepalli S, Hubbs AF, Mercer RR, Keohavong P, Sussman N, Jin, J, Stone S, Chen BT, Deye G, Maynard A, Castranova V, Baron P, VE Kagan. Inhalation versus aspiration of single walled carbon nanotubes in C57BL/6 mice: Inflammation, Fibrosis , Oxidative stress and Mutagenesis. Am J Physiol Lung Cell Mol Physiol 295:L551-565, 2008
74. Baker BA, Hollander MS, Mercer RR, Kashon ML and Cutlip RG. Adaptive stretch-shortening contractions: diminished regenerative capacity with aging. Appl Physiol Nutr Metab 33:1181-191, 2008.
75. Zhao H, Ja, JK, Barger MW, Mercer RR, Millecchia L, Schwegler-Berry D, Castranova V and Ma JY. Reactive Oxygen/Nitrogen species-mediated lung inflammation and mitochondrial dysfunction in wild type and INOS-Deficient mice exposed to diesel exhaust particles. J. Toxicol. Environ Health Part A,72:8,560-570, 2009.
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79. Wang L, Castranova V, Mishra A, Chen B, Mercer RR, Schwegler-Berry B and Rojanasakul Y. Dispersion of single-walled carbon nanotubes by a natural lung surfactant for pulmonary in vitro and in vivo toxicity studies. Part Fibre Toxicol. Epub 2010.
80. Mercer RR, Hubbs AF, Scabilloni JF, Wang LY, Battelli LA, Schwegler-Berry D, Castranova V and Porter D. Distribution and Persistence of Pleural Penetrations by Multi-walled Carbon Nanotubes. Part Fibre Toxicol. Epub 7:28 2010.
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1. O'Neil JJ, JA Raub, RR Mercer, FJ Miller and JA Graham. Pulmonary function changes in small animals following exposure to oxidant gases and experimental emphysema. *Proceedings of the 11th Conference on Environmental Toxicology*, pp 105-113, 1980.

2. Crapo JD, LY Chang, BE Barry and RR Mercer. Morphometric analysis of lung injury caused by inhalation of low levels of ozone and nitrogen dioxide. In: *Evaluation of the Scientific Basis for Ozone/Oxidants Standards (Transactions)*, Si Duk Lee, ed., pp 348-356, Air Pollution Control Association, 1985.

3. Mercer RR, PB Bennett and KE Pinkerton. Identification of the sites of fluid leakage into the air spaces during early stages of hyperbaric oxygen exposure. *Proceedings of the 9th International Symposium of the Undersea Medical Society*, 627-635, 1987.

4. Mercer RR and JD Crapo. Structure of the gas exchange region of the lungs determined by three-dimensional reconstruction. In: *Toxicology of the Lung*, DE Gardner, JD Crapo and EJ Massaro, eds. Raven Press, New York, pp 71-102, 1988.

5. Mercer RR and JD Crapo. Anatomical modeling of microdosimetry of inhaled particles and gases in the lung. In: *Extrapolation of Dosimetric Relationships for Inhaled Particles and Gases*. JD Crapo et al, eds. Academic Press, San Diego, pp 69-78, 1989.

6. Coleman RE, RJ Jaszczak, KL Greer, RR Mercer and JD Crapo. Regional dosimetry of inhaled particles using SPECT. In: *Extrapolation of Dosimetric Relationships for Inhaled Particles and Gases*. JD Crapo et al, eds. Academic Press, San Diego, pp 201-210, 1989.

7. Mercer RR and JD Crapo. Architecture of the acinus. Chapter 10 in *Comprehensive Treatise on Pulmonary Toxicology Volume I: Comparative Biology of the Normal Lung*. C Plopper and KE Pinkerton, eds. CRC Press, Boca Raton, pp102-123, 1992.

8. Mercer RR. Volume-pressure hysteresis of the lungs. In: *Respiratory Biomechanics: Engineering Analysis of Structure and Function*. M.A. Farrel Epstein and J.R. Ligas, eds. Springer-Verlag, New York, pp. 34-38, 1990.

9. Crapo JD, LY Chang, FJ Miller and RR Mercer. Aspects of respiratory tract structure and function important for dosimetry modeling: interspecies comparisons. In: *Route to Route Extrapolation for Risk Assessment*. T. Gerrity and C. Henry, eds. Elsevier Science Pub Co, pp 15-31,1990.

10. Mercer RR and KE Pinkerton. The influence of ventilatory unit size on the distribution and uptake of reactive gases. In: *Biofluid Mechanics Volume III*. D.J. Schneck and C.L. Lucas, eds. New York University Press, New York, pp 27-36, 1990.

11. Mercer RR and JD Crapo. Three-dimensional analysis of lung structure and its application to pulmonary dosimetry models. In: *Toxicology of the Lung*, 2nd ed., DE Gardner, JD Crapo and EJ Massaro, eds. Raven Press, New York, pp 155-186, 1993.

12. Pinkerton KE, JR Harkema, DM Hyde, AT Mariassy, JT McBride, RR Mercer, KT Morgan, CG Plopper, and JA StGeorge. Structure and function of the respiratory tract. In: Handbook of Human Toxicology, EJ Massaro, ed. CRC Press, Inc., Boca Raton, FL., pp469-492, 1997.

13. Mercer RR and JD Crapo. Normal anatomy and defense mechanisms of the lung, Chapter 1 (23-45) In: Textbook of Pulmonary Diseases, 6th ed, GL Baum, JD Crapo, BB Celli and JB Karlinsky ed. Lippincot-Raven Publishers, Philadelphia, PA., pp 23-46,1998.

14. Mercer RR. Respiratory Uptake, Chapter 5 In: Exposure to contaminants in drinking water. Stephen S. Olin ed. CRC Press, Inc., Boca Raton, FL., pp 124-133,1999.

15. Mercer RR and JD Crapo. Cellular Responses of the Lungs to Hyperoxia. Chapter 18 In. Oxygen/Nitrogen Radicals Lung Biology in Health and Disease Vol 187: V. Vallyathan, X. Shi and V. Castranova Eds., Marcel Dekker, Inc, pp 445-474, New York, NY., 2004.

16. Castranova V and RR Mercer. Responses to Pulmonary Exposure to Carbon Nanotubes. Chapter 8 in The Toxicology of Carbon Nanotubes Donaldson, Duffin, Bonner and Poland Eds. Cambridge University Press, pp 1-22, New York, NY. , 2011.

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B. A. Baker, R. R. Mercer, K. B. Geronilla, G. R. Miller, S. E. Alway, FACSM, M.L. Kashon, and R. G. Cutlip, "Effects of Chronic Stretch-Shortening Cycle Exposure on Adaptation and Stereological Indices of Muscle Degeneration and Inflammation in Young and Old Rats", American College of Sports Medicine, 2005.

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Mercer RR, AF Hubbs, JF Scabilloni, L Wang, V Castranova and D Porter. Distribution and persistence of pleural penetrations by multi-walled carbon nanotubes. Am J Respir Crit Care Med 181:A3102, 2010.

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Mishra A, Rojanasakul Y, Castranova V, Mercer R and Wang L. Assessment of Fibrogenic Biomarkers Induced by Multi Wall Carbon Nanotubes. The Toxicologist 253:1183, 2011

Michael Michalkiewicz, DVM, PhD.

Curriculum Vitae

October, 99

PERSONAL DATA

Date of Birth: January 1, 1950
Place of Birth: Swietoslaw, Poland
Marital Status: Married, three children
Citizenship: USA

Address

Office: Department of Physiology, West Virginia University
Health Sciences P.O. Box 9229
Morgantown, WV 26506-9229
Phone 304 293-1515 FAX 304 293-3850
E-Mail: mmichalkiewicz@hsc.wvu.edu
ttp://www.hsc.wvu.edu/neurosci/faculty/michalkiewicz.html

Home: 107 Peninsula Blvd
Morgantown, WV 26505
Phone (304) 292-1919

EDUCATION

1975	D.V.M.,	Veterinary Medicine Philosophy of Science	University of Wroclaw, Poland
1981	Ph.D.	Physiology	University of Warsaw, Poland
1984-86, Postdoctoral,		Neuroendocrinology	Gunma University, Japan

ACADEMIC HONORS and AWARDS

Outstanding Scholar Award, University of Wroclaw; 1971, 1972, 1973.
Copernicus Award, University of Wroclaw; 1972.

PROFESSIONAL EXPERIENCE and POSITIONS

06/1975 - 09/1976	Assistant Professor	National Institute of Veterinary Medicine, Department of Animal Reproduction: Reproductive endocrinology.
10 /1976 - 09/1984	Assistant Professor	University of Warsaw, School of Agriculture, Institute of Animal Science: Reproductive endocrinology, sex steroids, growth factors, embryo transplantation.
01-04/1984	Visiting Scientist	University of Wisconsin, Madison, Department of Animal Science, Dr.E.Hauser: Reproductive endocrinology.
10/1984 - 06/1986	Visiting Scientist	Gunma University, School of Medicine, Institute of Endocrinology, Japan; Dr. Mitsuo Suzuki: Hypothalamic control of prolactin & TSH secretions.
07/1986 - 06/1989	Visiting Scientist	West Virginia University, School of Medicine, Department of Physiology, Dr. George A. Hedge: Neuropeptide control of thyroid and pituitary function.
09 - 12/1989	Visiting Scientist	Free University of Brussels, School of Medicine, Institute of Interdisciplinary Research. Drs. J. Dumont and G. Vassart: Molecular biology techniques for endocrine research.

07/1989 - 03/1991 Research Assistant Professor, West Virginia University, School of Medicine, Department of Physiology

04/1991 - present Research Associate Professor, West Virginia University, Department of Physiology. Neuropeptide control of endocrine and cardiovascular functions. Neuropeptide Y and VIP in autonomic functions regulations.
Manipulations at the genomic level in whole animal to study the role of neuropeptides in physiology and diseases.
Development of neuropeptide Y transgenic rat.

TEACHING EXPERIENCE

1979-1984:	Reproductive Physiology,
1981-1984:	Endocrinology: Graduate Students
1986-Present:	Endocrine and Reproductive section of Physiology 141 (Paramedical): 200 students
1986-Present	Endocrine and Reproductive section of Physiology 241 (Nursing): 200 students.

Graduate and Undergraduate Students

Served On Doctoral Committees For:

Maley Day, M.D., Ph.D.: Physiological and pharmacological studies of the neural and peptidergic regulation of thyroid blood flow; Department of Physiology, 1993.

Mark Urban, Ph.D.: Effectc of neurotensin in the rostral ventromedial medulla on nociceptive modulation, Department of Pharmacology & Toxicology, 1993.

Rhonda Gabr, M.D., Ph.D.: Central regulation of corticotropin releasing factor release in the median eminence of rat brain: an in vivo microdialysis study, Department of Pharmacology & Toxicology, 1993.

Michael Crafty, M.D., Ph.D.:The regulation of corticotropin releasing factor release from the amygdala, Department of Pharm cology & Toxicology, 1994.

Jeff Smith, Ph.D.: The pain modulatory actions of neurotensin, Department of Pharmacology & Toxicology, 1998.

Bryan Sauls, MSc: Hypoxia is a potential factor for nitric oxide release in the rat intestine. Physiology, 1998.

Xin Zhou, Ph.D. Physiology, 1998.

Stew Hardy, Ph.D. Physiology, 1999

Ad hoc reviewer for:

Endocrinology
American Journal of Physiology
Peptides
Regulatory Peptides
Neuropeptides

AREAS of SPECIAL TRAINING and EXPERISE

Neuroendocrine control of metabolism and circulation.

MAJOR SCIENTIFIC INTERESTS and RESEARCH AREAS

Whole-animal approach to identify the genes involved in cardiovascular and metabolic regulations.

Role of neuropeptides as signal carriers in cardiovascular and metabolic regulations.

Transgenic animal production for studying function of new genes: development of neuropeptide Y transgenic rat.

Cardiovascular and metabolic functions in NPY-transgenic rats.

Hypothalamic-pituitary-thyroid axis.

Physiological genomics.

RESEARCH TECHNIQUES: Experimentation from a single gene to the whole animal level.

DNA/RNA/PEPTIDE ANALYSIS: - Southern Blot, PCR, Sequencing, recombinant DNA, DNA transfection, mRNA, RT-PCR, HPLC, radioimmunoassays and enzymatic Immunoassays (hormones, catecholamines, peptides), immunocytochemistry, antibody production, cell and embryo culture,

WHOLE ANIMAL: Gene manipulation in vivo: transgenic rat production; Blood pressure and blood flow measurements (tail cuff, chronic vascular catheters, laser Doppler, microspheres technique); Cardiac output, Chronic blood sampling and drug delivery; Embryo transfer; Brain streotaxic surgery; Nerve manipulations.

RESEARCH GRANT SUPPORT

- Transgenic rat to study vascular role of neuropeptide Y; NIH RO1; PI, $715,794 (direct); 12/98 - 12/2003;
- Mechanism of the sexual dimorphism of blood pressure in neuropeptide Y transgenic rats. AHA-Ohio Valley Affiliate, PI, $70,000; 6/l/1999 - 5/31/2001; pending.
- Susceptibility to seizures in transgenic rats over-expressing neuropeptide Y; NATO Collaborative Research Grant Co PI with Dr. A. Vezzani, Mario Negri Institute for Pharmacological Research, Milano, Italy; $5,600, 07/03/98 - 06/30/00.
- Development of transgenic rats to allow identification of GnRH neurons; Biomedical Research Grant (WVU Medical Corp); Co PI with Dr. R. Goodman, $10,000, 02/01/98 - 01/31/99.
- Behavioral role of central NPY over-expression; Karolinska Institute, Addiction Center, Co PI with Dr. Markus Heilig, $18,000, 9/25/98 - 10/01/99.
- Development of transgenic rats over-expressing the apoptosis genes p35 and crmA under control of the neuron-specific enolase promoter. Co Inv with Dr S. McKinnon. The Johns Hopkins University, $5,600, 9/25/98 - 01/23/99.
- Generation and Characterization of transgenic mice expressing green fluorescent protein in GABA-producing inhibitory neurons. Co Inv with Aric Agmon, Anatomy, WVU, RDG 02/01/99 - 01/01/00.
- Study of the relationship between iodine uptake and glucose metabolism in the thyroid gland using positron emission tomography. Co Inv with R. R. Raylman, Radiology, WVU RDG 02/01/99 - 01/01/00.

- Howard Hughes Medical Institute Biomedical Research Support for Medical Schools.Transgenic Rodent Facility, $372,000; 07/1999 - 06/2003, Pending.

Completed

- Mechanism of the hypertension in neuropeptide Y transgenic rats; AHA-Nat'l, PI, 12/1/1998, approved not funded.
- Cardiovascular functions in neuropeptide Y transgenic rats; AHA-W Affiliate; PI: $50,000; 07/96 - 06/98.
- Body weight and food intake in neuropeptide Y transgenic rats; WVU Biomedical Research Grant; PI:$ 8,000, 02/1997 - 07/1998.
- Characterization of neuropeptide Y function using transgenic rats. WVU Team Development Grant; Beatrice P. Madera Medical Research Grant; P.I.; $54,000; 07/95 - 09/96.
- Development of the technology for transgenic rats production; P.I.; Biomedical Research Grant (WVU Medical Corp); PI, $ 8,000; 02/94 - 02/95.
- Endocrine regulation of thyroid blood flow; NIH RO1, CoPI, 1990. Approved not funded
- Neuropeptide control of thyroid blood flow; NSF, DCB8904470, CoPI $294,336; 09/1989 - 09/1993.
- Hypothalamic regulation of vasoactive intestinal peptide and neuropeptide Y expression in the anterior pituitary gland; P.I.; Biomedical Research Grant, WVU Medical Corp; PI: $ 8,000, 02/1993 - 01/1994.
- Vasoactive intestinal peptide in the anterior pituitary: regulation of its biosynthesis and role in the gland function, P.I, Biomedical Research Grant, WVU Medical Corp; $6,833; 05/1990 - 10/1991.
- Plasma somatomedin activity in calves: its correlation with growth rate and maturation; P.I.; Ministry of Higher Education (Poland); $125,000; 10/1976 - 09/1979.
- Effects of Thiabendazole (MSD) on milk production in dairy cows; P.I.; Merck Sharp and Dohme Company (Zurich); $35,000; 6/1978 - 9/1981.
- Hormonal stimulation of ovulation and estrus synchronization in the postpartum period in dairy cows; Co-I.; French Institute of Agriculture (INRA); $85,000; 01/1981 - 12/1983.
- Application of milk progesterone test for the early pregnancy diagnosis in dairy herds; Co.I.; United Nations' Food and Agriculture Organization; $25,000; 09/1982 - 10/1984.
- Application of the milk progesterone test for the reproductive performance monitoring in the dairy cow; P.I.; Polish Academy of Sciences; $200,000; 01/ 1980 - 12/1983.
- Environmental and endocrine factors affecting estrus intensity manifestation in the dairy cow; Polish Institute of Animal Science; P.I.; $80,000; 07/1982 - 06/1984.
- Sabbatical leave: University of Wisconsin, Madison, Department of Animal Science-, Visiting Scientist; United Nations' Food and Agriculture Organization; $5,000; 01 - 04/1984.

- Japanese Ministry of Science Research Fellowship; Gunma University, Institute of Endocrinology; Visiting Scientist; $40,000; 10/1984 - 06/1986.

- Perkins Award, The American Physiological Society; $3,000; 09/1986.

- Free University of Brussels Research Fellowship; Institute of Interdisciplinary Research, School of Medicine: Drs J. Dumont, G. Vassart; Visiting Scientist: Molecular biology techniques in endocrine research, $5,000; 09 - 12/1989.

- West Virginia University Faculty Development Grant; $1,180; 07/1989.

INVITED PRESENTATION (Last 10 years)

Session Chair: Neuropeptide Y in physiology and disease. Winter Neuropeptide Conference 2000, Breckenridge, CO. 01/2000.

Invited speaker: Neuropeptides at the Millenium, Elsevier Science Symposium, 10/21/99, Miami, Fla. "Hypertension and an enhanced energy accumulation in neuropeptide Y transgenic rats".

WVU, Physiology, 04/99, " Physiological Genomics - an emerging discipline".

Invited Speaker: 5th Intern'l Neuropeptide Y Conference Grand Cayman, 04/99. "Enhanced cardiovascular responses in transgenic rats overexpressing neuropeptide Y".

Mario Negri Institute for Pharmacological Research, Milano, Italy. 9/98. "Cardiovascular and endocrine functions in neuropetide Y transgenic rats".

West Virginia University Research Day Plenary Session. 2/1998, Neuropetide Y transgenic rats: a new model of hypertension?.

CDC, NIOSH, Morgantown: 11/97 "Transgenic models to study the functional and pathological role of neuropetides"

West Virginia University, Department of Physiology; 11/1997, "Sexual dimorphism in cardiovascular and metabolic responses to neuropeptide Y overexpression".

Invited speaker: Cardiovascular and metabolic functions in neuropeptide Y transgenic rats. 4th Intern'l NPY Conference, London, UK, 1997.

Astra Hassle, Cardiovascular Pharmacology, Molndal, Sweden, 10/97, "Cardiovascular and endocrine functions in neuropetide Y transgenic rats".

Merck Research Laboratories, Genetics and Molecular Biology, Rahway, NJ, 08/97, "Cardiovascular and endocrine functions in neuropetide Y transgenic rats".

Lilly Research Laboratories, Central Nervous System and Endocrine Research. Indianapolis, IN, 05/97: "Carvascular and endocrine functions in neuropetide Y transgenic rats".

Georgetown University, Department of Physiology, Washington DC, 11/96: "Development of the neuropeptide

Y transgenic rat: an animal model for studying human hypertension, eating disorders, depression and more..." American Red Cross-Jerome H. Holland Laboratory, Rockville, MD, 06/95. "Development of the NPY-transgenic rats"

NIH, Institute of Neurological Disorders and Stroke, Bethesda, 03/1994. "Neuropeptides in the anterior pituitary: regulation and function"

NIH, Institute of Child Health & Human Development; Bethesda, 06/1993. "The anterior pituitary as a site of neuropeptide production".

Checho-Slovak Congress of Neurochemistry High Tatra, 05/1993. Plenary lecture: "Hypothalamic regulation of vasoactive intestine peptide and neuropeptide Y synthesis in the anterior pituitary gland".

The Decade of the Brain: Neuroscience in Central Europe Workshop, Budapest 04/1993; "Neuropeptides in the Anterior Pituitary".

Institute of Experimental Endocrinology, Slovak Academy of Sciences, Bratislava 05/1993. The role of neuropeptides in regulation of thyroid and anterior pituitary ftinctions".

West Virginia University, Department of Anatomy; 01/1993. "Hypothalamic regulation of vasoactive intestine peptide and neuropeptide Y synthesis in the anterior pituitary gland".

The American Physiological Society, San Antonio, TX; 09/1991. Invited speaker: Conference on Interactions of the Endocrine and Cardiovascular Systems: "Thyroidal Vascular Responsiveness to Iodine".

West Virginia University, Department of Physiology; 09/1991. " Perestroika in the Anterior Pituitary: The Role of Intrinsic Neuropeptides".

The Population Council, New York; 08/1991. "Role of neuropeptides in the regulation of anterior pituitary and thyroid functions".

West Virginia University, Department of Physiology; 09/1990. "Local control of thyroid micro vascular function: the role in thyroid iodine supply".

University of Modena, Italy, Institute of Endocrinology, Italy; 12/1989. "Mechanisms regulating thyroid blood flow and its physiological importance".

Free University of Brussels, Belgium, Institute of Interdisciplinary Research; 10/1989. "Mechanisms regulating thyroid blood flow"

Catholic University of Brussels, Belgium, Department of Histology; 11/1989. "Effects of iodine on thyroid vasculature".

Case Western Reserve University, Center for Neuroscience; 07/1989. "Role of VIP in regulation of anterior pituitary and thyroid functions."

West Virginia University, Department of Physiology; 11/1988. "Involvement of vasoactive intestinal peptide in thyroid function."

PROFESSIONAL AFFILIATIONS

Endocrine Society,
Society for Neuroscience,
American Association for the Advancement of Science.
American Physiological Society (pending).

PUBLICATIONS

Inivited Chapters

1. M. Michalkiewicz. Method of developing transgenic NPY rats. Methods in Molecular Biology, in press

2. Bartke A. and M. Michalkiewicz M. Overexpression and targeted disruption of genes involved in the control of growth, food intake, and obesity. Contemporary Endocrinology, M. Conn, Editor. (Submitted),

3. Huffman, L.J., M. Michalkiewicz, M. Dey, and G.A. Hedge. Thyroid circulation. In: The autonomic nervous system, Volume 8: Nervous control of blood vessels, Chapter 15: 541 -563. Eds: T. Bennet and S. Gardiner, Harwood Academic Publishers, Reading 1996.

Articles

1. Michalkiewicz, M, D. Kreulen, T. Michalkiewicz, S. Lee, R. Keith. Increased arterial blood pressure and body weight in neuropeptide Y transgenic rats. Submitted.

2. Michalkiewicz M, Malay Dey, Linda J. Huffman, and George A. Hedge. The neuropeptides, VIP and NPY, that are present in the thyroid nerves are not released into the thyroid vein. Thyroid 8:1073-1079, 1998.

3. Michalkiewicz, M. L. Huffinan, M. Dey, and G. A. Hedge. Immunization against vasoactive intestinal peptide does not affect thyroid hormone secretion or thyroid blood flow. American Journal of Physiology , Endocrinology and Metabolism 266 (29): E905-E913, 1994.

4. Michalkiewicz, M. and M. Suzuki. Adenohypophyseal vasoactive intestinal peptide and neuropetide Y responses to hypothyroidism are abolished after anterolateral deafferentation of the hypothalamus. Neuroendocrinology 59:85-91, 1994.

5. Dey, M., M. Michalkiewicz, L.J. Huffman and G.A. Hedge. Sympathetic thyroidal vasoconstriction is not blocked by a neuropeptide Y antagonist or antiserum. Peptides 14:1179-1186, 1993.

6. Dey, M., M. Michalkiewicz, L.J. Huffman and G.A. Hedge. Neuropeptide Y is not a primary mediator of the acute thyroid blood flow response to sympathetic nerve stimulation. American Journal of Physiology, Endocrinology and Metabolism 265(28):E24-E30, 1993.

7. Michalkiewicz, M., L.J. Huffman, M. Dey and G.A. Hedge. Endogenous neuropeptide Y regulates thyroid blood flow. American Journal of Physiology, Endocrinology and Metabolism 264(27):E699-E705, 1993.

8. Dey, M., M. Michalkiewicz, L.J. Huffman and G.A. Hedge. Thyroidal vascular responsiveness to parasympathetic stimulation is increased in hyperthyroidism. Am J of Physiology, Endocrinology and Metabolism 264(27):E398-E402, 1993.

9. Pietrzyk, Z., M. Michalkiewicz, and G.A. Hedge. Vasoactive intestinal peptide enhances thyroidal iodide uptake during dietary iodine deficiency. Endocrine Research 18:213228, 1992.

10. Huffman, L.J., M. Michalkiewicz, K.E. Vrana, and G.A. Hedge. Expression of preproNPY and precursor VIP mRNAs in rats under hypo- or hyperthyroid conditions. Molecular and Cellular Neurosciences 3:418-424, 1992.

11. Michalkiewicz, M., L.J. Huffman, and G.A. Hedge. Lack of effect of vasoactive intestinal peptide antagonists on hormone secretion and blood flow in the rat thyroid. Peptides 12:1181-1186, 1991.

12. Connors, J.M., L.J. Huffman, M. Michalkiewicz, G.A. Hedge. Thyroid vascular conductance: differential effects of elevated plasma TSH induced by treatment with thioamides or TSH-releasing hormone. Endocrinology 129: 117 - 125, 1991.

13. Hedge, G.A., J.M. Connors, L.J. Huffman, and M. Michalkiewicz. Propylthiouracil alters the sensitivity of the thyroid gland to TSH-induced increases in blood flow. In: Progress in Thyroid Research, Eds: A. Gordon, J. Gross, and G. Hennemann, A.A. Balkema, Rotterdam, p. 1217 - 130, 1991.

14. Dey, R.D., J.B. Altemus, M. Michalkiewicz. Distribution of vasoactive intestinal peptide (VIP) and substance P-containing nerves originating from neurons of airway ganglia in cat bronchi. The Journal of Comparative Neurology 304: 330-340, 1991.

15. Michalkiewicz, M., J.M. Connors, Z. Pietrzyk, and G.A. Hedge. Compensatory changes in thyroid blood flow are only partially mediated by thyrotropin. American Journal of Physiology, Endocrinology and Metabolism 260(23):E608 - E612, 1991.

16. Huffman, L.J., M. Michalkiewicz, J.M. Connors, Z. Pietrzyk and G.A. Hedge. Muscarinic Modulation of the Vasodilatory Effects of Vasoactive Intestinal Peptide at the Rat Thyroid Gland. Neuroendocrinology 53:69-74, 1991.

17. Huffman, L.J., M. Michalkiewicz, Z. Pietrzyk, and G.A. Hedge. Helodermin, but not cholecystokinin, somatostatin, or thyrotropin releasing hormone, acutely increases thyroid blood flow in the rat. Regulatory Peptides 31:101-114, 1990.

18. Michalkiewicz, M., J.M. Connors, L.J. Huffinan, Z. Pietrzyk and G.A. Hedge. Is Thyroid Blood Flow a Limiting Factor for Thyroid Iodine Supply? In: The Thyroid Gland., Environment, and Autoimmunity, Eds: H. Drexhage, J.de Vijlder and W. Wiersinga, Excerpta Medica, Amsterdam, p. 1219 -1321, 1990.

19. Michalkiewicz, M., L.J. Huffman, J.M. Connors, and G.A. Hedge. Alterations in Thyroid Blood Flow Induced by Varying Levels of Iodine Intake in the Rat. Endocrinology 125:5460, 1989.

20. Michalkiewicz, M., J.M. Connors, L.J. Huffman, and G.A. Hedge. Increases in Thyroid Gland Blood Flow After Hemithyroidectomy in the Rat. Endocrinology 124:1118-1123, 1989.

21. Hedge, G.A., M. Michalkiewicz, J.M. Connors, and L.J. Huffman. The Role of TSH in Mediating Compensatory Changes in the Remaining Thyroid Lobe After Hemithyroidectomy. In: The Thyroid 1988, Eds: S. Nagataki and K. Torizuka, Excerpta Medica, Amsterdam, p. 555-558, 1988.

22. Michalkiewicz, M., M. Suzuki, M. Kato. Evidence for a synergistic effect of somatostatin on vasoactive intestinal polypeptide-induced prolactin release in the rat: comparison with its effect on thyrotropin (TSH)-releasing hormone-stimulated TSH release. Endocrinology 121:371-377, 1987.

23. Michalkiewicz, M., B. Reklewska. Plasma somatomedin activity in relation to growth rate and puberty in dairy heifers. Animal Science Papers and Reports 4:63-71, 1988.

24. Morstin, J., M. Michalkiewicz, J. Rey, J. Pelot, Y. deFontaubert, M. Terqui. Postpartum ovarian activity in dairy cows held in big farms. Annals of Warsaw Agricultural University Animal Science 23:49-53, 1988.

25. Reklewska, B., M. Michalkiewicz. Postpartum infertility problems in the dairy cows as diagnosed by the milk progesterone test: comparison of three types of the reproduction control programs. Annals of Warsaw Agricultural University Animal Sc 18:53-59, 1985.

26. Michalkiewicz, M., B. Reklewska. Estrus detection accuracy in the dairy cow as estimated on the basis of the milk progesterone test. Zes.Probl.Post.N.Roln. 300:381-385, 1985.

27. Morstin, J., M. Michalkiewicz. Most frequent infertility problems in the high yielding dairy cows. Hod. Byd. (Warsaw) 3:17-23, 1984.

28. Michalkiewicz, M., P. Brzozowski. Variation in the intensity of estrus manifestation and its influence on the heat detection accuracy in the cow. Prg. Hod. 9:27-32, 1984.

Abstracts and Conference Presentations

1. M. Michalkiewicz. Increased Blood Pressure Response To Adrenergic Stimulation In Transgenic Rats Overexpressing Neuropeptide Y. 29th Annual Meet. Soc. for Neuroscience, Miami Beach, Fla, 1999. Soc. Neurosci. Abstr., 25 (P1):960.

2. A. Thorsell, C. Moller, R. Rimondini-Giorgini, M. Michalkiewicz, and M. Heilig. Reversal of fear-induced behavioral suppression in neuropeptide Y transgenic rats. 29th Annual Meet. Soc. for Neuroscience, Miami Beach, Fla, 1999. Soc. Neurosci. Abstr., 25 (P1):63.

3. T. Michalkiewicz, R. Keith, M. Michalkiewicz. Energy expenditure is reduced in neuropeptide Y transgenic rats. 5th Intern'l Brain Research Organization, World Congress of Neuroscience, Jerusalem, Israel, p 157, 1999.

4. M. Michalkiewicz, R. Keith, D. Kreulen, S. Lee, and T. Michalkiewicz. Hypertension and hyperphagia in neuropeptide Y transgenic rats. Winter Neuropeptide Conference. Breckenridge, Colorado, 1999.

5. M. Michalkiewicz. Enhanced cardiovascular responses in transgenic rats overexpressing neuropeptide Y. 5th Intern'l Neuropeptide Y Conference, Grand Cayman, April 1999.

6. T. Michalkiewicz, R. Keith, M. Michalkiewicz. Locomotor activity is reduced in neuropeptide Y transgenic rats. 28th Annual Meet. Soc. for Neuroscience, Los Angeles, CA, 1998. Soc. Neurosci. Abstr., 24 (P2):2046.

7. Michalkiewicz, T, S. Lee, K. Knestaut, D. L. Kreulen and M. Michalkiewicz. Cardiovascular and metabolic functions in neuropeptide Y transgenic rats. 4th Intern'l NPY Conference, London, UK, 1997. Regulatory Peptides 71:215, 1997.

8. Michalkiewicz, T, S. Lee, K. Knestaut, D. L. Kreulen and M. Michalkiewicz. Metabolic effects in neuropeptide Y transgenic rats. 27th Annual Meet. Soc. for Neuroscience, 23:1768, New Orleans, LA, 1997.

9. Michalkiewicz T., K. Knestaut, D.L Kreulen, and M. Michalkiewicz. Body weight in neuropeptide Y transgenic rats: effect of age and gender. 79th Annual Meet. Endocrine Soc.: 203, 1997.

10. Michalkiewicz T., Wilson M, Kreulen D., Michalkiewicz M. Increased blood pressure in neuropeptide Y transgenic rats. FASEB J, 11:50, 1997.

11. Michalkiewicz, M. Method of developing neuropeptide Y transgenic rats. American Physiological Society Conference: New Discoveries within the Pancreatic Polypeptide Family: Molecules to Medicine, New Beach, CA, November, 1995.

12. Michalkiewicz, M., M. Dey, and G.A. Hedge. The neuropeptides, VIP and NPY, that are present in the intrathyroid nerves are not released by electrical stimulation of the major thyroid nerves. 24th Annl Meet. Soc. for Neursc, 20:85 1, Miami Fl, 1994.

13. Michalkiewicz, M. Differential regulation of vasoactive intestinal peptide and neuropeptide Y in the anterior pituitary gland. 76th Annual Meet. Endocrine Soc.: 536, Anaheim, CA, 1994.

14. Michalkiewicz, M. Hypothalamic TRH stimulates neuropeptide Y synthesis in the anterior pituitary. 23th Annual Meet. Soc. for Neuroscience, 19:1067, Washington DC, 1993.

15. Michalkiewicz, M., L.J. Huffman, M. Dey and G.A. Hedge. Passive immunization against vasoactive intestinal peptide does not alter the thyroid blood flow response to iodine restriction. Int'l Union of Physiological Societes: 104, Glasgow, Scotland, 1993.

16. Dey, M., M. Michalkiewicz, and G.A. Hedge. Passive immunization against NPY inhibits NPY-induced thyroidal vasoconstriction, but does not prevent decreased thyroid blood flow after sympathetic nerve stimulation. Neuropeptide Y Conference: Cambridge, UK, 1993.

17. Dey, M., M. Michalkiewicz, and G.A. Hedge. A novel inositol phosphate and neuropeptide Y antiserum which inhibit NPY-induced thyroid vasoconstriction fail to block sympathetic nerve stimulation-induced acute thyroidal vasoconstriction. Winter Neuropeptide Conference, 1993.

18. Dey, M., M. Michalkiewicz, L.J. Huffman and G.A. Hedge. Neuropeptide Y, which decreases thyroid blood flow, is not a primary mediator of the acute thyroid blood flow response to sympathetic nerve stimulation. 22nd Annual Meet. Soc. for Neuroscience, 18:820, Anaheim, 1992.

19. Michalkiewicz, M., L.J. Huffman, M. Dey and G.A. Hedge. Vascular effects of systemic immunization against vasoactive intestinal peptide and neuropeptide Y. 22nd Annual Meet. Soc. for Neuroscience, 18:988, Anaheim, 1992.

20. Michalkiewicz, M. and M. Suzuki. Hypothalamic deafferentation abolishes pituitary neuropeptide Y response to hypothyroidism. 9th Int'l Congress of Endocrinology : 559, Nice, France 1992.

21. Michalkiewicz, M. and M. Suzuki. Anterior pituitary vasoactive intestinal peptide response to hypothroidism is abolished after anterolateral hypothalamic deafferentation. 74th Annual Meet. Endocrine Soc.: 246, San Antonio, 1992.

22. Dey, M., M. Michalkiewicz, L.J. Huffman and G.A. Hedge. Thyroidal vascular responsiveness to parasym pathetic stimulation is increased in hyperthyroidism. The American Physiological Society Conference: Interactions of the endocrine and cardiovascular systems. : 23 1, San Antonio, 1991.

23. Michalkiewicz, M. Thyroidal vascular responsiveness to iodine. The American Physiological Society Conference: Interactions of the endocrine and cardiovascular systems. San Antonio, 1991.

24. Michalkiewicz, M., L.J. Huffman, M. Dey and G.A. Hedge. Evidence that endogenous neuropeptide Y is involved in the physiological regulation of thyroid blood flow. 65th Annual Meet. American Thyroid Assoc. Thyroid I (Supp 1): S-87, Boston, 1991.

25. Huffman, L.J., M. Michalkiewicz, K.E. Vrana and G.A. Hedge. Effects of hypo- or hyperthyroid conditions on prepro-NPY mRNA and precursor-VIP/PHI mRNA levels in the superior cervical ganglia and local thyroid ganglia of rats. 21 st Annual Meet. Soc. for Neuroscience 17:433, New Orleans, 1991.

26. Michalkiewicz, M. Effects of thyroid hormone status on VIP concentrations in the anterior pituitary transplanted under the renal capsule: comparison with plasma levels of TSH. 73rd Annual Meet. Endocrine Soc.: 413, Washington DC, 1991.

27. Hedge, G., J. Connors, L. Huffman and M. Michalkiewicz. Propylthiouracil alters the sensitivity of the thyroid gland to TSH-induced increases in blood flow. 10th International Thyroid Congress, The Hague, 1991.

28. Michalkiewicz, M., L.J. Huffman and G.A. Hedge. Effects of thyroid denervation on thyroid blood flow and VIP content. 20th Annual Meet. Soc. for Neuroscience 16:188, St. Louis, 1990.

29. Hedge, G.A., Z. Pietrzyk, M. Michalkiewicz, L.J. Huffman and M. Dey. Vasoactive intestinal peptide enhances thyroidal iodide uptake during dietary iodine deficiency. Int'l Symposium on Iodine and The Thyroid: 45, Athens, 1990.

30. Huffinan, L., M. Michalkiewicz, Z. Pietrzyk and G.A. Hedge. Helodermin, but not SRIF, CCK-8, or TRH, Acutely Increases Thyroid Blood Flow in the Rat. FASEB J. 4:A303, Las Vegas, 1990.

31. Michalkiewicz, M., J.M. Connors, L.J. Huffman, Z. Pietrzyk, and G.A. Hedge. Is Thyroid Blood Flow a Limiting Factor for Thyroid Iodine Supply? Intl. Symp. Thyroid Gland, Environment, and Autoimmunity: 10, Amsterdam, 1989.

32. Michalkiewicz, M., J. Connors, Z. Pietrzyk, and G. Hedge. Acute Iodide Administration Causes Biphasic Changes in Thyroid Blood Flow in Iodine Deficient Rats. 64th Annual Meet. Amer. Thyroid Assoc. Endocrinol 122: T-50, San Francisco, 1989.

33. Hedge, G., J. Connors, L. Huffman, and M. Michalkiewicz. PTU- but not TRH-Induced TSH Raises Thyroid Blood Flow. Proc. Int'l. Union of Physiological Sci.: 286, Helsinki, 1989.

34. Michalkiewicz, M., J.M. Connors, L.J. Huffman, and G.A. Hedge. Anterior Pituitary Vasoactive Intestinal Peptide Immunoreactivity (VIP-IR) is Increased in Hypothyroid Rats. 71 st Annual Meet. Endocrine Soc.: 65, Seattle, 1989.

35. Huffman, L.J., M. Michalkiewicz, J.M. Connors, Z. Pietrzyk, and G.A. Hedge. Functional Significance of Cholinergic and VIP-ergic Effects at the Thyroid Gland. 19th Annual Meet. Soc. for Neuroscience: 973, Phoenix, 1989.

36. Connors, J.M., L.J. Huffman, M. Michalkiewicz, and G.A. Hedge. Thyroid Blood Flow: Differential Effects of Elevated Plasma TSH Produced by PTU or TRH Treatment. 63rd Annual Meet. Amer. Thyroid Assoc. Endocrinology 121: T-86, Montreal, 1988.

37. Michalkiewicz, M., L.J. Huffman, J.M. Connors, and G.A. Hedge. High Iodine Diet Decreases Thyroid Blood Flow. 63rd Annual Meet. Amer. Thyroid Assoc. Endocrinology 121: T-55, Montreal, 1988.

38. Hedge, G.A., M. Michalkiewicz, J.M. Connors, and L.J. Huffman. The Role of TSH in Mediating Compensatory Changes in the Remaining Thyroid Lobe after Hemithyroidectomy. Int'l Thyroid Symposium, : 103, Tokyo, 1988.

39. Michalkiewicz, M., L. J. Huffman, J.M. Connors, and G.A. Hedge. Early Adaptation to Iodine Deficiency Includes a TSH-Independent Increase in Thyroid Blood Flow. 8th Int'l Congress of Endocrinology: 298, Kyoto, 1988.

40. Michalkiewicz, M., L.J. Huffman, J.M. Connors and G.A. Hedge. Measurement of Thyroidal VIP Content by RIA Under Hyper- and Hypothyroid Conditions. 17th Annual MeeL Soc. for Neuroscience 13:1311, New Orleans, 1987.

41. Michalkiewicz, M., J.M. Connors, L.J. Huffman and G.A. Hedge. Temporal Patterns of Compensation Following Subtotal Thyroidectomy. 62nd Annual Meet. Amer. Thyroid Assoc. Endocrinology 120: T-5 1, Washington DC, 1987.

42. Michalkiewicz, M., L.J. Huffman, and G. A. Hedge. Effects of Vasoactive Intestinal Peptide Antagonists or Antiserum on Thyroid Blood Flow and Plasma T3/T4 Levels in the Rat. Fed. Proc. 46: 842, Washington, 1987.

43. Michalkiewicz, M., M. Suzuki, M. Kato. The effects of somatostatin on TRH-stimulated TSH and VIP-stimulated prolactin secretion in rat. Japanese Soc. Neuroscience. Tokyo, 1986.

44. Morstin, J., K. Balcerzak, P. Brzozowski, J. Korwin-Kossakowski, M. Michalkiewicz. Estrus manifestation in a large dairy herd: variations in symptoms and intensity. Polish Soc. Veterinary Sc.: 66-67, Olsztyn, 1985.

45. Brzozowski, P., K. Balcerzak, J. Korwin-Kossakowski, M. Michalkiewicz, J. Morstin. Problems in estrus detection in a large herd of cows. Polish Soc. Veterinary Sc.: 13, Olsztyn, 1985.

46. Morstin, J., M. Michalkiewicz, A. Rudzinska. Histological and hormonal characteristics of ovarian cysts in dairy cows. 1 Oth Int'l. Cong. Anim. Reprod. : 463-465, Urbana, 1984.

47. Michalkiewicz, M., P. Brzozowski, J. Korwin-Kossakowski. Estrus intensity manifestation in relation to milk yield, postpartum period, age, and milk progesterone levels in dairy cows. 10th Int'l. Cong. Anim. Reprod. : 290-293, Urbana, 1984.

48. Reklewska, B., M. Michalkiewicz. Evaluation of the estrus detection accuracy in relation to the progesterone pregnancy testing in dairy herds with fertility problems. 34th Europ. Assoc. Anim. Prod., 2:436, Madrid, 1983.

49. Michalkiewicz, M., J. Korwin-Kossakowski, J. Wqjdan, J. Gajdek. Application of the milk progesterone test for diagnosis of ovarian cysts in dairy cows. Polish Soc. Veterinary Sc.: 835, Lublin, 1983.

50. Michalkiewicz, M., J. Rey, J. Morstin. Ovarian activity after autum-winter calving in dairy cows estimated on the basis of the milk progesterone test. Polish Soc. Veterinary Sc.: 787, Lublin, 1983.

51. Michalkiewicz, M. Plasma hormonal profiles as a tool in prognosis of the genetical performance in the cattle. "Cow of the Future" - UN FAO Symposium, Warsaw, 1982.

52. Michalkiewicz, M., B. Reklewska. Types of errors in the heat detection in dairy cows as revealed by the milk progesterone test. Polish Soc. Anim. Sci. Szczecin, 1981.

53. Michalkiewicz, M., M. Bielecka, A. Ostrowska, P. Rucinski. Stimulatory effect of Thiabendazole MSD on the milk production in the dairy cow. Int'l. Cong. Parazytol. Warsaw, 1980.

54. Michalkiewicz, M., B. Reklewska. Plasma somatomedin activity is increased in the hypertrophic type of calf. Roussel-UCLAF Int'l. Symposium, Warsaw, 199-201, 1980.

55. Michalkiewicz, M., B. Reklewska. The relationship between sexual and skeletal development in the dairy heifer. Polish Soc. Anim. Sci. Warsaw, 1979.

CURRICULUM VITAE
Ronald James Millecchia
[10/24/2006]

PRESENT POSITION: Associate Professor, Department of Physiology
West Virginia University, PO Box 9229
Morgantown, West Virginia 26506

TELEPHONE: (304) 293-1518

PERSONAL DATA: BORN: October 17, 1941
Hackensack, New Jersey

MARRIED: Lyndell Louise Larsen (two children)

EDUCATIONAL BACKGROUND: M.I.T., Cambridge, Mass.; Physics Major, 1959-63
received S.B. degree in 1963

The Rockefeller University, New York, N.Y., 1963-1969
received Ph.D. in 1969

Hopkins Marine Station, Pacific Grove, CA
Invertebrate Zoology Course, Summer 1966.

SOCIETIES: American Physiological Society
American Society of Photobiologists
Biophysical Society
Sigma Xi
Society for Neuroscience

EXPERIENCE: Stazione Zoologica, Naples, Italy
Research Associate, Summer 1969

Department of Biology Reed College, Portland, OR
Alfred P. Sloan Post-doctoral Fellow, 1969-70
Sabbatical Leave, 1980-81

Dept. of Physiology, WVU
Assistant Professor 1970-74
Associate Professor 1974

FIELDS OF INTERESTS: Somatosensory physiology, sensory physiology, cellular physiology, artificial neural networks, and computer modeling & applications.

RESEARCH GRANTS AND CONTRACTS - AWARDED:

NSF: Synaptic transmission in the visual pathway of the barnacle.
1973-76 -- $37,000
1976-79 -- $55,000.

ERDA Contract: Effects of by-products of coal gasification on synaptic transmission.
1977-78 -- $13,750
1978-79 -- $ 5,250.

WVU Senate Research Grant: Photoreception in the barnacle.
1971-73 -- $ 3,650
1982-83 -- $ 5,000.

NIH, SBIR: Computer controlled electrophysiological intruments.
P. I.: Charles Scouten, Stoelting Co.
Consultants: Paul B. Brown
Ronald Millecchia
10/1/87-4/01/88 -- $50,000, Phase I

NIH: Correlation of crossed terminal fields of primary afferents and the somatotopy of dorsal horn cells.
P. I.: Paul B. Brown
Co-I.: Wil Gladfelter
Ronald Millecchia (20% effort)
Jim Culberson
9/1/87-8/31/89 -- $125,144

NIH: Morphology and somatopy in the dorsal horn.
P. I.: Paul B. Brown
Co-I.: Wil Gladfelter
Ronald Millecchia (20% effort)
Jim Culberson
7/1/89-6/30/93 -- $679,696

NASA, SBIR: Thin membrane sensors for hazardous agents.
P. I.: George Case, Resource Technologies Group
Consultant: Ronald Millecchia ($7,000 direct costs)
2/1/91-1/31/92 -- $500,000, Phase II

WVU Biomedical Research Support Grant: Somatotopic organization of cortical modulation of spinal transmission of cutaneous sensory input.
P. I.: Wil Gladfelter
Co-I.: Paul B. Brown
Ronald Millecchia
2/1/91-1/31/92 -- $ 7,770

RESEARCH GRANTS AND CONTRACTS - AWARDED (continued):

WVU Biomedical Research Support Grant:
P. I.: Stan Yakoda
Co-I.: Ronald Millecchia
1/1/95-12/31/95

NIH: Sprouting or strengthening in deafferant dorsal horn.
P. I.: Paul B. Brown
Co-I.: Wil Gladfelter
Ronald Millecchia (20% effort)
Jim Culberson
1/1/93-12/31/97 -- $468,308

WVU School of Medicine Team Development Grant: Neural Correlates of Tactile Spatial Discrimination.
Project Director: Paul B. Brown
Subprojects P.I.s
Psychophysics: J. Vernon Odom
Behavior: Irv Goodman
Neurophysiology: Paul Brown
Neuroanatomy: Jim Culberson
Modeling: Ronald Millecchia
1/1/97 - 12/31/98 -- $68,155

WVU Research Corporation : Tactile Discrimination in the Dorsal Horn.
P. I. : Paul B. Brown
Co-I. :
Ronald Millecchia
J. Vernon Odom
Irv Goodman
Jim Culberson
1/1/97 - 12/31/98 -- $45,000

NIH: Dorsal horn cell monosynaptic receptive fields.
P. I.: Paul B. Brown
Co-I.: Ronald Millecchia (25% effort)
Jim Culberson
3/1/95-2/28/99 -- $770,879

RESEARCH GRANTS AND CONTRACTS - AWARDED (continued):

NIH: Nerve regeneration and spatial discrimination.
Subcontract to Rick Koerber's NIH grant
P. I.: Paul B. Brown
Co-I.: Ronald Millecchia (5% effort)
Jim Culberson
12/17/99-11/30/04 -- $1,496,489

NIH: The role of inhibition in binaural processing;
P. I.: George A. Spirou
Co-I.: Ronald Millecchia (10% effort)
Paul B. Brown
Albert S. Berrebi
5/1/02-04/30/07 -- $1,700,320

RESEARCH GRANTS AND CONTRACTS - SUBMITTED:

CONSULTING:

STOELTING COMPANY - CHICAGO, IL - Design of microprocessor-based instrumentation for neurophysiological research. (1985-93)

NIH Grant to Kenneth Horch, U. of Utah - Use of artificial neural networks in limb prostheses. (1989-90)

NIH Grant to Paul Reier, U. of Florida - Fetal implants in adult cat spinal cords. (1989-91)

NEURAL ENGINE WORKS - Partner in company to develop artificial neural network chips and engineering support software. (1989-90)

NASA Contract to George Case, RTG - Testing thin membrane sensors for hazardous agents. (1991-92)

Currently active
TEACHING:

Advanced Physiology (1970-80) - graduate students
Biology Honors (1977-80) - undergraduate students
Cellular Physiology (1970-1971) - graduate students
Dental Physiology (1976-79, coordinator 1978-79) - dental and graduate students
Elementary Physiology (1994-) - nursing students (5-10 lectures)
Fundamental Neuroscience (2004-) – graduate student (2 hr lecture) (1-7 students)
Graduate Seminar (1974, 1986-2006) - graduate students (5 sessions/student, 3 students/year)
Human Function (2003-) - medical students (7 lectures)
Human Function (1998-) - medical students (12 small group sessions, 12 students / year)
Mechanisms of Body Function (1985, 2001-2002) - paramedical students
Medical Physiology (1973-80) - medical and graduate students
Neurobiology (1971-) - medical and graduate students (10 lectures)
Neurology Resident's Seminar (1985- 89)
Neurophysiology (1970-2000) - graduate students (10 lectures)
Physological Methods (1976-97, coordinator 1985-88) - graduate students (6 lectures/labs)
Graduate Physiology (1995) - graduate students (3 sessions)
Physiology/Pharmacology (2002) - graduate students (5 lectures, 3 small groups)(8-25 students)

DEPARTMENTAL COMMITTEES:

Computer Committee - Chairman (1981-), member (1977-)
Graduate Studies Committee- Chairman (1972-1975), member (1971-1975)
Promotion and Tenure Committee - Chairman (1976-1979, 1999-2006), member (1975-1979, 1999-)
Search Committee for Cardiovascular Physiologist (1977)
Assistant Chair (1999-)

SCHOOL OF MEDICINE COMMITTEES:

Admission and Advisory Committee for Medical Technology (1978-1980)
Basic Sciences Graduate Studies Committee (1974-1975)
Computer Steering Committee (1983)
Computer Task force Committee - Chairman (1985)
Curriculum Committee - (1986)
Ophthalmology Academic Review Committee - (1986)
Pharmacology & Toxicology Academic Review Committee - Chairman (1988)
Search Committee for Chairperson of Physiology and Biophysics Department (1976)
Surgery Academic Review Committee - (1994 - 1995)
Search Committee for Chairperson of Ophthalmology (1994-1995)

Currently active

UNIVERSITY COMMITTEE:

Biological Sciences Subcommittee - Academic Planning Committee (1982)
Physics Academic Review Committee - (1989)
WVNET Research Users Committee - (1990-96)
Ad Hoc committee on Parking Management (2001)
Ad Hoc Academic Integrity Committee – (2006) – Chair Hearing Panel

NATIONAL COMMITTEE:

America Veterinary Medical Association – Site Visit Evaluation Committee
Fairmont State College – Veterinary Technology Program (2001 -)

DOCTORAL STUDENT: R. Clark Lantz - PH.D. 1975

THESIS AND EXAMINATION COMMITTEES:

DOCTORAL:
Robert B. Zeidler - Physiology and Biophysics
David A. Taylor - Pharmacology
R. Clark Lantz - Physiology and Biophysics
Jerry Farley - Physiology and Biophysics
Jane E. Gray - Physiology and Biophysics
Shahid M. Salles - Physiology and Biophysics
James Heym - Physiology and Biophysics
Robert Yezierski - Physiology and Biophysics
Richard Koerber - Physiology and Biophysics
George Jones - Physiology and Biophysics
Allan Judd - Physiology and Biophysics
James Morgan - Physiology and Biophysics
Joyce Kille - Physiology
Joan Lynch - Marshall Univ. Physiology
Winchi Cheng - Physiology
Ramana Sonty - Physiology
Errol Gould - Pharmacology and Toxicology
Tracy L. Soltsz - Marshall Univ. Anatomy
Greg Cutlip - Mechanical Engineering
Chun Shia Chang - Physiology
Lantz Molnar - Pharmacology and Toxicology
Mike Stinely - Electrical and Computer Engineering
Jeff Lawson - Physiology
Kevin Rowlands – Physiology
Jenny Roberts – Physiology/Pharmacology
Jesse Thompson – Physiology/Pharmacology
Yucel Akgul – Physiology/Pharmacology
Tina Sager – Physiology/Pharmacology
Lori Kang – Physiology/Pharmacology

Currently active

MASTERS:
Richard Koerber - Physiology and Biophysics
David Kukulinski - Physiology and Biophysics
Donna Blake - Physiology and Biophysics
Greg Rahall - Electrical and Computer Engineering
David Sturm - Electrical and Computer Engineering
Dennis Yost - Electrial and Computer Engineering
Lei Wang - Physiology
Mike Stinely - Electrical and Computer Engineering

OTHER PROFESSIONAL EXPERIENCES:

INVITED SPEAKER:

NIH - Section on Neuronal Interaction, Laboratory of Neurophysiology (1969)
Institut de Physiology, Ecole de Medicine, Geneva, Switzerland Invertebrate Vision Seminar (1969)
The Neurosciences Research Program - Work Session on The Retina held in Boston (1970)
College of Optometry, Pacific University, Cottage Grove, Oregon - Study Group on Human Vision (1970)
USC - Department of Biological Sciences - Bioscience Seminar (1970)
Good Samaritan Hospital, Department of Neurology and Neurophysiology, Portland, Oregon (1975)
International Workshop on Limulus Ventral Photoreceptors The Rockefeller University, New York, NY (1982)
International Symposium on Brain Mechanisms of Tactile Perception, Stockholm, Sweden (1999)

WVU - Department of Biology - Seminar (1983, 1988)
Department of Biochemistry - Seminar (1988)
Department of Ophthalmology - Seminar (1991)
Neural Network Interest Group - Seminar (1998)

WEST VIRGINIA NEUROSCIENCE SOCIETY CHAPTER (1987-)
Chair Subcommittee - Fall Research Conference (1991)
Councillor (1991-92)
Secretary/Treasurer (1992-95)

WVU NEURAL NETWORK SYMPOSIUM - June 15-16, 1989 Co-Organizer (with Roy Nutter - E.E.) and speaker

COMPUTER SOFTWARE DEVELOPMENT

Statistical and graphical program used by the Association of Chairmen of Departments of Physiology

Data collection and analysis programs use in the Departments of Physiology, Pharmacology, Physical Therapy, Biochemistry, and Anatomy

Poster Title generating program use by several labs in the Department

Human mortality modeling software use by Jack Riggs in Department of Neurology.

Grading program used in Departmental physiology courses (Medical, Dental, Nursing, and Allied Health Professional)

Laboratory automation software used in five labs throughout the country

Automated image analysis programs used in two labs in the Department

Data collection, animation, analysis, 3D statistics and modeling programs use in Paul Brown's lab

Laboratory automation addition to BrainWare used in George Spirou's lab.

Currently active

PUBLICATIONS

PAPERS:

MILLECCHIA, R., BRADBURY, J., AND MAURO, A. 1966. Simple photoreceptors in Limulus polyphemus. Science 154: 1199-1201.

MILLECCHIA, R. 1969. The ventral photoreceoptor cells of Limulus: An electrophysiological study. Thesis. The Rockefeller University. University Microfilms, Inc. Ann Arbor, Michigan.

CLARK, A. W., MILLECCHIA, R., AND MAURO, A. 1969. The ventral photoreceptor cells of Limulus: I. The microanatomy. J. Gen. Physiol. 54: 289-309.

MILLECCHIA, R. AND MAURO, A. 1969. The ventral photoreceptor cells of Limulus: II. The basic photoresponse. J. Gen. Physiol. 54:310-330.

MILLECCHIA, R. AND MAURO, A. 1969. The ventral photoreceptor cells of Limulus. III. A voltage-clamp study. J. Gen. Physiol. 54: 331-351.

BAUMANN, F., MAURO, A., MILLECCHIA, R., NIGHTINGALE, S., AND YOUNG, J.Z. 1970. The extra-ocular light receptors of the squids, Todarodes and Illex. Brain Research 21: 275-279.

MILLECCHIA, R. AND GWILLIAM, G. F. 1972. Photoreception in the barnacle: Electrophysiology of the shadow reflex pathway in Balanus cariosus. Science 177: 438-441.

GWILLIAM, G. F. AND MILLECCHIA, R. 1975. Barnacle photoreceptors: Their physiology and role in the control of behavior. Progress in Neurobiology 4: 211-239.

MILLECCHIA, R. AND MCINTYRE, T. 1978. Automatic nerve impulse identification and separation. Comput. Biomed. Res. 11: 459-468.

MILLECCHIA, R. 1981. Review: BASIC scientific subroutines. Vol. 1. by F.R. Ruckdeschel. J. Electrophysiol. Tech. 8(4): 143-144.

MILLECCHIA, R. 1983. Review: CBASIC user guide. by A. Osborne, G. Eubanks, Jr., and M. McNiff. J. Electrophysiol. Tech. 10: 148-149.

BROWN, P.B. AND MILLECCHIA, R. 1983. A simple microprocessor-based laboratory controller. I. Hardware and firmware. J. Electrophysiol. Tech. 10: 159-178.

MILLECCHIA, R. 1984. Introduction to microprocesssors: The Radio Shack TRS-80 Model III. J. Electrophysiol. Tech. 11: 215-240.

PAPERS - continued

SCHULZ, J.C., FLEMING, W.W., WESTFALL, D.P., AND MILLECCHIA, R. 1984. Cellular potentials, electrogenic sodium pumping, and sensitivity in the guinea-pig atria. J. Pharmacol. Exp. Ther. 231: 181-188.

FRANZ, G.N. AND MILLECCHIA, R. 1985. Proposal for a bootstrap circuit for loose patch clamps. J. Electrophysiol. Tech. 12: 1-14.

MILLECCHIA, R. AND BROWN, P.B. 1986. A simple microprocessor-based laboratory controller. II. Software support. J. Electrophysiol. Tech. 13: 111-140.

MILLECCHIA, R. AND BROWN, P.B. 1986. A sophisticated microprocessor-based laboratory controller. I. Hardware and firmware. J. Electrophysiol. Tech. 13: 161-187.

MILLECCHIA, R. AND BROWN, P.B. 1987. A sophisticated microprocessor-based laboratory controller. II. Host software. J. Electrophysiol. Tech. 14: 13-42.

MILLECCHIA, R. AND BROWN, P.B. 1987. A communications network for laboratory automation. J. Electrophysiol. Tech. 14: 103-120.

BROWN, P.B. AND MILLECCHIA. R. 1987. Computer-controlled analog and digital signal routers for laboratory automation. J. Electrophysiol. Tech. 14: 159-174.

BROWN, P.B., GLADFELTER, W., CULBERSON, J.L., COVALT-DUNNING, D., SONTY, R., PUBOLS, L.M., AND MILLECCHIA, R. 1991. Somatotopic organizations of single primary afferent axons projections to cat dorsal horn. J. Neurosci. 11: 298-309.

MILLECCHIA, R.J., PUBOLS, L.M., SONTY, R.V., CULBERSON, J.L., GLADFELTER, W.E., AND BROWN, P.B. 1991. The influence of map scale on primary afferent terminal field geometry in cat dorsal horn. J. Neurophysiol. 66 (3): 696-704.

RIGGS, J.E. AND MILLECCHIA, R.J. 1992. Mortality among the elderly in the U.S., 1956-1987: Demonstration of the upper boundary to Gompertzian mortality. Mech. Aging Dev. 62: 191-199.

RIGGS, J.E. AND MILLECCHIA, R.J. 1992. Using the Gompertz-Strehler model of Aging and mortality to explain mortality trends in industrialized countries. Mech. Aging Dev. 65: 217-228.

GLADFELTER, W.E. MILLECCHIA, R.J., PUBOLS, L.M., SONTY, R.V., RITZ. L.A. COVALT-DUNNING, D., CULBERSON, J., AND BROWN, P.B. 1993. Crossed receptive field components and crossed dendrites in cat sacrocaudal dorsal horn. J. Comp. Neurol. 336: 96-105.

PAPERS - continued

BROWN, P.B., MILLECCHIA, R., GLADFELTER, W., CULBERSON, J., AND COVALT-DUNNING, D. 1996. Variation of dorsal horn cell dendritic spread with map scale. J. Comp. Neurol. 374: 354-261.

BROWN, P.B., KOERBER, R.H., AND MILLECCHIA, R.. 1997. Assembly of the dorsal horn somatotopic map. Somatosensory and Motor Res. 14: 93-106.

WANG, L., MILLECCHIA. R., AND BROWN, P.B. 1997. Correlation of peripheral innervation density and dorsal horn map scale in cat. J. Neurophysiol. 78: 689 - 702.

BROWN, P.B. AND MILLECCHIA, R. 1997. Visualization of significant differences in somatotopic maps: A distributed t-test. J. Neurosci. Methods 77: 9 - 24.

BROWN, P.B., MILLECCHIA, R., LAWSON, J.L., STEPHENS, S., HARTON, P., AND CULBERSON J.C. 1998. Dorsal horn spatial representation of simple cutaneous stimuli. J. Neurophysiol 79: 983 - 998.

BROWN, P.B., HARTON, P., MILLECCHIA, R., LAWSON, J. KUNJARA-NA-AYUDHYA, T., , STEPHENS, S., MILLER, M.A., HICKS, L. AND CULBERSON J.C. 2000. Spatial convergence and divergence between cutaneous afferent axons and dorsal horn cells are not constant. J. Comp. Neurol 420: 277 - 290.

BROWN, P.B., KOERBER, H.R., AND MILLECCHIA, R. 2004. From innervation density to tactile acuity: 1. Spatial representation. Brain Res. 1011: 14 - 32.

RIGGS, A.J., MILLECCHIA, R.J., AND RIGGS, J.E. 2004. The contributions of Lavoisier, Carnot, Mayer to understanding heat illness. Aviation, Space, and Environmental Medicine 75: 916-917.

BROWN, P.B., MILLECCHIA, R., LAWSON, J.L., BROWN, A.G., KOERBER, H.R., CULBERSON, J. AND STEPHENS, S. 2005. From innervation density to tactile acuity: 2. Embryonic and adult pre- and postsynaptic somatotopy in the dorsal horn. Brain Res. 1055: 36 - 59.

ABSTRACTS:

LANTZ, R. C. AND MILLECCHIA, R. 1975. Identification of gamma-aminobutyric acid as a neurotransmitter in the barnacle shadow reflex pathway. Neuroscience Abstracts 1: 567.

MILLECCHIA, R. AND MCINTYRE, T. 1976. Single-channel multi-unit nerve impulse separation. 1976 Fall DECUS Symposium (Abstract)

YEZIERSKI, R.P., GUMBEL, R.T., MILLECCHIA, R.J., AND BROWN, P.B. 1978. Real time computer monitoring of unit activity in the central nervous system. Brain Theory Newsletter 3: 155.

FRANZ, G.N., MILLECCHIA, R., AND FRAZER, D.G. 1984. The effects of parasitic circuit elements and amplifier characteristics on stability and fidelity of gap voltage clamps. Bioph. J. 45: 59a.

MILLECCHIA, R. AND FRANZ, G.N. 1984. Analysis of a canonical set of patch clamp configurations with compensation of pipette resistance (Rp) and feedback resistance (Rf). Bioph. J. 45: 58a.

FRANZ, G.N. AND MILLECCHIA, R. 1985. Derivation of several voltage and current clamp circuits from a fundamental clamp circuit. Bioph. J. 49: 374a.

MILLECCHIA, R. AND FRANZ, G.N. 1985. Improved methods of series resistance compensation for voltage clamps. Bioph. J. 49: 231a.

GLADFELTER, W.E. AND MILLECCHIA, R. J. 1986. Wheel-running activity after iontophoretic injection of Kainic acid into the ventrolateral hypothalmus of rats. Soc. Neurosci. Abstr. 12 (2): 1530.

FRANZ, G.N. AND MILLECCHIA, R. 1987. Noise analysis of three fundamental voltageclamp circuits. Bioph. J. 51: 70a.

BROWN, P., MILLECCHIA, R., AND STINELY, M. 1987. Analog memory for continuous-voltage discrete-time implementation of neural networks. IEEE 1st Annual International Conference of Neural Networks.

BROWN, P., SONTY, R., MILLECCHIA, R., GLADFELTER, W., AND CULBERSON, J. 1988. Somatotopy of cutaneous axons in cat dorsal horn laminae III-IV: Qualitative. Soc. Neurosci. Abstr. 14 (1): 693.

SONTY, R., BROWN, P., MILLECCHIA, R., GLADFELTER, W., AND CULBERSON, J. 1988. Somatotopy of cutaneous axons in cat dorsal horn laminae III-IV: Quantitative. Soc. Neurosci. Abstr. 14 (1): 693.

CULBERSON, J., SONTY, R., MILLECCHIA, R., GLADFELTER, W., AND BROWN, P. 1988. Cutaneous afferent fiber projections to deep dorsal horn laminae (V-VI). Soc. Neurosci. Abstr. 14 (1): 693.

SONTY, R., CULBERSON, J., GLADFELTER, W., MILLECCHIA, R., AND BROWN, P. 1989. Dorsal horn termination patterns of cutaneous low threshold mechanoreceptors. Soc. Neurosci. Abstr. 15 (1): 755.

GLADFELTER, W., SONTY, R., CULBERSON, J., MILLECCHIA, R., AND BROWN, P. 1989. Crossed dorsal horn cell dentrites. Soc. Neurosci. Abstr. 15 (1): 757.

MILLECCHIA, R.J., AND BROWN, P.B. 1993. Assembly of dorsal horn cell cutaneous mecha-receptive fields. Soc. Neurosci. Abstr. 19 (1): 327.

BROWN, P.B., MILLECCHIA, R.J., GLADFELTER, W.E., CULBERSON, J.L., AND COVALT-DUNNING, D. 1993. Variation of dendritic morphology with map location in hindlimb dorsal horn. Soc. Neurosci. Abstr. 19 (1): 327.

WANG, L., MILLECCHIA, R.J., AND BROWN, P.B. 1994. Variations of peripheral innervation density on the cat hindlimb. Soc. Neurosci. Abstr. 20 (1): 115.

BROWN, P.B., MILLECCHIA, R.J., AND WANG, L. 1994. Correlation of dorsal horn map scale with peripheral innervation density. Soc. Neurosci. Abstr. 20 (1): 115 .

CULBERSON, J.L., MILLECCHIA, R., AND BROWN, P.B. 1996. Innervation densities on the cat hindlimb. Soc. Neurosci. Abstr. 22 (1): 98.

BROWN, P.B., MILLECCHIA, R., LAWSON, J., CULBERSON., J.L., AND STEPHENS, S.A. 1996. A model of lamina III-IV cell receptive fields. Soc. Neurosci. Abstr. 22 (1): 98.

ODOM, J.V., MILLECCHIA, R., AND BROWN, P.B. 1996. Visualization of significant differences of cell properties in somatotopic maps. Soc. Neurosci. Abstr. 22 (1): 99.

LAWSON, J., MILLECCHIA, R., CULBERSON, J.L., STEPHENS, S., AND BROWN, P.B. 1996. Correlation of dorsal rootlet RFs and dorsal horn cell RFs at the level of entry of dorsal rootlets. Soc. Neurosci. Abstr. 22 (1): 99.

STEPHENS, S., MILLECCHIA, R., CULBERSON, J.L., LAWSON, J., GLADFELTER, W.E., AND BROWN, P.B. 1996. Rostrocaudal distributions of cord dorsum potentials and observed and modeled single-unit responses. Soc. Neurosci. Abstr. 22 (1): 99.

MILLECCHIA, R., AND BROWN, P.B. 1996. Neural correlates of spatial discriminations in the dorsal horn. Soc. Neurosci. Abstr. 22 (1): 99.

KOERBER, H.R., MIRNICS, K., BRUNO, R., STEPHENS, S, MILLECCHIA, R..J., AND BROWN, P.B. 1997. Quantitative analysis of dorsal horn somatotopy following peripheral nerve transection and regeneration. Soc. Neurosci. Abstr. 23 (1): 436.

BROWN, P.B. AND MILLECCHIA, R. 1997. Assessment of dorsal horn spatial coding by the method of referred representation. Soc. Neurosci. Abstr. 23 (1): 2341.

MILLECCHIA, R., STEPHENS. S., LAWSON, J., CULBERSON, J., BROWN, P.B., HARTON, P., AND HICKS, L. 1997. Reconstruction of 2-D somatotopy from 1-D CDPs. Soc. Neurosci. Abstr. 23 (2): 2342.

STEPHENS, S., MILLECCHIA, R., CULBERSON, J., LAWSON, J., HARTON, P., FIELD, M., AND BROWN, P.B. 1997. Unmasking of dorsal horn receptive fields by local anesthesia. Soc. Neurosci. Abstr. 23 (2): 2342.

MILLER, M., FIELD, M., GOODMAN, I., HARTON, P., HICKS, L., JOHNSON, A., LAWSON, J., MILLECCHIA, R., ODOM, V., STEPHENS, S., AND BROWN, P.B. 1998. Effects of location and orientation on acuity in 2 point discrimination in humans and cats: Relations to properties of somatosensory system. Soc. Neurosci. Abstr. 24 (1): 435.

LAWSON, J., MILLECCHIA, R., HARTON, P., CULBERSON, J., MILLER, M., STEPHENS, S., AND BROWN, P.B. 1998. Comparison of pre- and postsynaptic somatopy in cat at the level of the dorsal horn. Soc. Neurosci. Abstr. 24 (2): 2079.

LAWSON, J., MILLECCHIA, R., STEPHENS, S., HARTON, P., CULBERSON, J., AND BROWN, P.B. 1999. Comparison of primary afferent projections predicted from cord dorsum potentials with HRP-filled axons. Soc. Neurosci. Abstr. 25 (1): 402.

BROWN, P.B., MILLECCHIA, R., LAWSON, J., CULBERSON, J., AND HARTON, P. 1999. Spatial convergence and divergence between cutaneous afferent axons and dorsal horn cells are not constant. Soc. Neurosci. Abstr. 25 (1): 402.

MILLECCHIA, R., LAWSON, J., CULBERSON, J., HARTON, P., GOODMAN, I., AND BROWN, P.B. 1999. A signal detection model of two point discrimination. Soc. Neurosci. Abstr. 25 (1): 402.

LAWSON, J., MILLECCHIA, R., AND BROWN, P.B. 2000. Frequency response of unidentified spinal dorsal horn neurons stimulated with transdermal electrical stimuli. Soc. Neurosci. Abstr. 26 (1): 147.

BROWN, P.B., LAWSON, J., AND MILLECCHIA, R. 2000. Dorsal root afflux establishes adult dorsal horn somatotopy. Soc. Neurosci. Abstr. 26 (1): 147.

MILLECCHIA, R.., LAWSON, J., AND BROWN, P.B. 2000. Spatial information content of somatotopic and referred representations. Soc. Neurosci. Abstr. 26 (1): 148.

KOERBER, H.R., BROWN, P.B., MILLECCHIA, R., AND CULBERSON, J. 2002. Altered dorsal horn organization three years after peripheral nerve transection and regeneration. Soc. Neurosci. Abstr. 28: 348.17.

LAWSON, J.J., MCILWRATH, S.L., BROWN, P.B., MILLECCHIA, R., CULBERSON, J.L., AND KOERBER, H.R. 2003. Recovery of two-point discrimination thresholds and dorsal horn cell receptive fields after peripheral nerve regeneration. Soc. Neurosci Abstr. 29: 587.14.

THOMPSON, J.M., SAMSON, F., BROWN, P.B., MILLECCHIA, R., AND SPIROU, G.A. 2005. Sound-evoked activity of MNTB neurons in unanesthetized cat. Soc. Neurosci Abstr. 31: 44.6.

Lance R. Molnar, Ph.D.

LanceMolnar@yahoo.com
LMolnar@eyemarkersystems.com
MolnarL@rcbhsc.wvu.edu

Home Address
1021 Laurelwood Drive
Morgantown, WV 26508
(304) 291-8517 (home)
(304) 218-9572 (cell)

SSN: 236-11-5355

EDUCATION:

West Virginia University, Ph.D. Pharmacology & Toxicology. 1994-1998.
"Cellular Mechanisms of Altered Neuronal Sensitivity in the Genetically Epilepsy-Prone Rat."

West Virginia University, B.A. Chemistry. 1989-1993.
B.A. Biology. 1989-1993.

PROFESSIONAL EXPERIENCE:

2002-Present. EyeMarker Systems, Inc. (formerly MD Biotech, Inc.), Morgantown, WV.
Director of Scientific Research

2003-Present. Dept. of Ophthalmology, West Virginia University, Morgantown, WV.
Adjunct Instructor

2004-Present. Dept. of Biochemistry and Molecular Pharmacology, West Virginia University, Morgantown, WV.
Adjunct Assistant Professor

2000-2001. University of Florida.
Postdoctoral Fellow, Dept. Pharmacology & Therapeutics.
Advisors: Drs. Ed Meyer and Roger Papke

1998-2000. National Institutes of Health. Bethesda, MD.
PRAT Fellow, NIGMS/NINDS.
Advisor: Dr. Judith R. Walters.

PROFESSIONAL AFFILIATIONS:

American Society for Pharmacology and Experimental Therapeutics (ASPET)
Society for Neuroscience
The Biophysical Society
Society of Toxicology
The International Society for Optical Engineering (SPIE)
The Association for Research in Vision and Ophthalmology (ARVO)

AWARDS AND HONORS:

1998. NIGMS Pharmacology Research Associate Training Award (PRAT)
1994-1998. NIH pre-doctoral training grant

PUBLICATIONS:

Kolanko, CJ, Grant, G, Francesconi, SC, Molnar, LR, Churilla, A. 2005. The Binding Efficiency of a Peptide Nucleic Acid (PNA) Probe and DNA Probe to the Crystal Protein Gene of *Bacillus thuringiensis* used as a Simulant for *Bacillus anthracis* in Diagnostic Assays. Biochemistry (Peer Review).

Molnar, LR, Odom, JV, DeRoos, BG, Kolanko, CJ. 2004. Ocular Scanning Instrumentation: Rapid Diagnosis of Chemical Threat Agent Exposure. Proc. SPIE 5403: 60-67.

Molnar, LR, Henry, K, Odom, JV, Kolanko CJ. 2003. Ocular Scanning Instrumentation: Confirmation of Biomarkers for Anticholinesterase and Cyanide Exposure. Proc. SPIE 5071: 33-40.

Walters, JR, Bergstrom, DA, Molnar, LR, Freeman, LE, Ruskin, DN. 2001. Effects of dopamine receptor stimulation on basal ganglia activity. In Basal Ganglia and Thalamus in Health and Movement Disorders. Eds. K. Kultas-Ilinsky and I.A. Ilinsky. Kluwer Academic/Plenum Publishers, New York. pp. 135-150.

Molnar, LR, Fleming, WW, Taylor, DA. 2000. Alterations in neuronal $GABA_A$ receptor responsiveness in genetic models of seizure susceptibility with different expression patterns. JPET 295: 1258-1266.

Molnar, LR, Thayne, KA, Fleming, WW, Taylor, DA. 1999. The role of the sodium pump in the developmental regulation of membrane electrical properties of cerebellar Purkinje neurons of the rat. Dev Br Res 112: 287-291.

ABSTRACTS AND PRESENTATIONS:

Kolanko, CJ and Molnar, LR. Ocular scanning instrumentation: Battlefield diagnostic technology. Advanced Technology Applications for Combat Casualty Care Conference. August 2003.

Kolanko, C.J., Grant, G., Franscesconi, S., Molnar, LR, Churilla, A. Comparison of kinetics for hybridization of a peptide nucleic acid (PNA) probe to a DNA probe of the crystal protein gene of Bacillus thuringiensis used as a stimulant for Bacillus anthracis in diagnostic assays. American Society of Microbiology Conference, May. 2003.

Molnar, LR, Henry, K, Odom, JV, Kolanko CJ. Ocular Scanning Instrumentation: Confirmation of Biomarkers for Anticholinesterase and Cyanide Exposure. Proceeding of The International Society for Optical Engineering. AeroSense Photonics for Defense and Security Conference. April. 2003.

Kolanko, CJ and Molnar, LR. Ocular scanning instrumentation: novel technology for soldier centric combat casualty care. Defense Advanced Research Projects Agency Persistence in Combat Conference. March. 2003.

Allers, KA, Ruskin, DN, Bergstrom, DA, Molnar, LR, Walters, JR. Correlations of multisecond oscillations in firing rate in pairs of basal ganglia neurons. Soc Neurosci Abst 25. 1999.

Fleming, W, Molnar, L, Taylor, D. Subsensitivity of cerebellar Purkinje neurons of genetically epileptic rats to $GABA_A$ receptor agonists in slices. FASEB J. 13: A475. 1999.

Molnar, L, Fleming, W, Taylor, D. Reduced responsiveness of GEPR-9 Purkinje neurons is associated with and inhibition of the GABA activated IPSC. FASEB J. 13: A476. 1999.

Taylor, D, Molnar, L, and Fleming, W. Reduced maximal hypoerpolarizing response to $GABA_A$ receptor activation in GEPR-3 Purkinje neurons is due to a decrease in stead-state GABA IPSC. FASEB J. 13: A476. 1999.

Kong, J.-Q, Molnar, LR, Kalbaugh, T, Thayne, KA, Taylor, DA, Fleming, WW. Nonspecific sensitivity change of denervated rat diaphragm is associated with membrane depolarization. Soc Neurosci Abst 24. 1998.

Molnar, LR, Fleming, WW, Taylor, DA. Alteration in $GABA_A$ receptor activation in GEPR-9 neurons exists prior to seizure susceptibility. Soc Neurosci Abst 24. 1998.

Taylor, DA, Molnar, LR, Thayne, KA, Fleming, WW. Developmental hyperpolarization of rat cerebellar Purkinje neurons is associated with an increase in sodium pump sites. Soc Neurosci Abst 24. 1998.

Molnar, LR, Fleming, WW, Taylor, DA. Developmental changes of electrical properties and pharmacologic responsiveness of cerebellar Purkinje neurons of the rat. Soc Neurosci Abst 23. 1997.

FUNDED RESEARCH SUPPORT:

March 2004-Present. Phase III SBIR. Defense Advanced Research Projects Agency and the Technical Support Working Group. "Novel Concepts for Solider Centric Technology in Non-Traditional Combat Casualty Care: Ocular Scanning Instrumentation". Role: PI.

December 2003-March 2004. Phase II SBIR. Defense Advanced Research Projects Agency and the Technical Support Working Group. "Novel Concepts for Solider Centric Technology in Non-Traditional Combat Casualty Care: Ocular Scanning Instrumentation". Role: PI.

March 2004-September 2004. Phase I SBIR. Defense Advanced Research Projects Agency. "Ocular Scanning Instrumentation Diagnosis of Induced Trauma from Thermobaric Weapon Detonation". Role: PI.

December 2002-October 2003. Phase I SBIR with option. United States Army. "Rapid Microscopic Method for Quantification of Exo-Erythrocytic (Liver Stage) Malaria Parasites". Role: Co-PI.

October 2002-August 2003. SBIR Phase I Supplement. Defense Advanced Research Projects Agency. "Novel Concepts for Solider Centric Technology in Non-Traditional Combat Casualty Care". Role: PI.

April 2002-October 2002. Phase I SBIR. Defense Advanced Research Projects Agency. "Novel Concepts for Solider Centric Technology in Non-Traditional Combat Casualty Care". Role: PI.

CURRICULUM VITAE

NAME:	Eisuke P. Murono, Ph.D.
OFFICE ADDRESS:	National Institute for Occupational Safety and Health, Health Effects Laboratory Division, Pathology and Physiology Res. Br., M/S-2015, 1095 Willowdale Road Morgantown, WV 26505
OFFICE PHONE:	(304)-285-6145, FAX (304)-285-5938
E-MAIL	EEM8@CDC.GOV
MARTIAL STATUS:	Married, two children

EDUCATION, TRAINING AND POSITION HELD:

1964	Franklin & Marshall College, B.A. in Biology
1966	West Virginia University, M.S. in Biology
1973	Rutgers University, Ph.D. in Zoology (Physiology)
1973	University of Michigan, M.P.H., School of Pubic Health
1973 - 1976	University of Michigan, Postdoctoral Fellow in Department of OB/GYN (Steroid Research Unit) and Reproductive Endocrinology Program
1976 - 1978	Roswell Park Memorial Institute, Cancer Research Scientist, Steroid Biochemistry Unit
1979 - 1995	WJB Dorn Veterans' Hospital, Columbia, South Carolina, Research Biologist
1979 - 1981	University of South Carolina School of Medicine, Department of Medicine, Division of Endocrinology/Metabolism, Research Assistant Professor
1980 - 1982	University of South Carolina School of Medicine, Department of Physiology, Adjunct Assistant Professor
1982 - 1991	University of South Carolina School of Medicine, Department of Medicine, Division of Endocrinology/Metabolism, Research Associate Professor; Department of Physiology, Adjunct Associate Professor
1991 - 1996	University of South Carolina School of Medicine, Department of Medicine, Division of Endocrinology/Metabolism, Research Professor; Department of Physiology, Adjunct Professor
1996 - present	National Institute for Occupational Safety and Health, Health Effects Laboratory Division, Pathology and Physiology Research Branch, Research Physiologist
1998 - present	West Virginia University, Department of Physiology, Adjunct Associate Professor

HONORS:

1988 - 1996	Review grants relating to testicular function for National Science Foundation
1985 - 1995	Associate Research Career Scientist Award from the Veterans' Administration
1974 - 1976	National Institutes of Health, Public Health Service Postdoctoral Fellowship-University of Michigan
1973 - 1974	Postdoctoral Scholar-Department of OB/GYN, University of Michigan
1972 - 1973	Ford Foundation Fellowship-Department of Population Planning, University of Michigan School of Public Health
1964	Black Pyramid Society-Senior honor society at Franklin and Marshall College

GRANTS (Principal Investigator):

1995 - 1996	South Carolina Cancer Center Grant-$14,500 for one year on Role of Extracellular Matrix in Promotion of Prostate Tumor Cell Growth.
1994 - 1995	South Carolina Cancer Center Grant-$12,900 for one year on Prostate Tumor Cell Growth and Fibroblast Growth Factor.
1991 - 1994	Veterans Administration Merit Review Grant-Total of $216,197 for three years. Regulation of Leydig Cell Function by Fibroblast Growth Factor.
1990 - 1991	BRSG from University of South Carolina School of Medicine-$5,000 for one year on Isolation and Characterization of Leydig Cell Precursors in Immature Testes.
1988 - 1991	Veterans Administration Merit Review Grant. Total of $94,233 for three years on Regulation of 5α-Reductase Activity in Leydig Cells.
1986 - 1987	BRSG from University of South Carolina School of Medicine-$5,000 for one year on Regulation of Neonatal Leydig Cells in Culture.
1984 - 1987	Veterans Administration Merit Review Grant. Total of $244,322 for three years on Effects of Ethanol on Leydig Cell Function.
1982 - 1984	Veterans Administration Merit Review Grant. Total of $56,951 for two years on Effects of Ethanol on Testicular Metabolism of Testosterone.
1981 - 1984	Veterans Administration Merit Review Grant. Total of $108,343 for three years on Effects of Ethanol on Leydig Cell Function.
1980	Veterans Administration Grant. Total of $2,000 for one year on Direct Effects of Ethanol on Testosterone Synthesis by Leydig Cells of Rat Testes.
1979	Dean's Research Fund Grant from University of South Carolina School of Medicine. Total of $2,000 for one year on Effects of Vinblastine Sulfate and Cytochalasin B on Steroid Biosynthesis by Interstitial Cells of Adult Rat Testis.

1974 - 1976	NIH, Public Health Service Postdoctoral Fellowship at the University of Michigan. Total of $28,000 for two years on 17-Ketosteroid Reductase Studies in Rat Testes.

MEMBERSHIPS:

Allegheny-Erie Regional Chapter Society of Toxicology
Endocrine Society
Society for the Study of Reproduction
American Society of Andrology
Sigma XI

UNIVERSITY OR V.A. COMMITTEES:

1979 - 1982 and 1987 - 1991	Animal Studies Subcommittee of the Research and Development Committee, Dorn, V.A. Hospital, Chairman, 1991
1979 - 1995	Space & Equipment Subcommittee of the Research & Developmental Committee, Dorn, V.A. Hospital
1982 - 1987 and 1991 - 1994	Research and Development Committee, Dorn, V.A. Hospital Chairman, 1986 and 1994
1990 - 1995	Research Review Committee, Dorn, V.A. Hospital, Chairman, 1995
1991 - 1995	Safety Committee, Dorn, V.A. Hospital
1997 - Present	Member NORA Fertility and Pregnancy Abnormalities Team
1999 - Present	Member ICCVAM Endocrine Disruptor Working Group

PUBLICATIONS:

Papers:

1. Leathem, J.H. and Murono, E.P. (1975). Ovarian Δ^5-3β- Hydroxysteroid Dehydrogenase in Aging Rats. Fertil. Steril. 26:996-1000.
2. Murono, E.P. and Payne, A.H. (1976). Distinct Testicular 17β-Hydroxysteroid Dehydrogenases: One in Interstitial Tissue and One in Seminiferous Tubules. Differential Modulation by Testosterone and Metabolites of Testosterone. Biochim. Biophys. Acta 450:89-100.
3. Payne, A.H., Kelch, R.P., Murono, E.P. and Kerlan, J.T. (1977). Hypothalamic, Pituitary and Testicular Function During Sexual Maturation of the Rat. J. Endocrinol. 72:17-26.
4. Murono, E.P. and Payne, A.H. (1978). Testicular Maturation in the Rat: In Vivo Effect of Gonadotropins on Steroidogenic Enzymes in the Hypophysectomized Immature Rat. Biol. Reprod. 20:911-917.
5. Murono, E.P., Kirdani, R.Y. and Sandberg, A.A. (1978). Specific Estradiol-17β-Binding Component in Adult Rat Kidney. J. Steroid Biochem. 11:1347-1351.
6. Lin, T., Murono, E.P., Osterman, J. and Nankin, H.R. (1979). The Effects of Verapamil on Interstitial Cell Steroidogenesis. Int. J. Androl. 2:549-558.
7. Lin, T., Murono, E., Osterman, J. and Nankin, H.R. (1980). The Effects of Calcium Ionophore on Interstitial Cell Steroidogenesis. Biochim. Biophys. Acta. 627:157-164.
8. Lin, T., Murono, E., Osterman, J., Allen, D.O. and Nankin, H.R. (1980). The Aging Leydig Cell: 1. Testosterone and Adenosine 3',5'-monophosphate Responses to Gonadotropin Stimulation in Rats. Steroids 35:653-663.
9. Nankin, H.R., Lin, T., Murono, E., Osterman, J. and Troen, P. (1980). Testosterone and 17-OH Progesterone Responses in Men to Three-Hour LH Infusions. Acta Endocrinol. 95:110-116.
10. Murono, E.P., Lin, T., Osterman, J. and Nankin, H.R. (1980). Direct Inhibition of Testosterone Synthesis in Rat Testis Interstitial Cells by Ethanol: Possible Sites of Action. Steroids 36:619-631.
11. Murono, E.P., Lin, T., Osterman, J. and Nankin, H.R. (1980). The Effect of Cytochalasin B on Testosterone Synthesis by Interstitial Cells of Rat Testis. Biochim. Biophys. Acta. 633:228-236.
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14. Lin, T., Murono, E., Osterman, J., Nankin , H.R. (1981). Direct Effect of Rat Leydig Cell Function by Tamoxifen. Metabolism 30:156-59.
15. Lin, T., Murono, E.P., Osterman, J. and Nankin.(1981). Regulation of Cyclic Guanosine 3',5'-monphosphate in Rat Interstitial Cells. Horm. Metab. Res. 13:114-117.

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23. Murono, E.P., Nankin, H.R., Lin, T. and Osterman, J. (1982). The Aging Leydig Cell: VI. Response of Testosterone Precursors to Gonadotropin in Men. Acta Endocrinol. 100:455-461.
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47. Murono, E.P. and Washburn, A.L. (1991). Δ^5-3β-Hydroxysteroid Dehydrogenase-Isomerase Activity in Two Distinct Density Leydig Cells. Differences in Responsiveness to Human Chorionic Gonaddotropin or 8-Bromo-Adenosine 3',5'-Monophosphate. Biochim. Biophys. Acta. 1091:55-62.
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53. Murono, E.P., Washburn, A.L., Goforth, D.P., Wu, N. (1993). Evidence that both receptor-and heparan sulfate proteoglycan-bound basic fibroblast growth factor are internalized by cultured immature Leydig cells. Mol. Cell. Endocrinol. 98:81-90.
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55. Wu, N, and Murono, E.P. (1994). A Sertoli cell-secreted paracrine factor(s) stimulates proliferation and inhibits steroidogenesis of rat Leydig cells. Mol. Cell. Endocrinol. 106:99-109.
56. Wu, N. and Murono, E.P. (1996). Temperature regulation of Leydig cell proliferation stimulated by Sertoli cell-secreted mitogenic factor: A possible role in cryptorchidism. Andrologia 28:247-257.
57. Wu, N., Murono, E.P., Carver, W.E., Terracio, L., Bacro, T. (1996). Evidence that α5β1 integrins mediate Leydig cell binding to fibronectin and enhance Leydig cell proliferation stimulated by a Sertoli cell-secreted mitogenic factor *in vitro*. Endocrine 5:75-83.
58. Murono, E.P., Derk, R.C., deLeón, J.H. (1999). Biphasic effects of octylphenol on testosterone biosynthesis by cultured Leydig cells from neonatal rats. Reprod. Toxicol 13:451-462.

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60. Murono, E.P., Derk, R.C., deLeón, J.H. (2001). Differential effects of octylphenol, 17β-estradiol, endosulfan, or bisphenol A on the steroidogenic competence of cultured adult rat Leydig cells. Reprod. Toxicol. 15:551-560.
61. Murono, E.P., Derk, R.C. (2002). Exposure to octylphenol increases basal testosterone formation by cultured adult rat Leydig cells. J. Steroid Biochem. Molec. Biol. 81:181-189.
62. Lawson, C.C., Schnorr, T.M., Daston, G.P., Grajewski, B., Marcus, M., McDiarmid, M., Murono, E., Perreault, S.D., Shelby, M., Schrader, S.M. (2002). An occupational reproductive research agenda for the third millennium Environ. Health Perspect. In press.

Book Chapter

1. Lin, T., Chen, G.C.C., Murono, E.P., Osterman, J. and Nankin, H.R. (1983). The Effect of Calcium, Calcium Ionophore, and Calcium Channel Blocking Agent on Leydig Cell Function. In K. Fotherby and S.B. Pal (Eds.). The Role of Drugs and Electrolytes in Hormonogenesis. Verlag Walter de Gryter & Company.

Abstracts:

1. Murono, E.P. and Leathem, J.H. Chick Testis Biochemistry and Pregnant Mare Serum Responsiveness. Am. Soc. Zool. Conf. In Comp. Endocr., October, 1970, Villanova, PA.
2. Murono, E.P. and Leathem, J.H. Response of Chick Testis Glycogen, Cholesterol and Steroid Enzyme to Gonadotropin. Am. Assn. Anat. Meeting, April 9-12, 1973, New York, NY.
3. Payne, A.H., Kelch, R.P., Murono, E.P. and Kerlan, J.T. Hypothalamic, Pituitary and Gonadal Hormones in Sexual Maturation of the Male Rat. Am. Soc. Androl. Meeting, March, 1976, Worcester, MA.
4. Murono, E.P. and Payne, A.H. Rat Testicular 17β-Hydroxysteroid Dehydrogenase: Evidence for Distinct Interstitial and Seminiferous Tubular Enzymes, and Differential Modulation of Each Enzyme by Testosterone and Metabolites of Testosterone. Presented at The Endocrine Society Meeting, 1976, San Francisco, CA.
5. Murono, E.P. and Payne, A.H. Competitive Inhibition of Interstitial 17β-Hydroxysteroid Dehydrogenase (17β-HSD) by Estradiol and 5α-androstane-3α, 17β-diol and Stimulation of 17β-HSD of Seminiferous Tubules by Testosterone. Presented at V International Congress of Endocrinology, June, 1976, Hamburg, Germany.
6. Lin, T., Murono, E.P., Osterman, J. and Nankin, H.R. Regulation of Cyclic Guanosine 3',5'-monophosphate in Rat Interstitial Cells. Clinical Res. 27:574A, 1979.
7. Nankin, H.R., Lin, T., Murono, E.P. Osterman, J. and Troen, P. Testosterone and 17-OH Progesterone Responses in Men to Three-Hour LH Infusions. Am. Soc. Andrology Meeting, 1980, Chicago, IL.
8. Lin, T., Murono, E.P., Osterman, J. and Nankin, H.R. Regulation of Cyclic Guanosine 3',5'-monophosphate in Rat Interstitial Cells. Am. Soc. Andrology Meeting, 1980, Chicago, IL.
9. Murono, E.P. and Osterman, J. Effect of Cytochalasin B on Testosterone Synthesis by Interstitial Cells of Rat Testis. The Endocrine Society Meeting, 1980. Washington, D.C.
10. Nankin, H.R., Lin, T.,Murono, E.P. and Osterman, J. The Aging Human Leydig Cell: Response to HCG. Am. Soc. Andrology Meeting, 1981, New Orleans, LA.
11. Lin, T., Murono, E.P., Osterman, J. and Nankin, H.R. Direct Inhibition of Rat Leydig Cell Function by Tamoxifen. Am. Soc. Andrology Meeting, 1981, New Orleans, LA.
12. Lin, T., Chen, G.C.C., Murono, E.P., Osterman, J. and Nankin, H.R. Adenylate Cyclase Activity of Aging Leydig Cells. Testis Workshop, 1981, New York, NY.

13. Osterman, J., Murono, E.P., Lin, T. and Nankin, H.R. Regulation of Rat Testicular Ornithine Decarboxylase (ODC) Activity In Vitro: Effect of Age, Follicle-Stimulating Hormone (FSH) and Luteinizing Hormone (LH). Am. Soc. Andrology Meeting, 1982, Hilton Head Island, SC.
14. Murono, E.P., Nankin, H.R., Lin, T. and Osterman, J. Response of Testosterone Precursors to Gonadotropin in Young and Old Men. Am. Soc. Andrology Meeting, 1982, Hilton Head Island, SC.
15. Murono, E.P., Lin, T., Osterman, J. and Nankin, H.R. Regulation of Glucose Uptake in Leydig Cells. Am. Soc. Andrology Meeting, 1983, Philadelphia,PA.
16. Osterman, J., Barnett, D., Murono, E.P. and Nankin, H.R. Stimulation of Ornithine Decarboxylase (ODC) Activity by Luteinizing Hormone (LH) in Isolated Rat Testicular Intersitial Cell In Vitro is Age Dependent. The Endocrine Society Meeting, 1983, San Antonio, TX.
17. Nankin, H.R., Lin, T., Osterman, J., Murono, E.P., Markuck, D., Carnes, J.E., Krzyzaniak, K. and Powell, D.A. Impotence-Evaluation and Treatment When Testosterone is Depressed. The Endocrine Society Meeting, 1983, San Antonio, TX.
18. Nankin, H.R., Lin, T., Osterman, J., Markuck, D., Powell, D.A., Carnes, J.E., and Murono, E.P. 7th International Congress of Endocrinology, 1984, Quebec City, Canada.
19. Murono, E.P. and Fisher-Simpson, V. Ethanol Directly Stimulates Dihydrotestosterone (DHT) Conversion to 5α-androstan-3α,17β-diol (3α-diol) and 5α-androstan-3β,17β-diol (3β-diol) in Rat Leydig Cells (LC). 7th International Congress of Endocrinology, 1984, Quebec City, Canada.
20. Murono, E.P. and Fisher-Simpson, V. Identification of a Microsomal Ethanol Oxidizing System in Purified Rat Leydig Cell. The Endocrine Society Meeting, 1985, Baltimore, MD.
21. Murono, E.P. and Fisher-Simpson, V. Developmental Patterns of 17β-Hydroxysteroid Dehydrogenase and 5α-Reductase Activities in Two Populations of Rat Leydig Cells. 1986 Testis Workshop, Vanderbilt University, Nashville, TN
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23. Lin, T., Vinson, N., Haskell, J. and Murono, E.P. Workshop on: Regulation of Ovarian and Testicular Function, 1987, Medical College of Georgia, Augusta, GA.
24. Murono, E.P. and Osterman, J. Differential Localization of 5α-Androstane-3α-Hydroxysteroid Dehydrogenase and 5α-Androstane-3β-Hydroxysteroid Dehydrogenase Activities in Rat Testicular Band 2 and Band 3 Cells. The Endocrine Society Meeting, 1987, Indianapolis, IN.
25. Murono, E.P. and Terracio, L. Differential Regulation of Steroidogenic Enzyme Activites Involved in Androgen Biosynthesis and Metabolism in Cultured Neonatal Testicular Cells. The Endocrine Society Meeting, 1988, New Orleans, LA.

26. Murono, E.P., Washburn, A.L., Krishna, R. and Lucas, K.L. Age-Dependent Regulation of Testosterone Accumulation by 5α-Reductase Activity in Cultured Leydig Cells. 10th Annual Testis Workshop, 1988, Baltimore, MD.
27. Murono, E.P. and Washburn, A.L. Selective Stimulation of 5α-Reductase Activity of Cultured Immature Leydig Cells by Human Chorionic Gonadotropin. The Endocrine Society Meeting, 1989, Seattle, WA.
28. Murono, E.P. and Washburn, A.L. Basic Fibroblast Growth Factor (bFGF) inhibits 5α-Reductase Activity in Cultured Leydig Cells from Immature Rats. Am. Soc. Andrology Meeting, 1990, Columbia, SC.
29. Murono, E.P. and Washburn, A.L. Localization of Leydig Cell Precursors in Immature Band Two Cells Isolated on Percoll Gradients. The Endocrine Society Meeting, 1990, Atlanta, GA.
30. Murono, E.P., Washburn, A.L., Goforth, D.P., and Wu, N. Evidence that Basic Fibroblast Growth Factor Receptors are Localized on Immature Leydig Cells. Society for the Study of Reproduction Meeting, 1992, Raleigh, North Carolina.
31. Murono, E.P., Washburn, A.L., Goforth, D.P., and Wu, N. Evidence that the Biphasic Effects of of Basic Fibroblast Growth Factor (bFGF) on Δ^5-3β-Hydroxysteroid Dehydrogenase-Isomerase (3β-HSD) Activity in Cultured Immature Leydig Cells are Mediated by Binding to High Affinity Receptors and to Heparan Sulfate Proteoglycans (HSPG). Society for the Study of Reproduction Meeting, 1993, Fort Collins, Colorado.
32. Wu, N., Murono, E.P., Washburn, A.L., and Goforth, D.P. A Novel Sertoli Cell-Secreted Mitogenic Factor Stimulates Proliferation of Rat Leydig Cells in Serum-Free Primary Culture: Partial Characterization, Regulation of Secretion and Leydig Cell Responsiveness. Society for the Study of Reproduction Meeting, 1994, Ann Arbor, MI.
33. Murono, E.P., Derk, R.C., deLeón, J.H. Biphasic effects of octylphenol on testosterone biosynthesis by cultured Leydig cells from neonatal rats. Society of Toxicology Annual Meeting, 1999, New Orleans, LA.
34. Murono E.P., Derk, R.C., deLeón, J.H. Effects of octylphenol on testosterone biosynthesis by cultured precursor cells (PC) and immature Leydig cells (ILC) from rat testes. Society of Toxicology Annual Meeting, 2000, Philadelphia, PA.
35. Murono, E.P., Derk, R.C., deLeón, J.H. Differential effects of 4-tert-octylphenol (OP), 17β-estradiol (E2), bisphenol A (Bis), or endosulfan (Endo) on steroidogenic competence of cultured adult rat Leydig cells (LC). Society of Toxicology Annual Meeting, 2001, San Francisco, CA.
36. Murono, E.P., Derk, R.C. Effects of methoxychlor (M) or its active metabolite, 2,2-bis (p-hydroxypheny1)-1,1,1- trichloroethane (HPTE), on testosterone (T) formation by cultured adult rat Leydig cells (LC). Society of Toxicology Annual Meeting, 2002, Nashville, TN.

EXPERIENCE:

Teaching Responsibilities -

University of South Carolina School of Medicine:

1980 - 1996: Shared in teaching the Endocrinology and Reproduction Section of Medical Physiology to first-year medical students and a similar course to nursing students.
1987 - 1996: Two-hour lecture on Methods of Radioimmunoassay for Biomedical Science Interdisciplinary Lab I.

University of South Carolina Graduate School:

1985 - 1996: Two-hour lecture on male reproductive biology for Human Developmental Biology course
1989 - 1996: Two-hour lecture on Endocrine Physiology to School of Pubic Health students.

West Virginia University:

1998 - Present: Currently teaching Endocrine and Reproductive Physiology in Physiology 441.

REFERENCES:

Dr. Francis L. Abel
Chairman, Department of Physiology
Univerisity of South Carolina School of Medicine
Columbia, SC 29208
(803) 733-3223

Dr. Arnold Brown
Chief of Staff
1 VA Center, Qts #19, VAAMROC
Togus, ME 04330

Dr. Vincent Castranova
Director, Pathology and Physiology Res. Br.
National Institute for Occupational Safety and Health
Health Effects Laboratory Division, M/S-2015
Morgantown, WV 26505
(304) 285-6056

Dr. Juraj Osterman
Professor of Medicine
Department of Medicine
University of South Carolina
School of Medicine
Medical Library Building, Suite 316
Columbia, SC 29208
(803) 733-3124

May 4, 2021

CURRICULUM VITAE

NAME: S. Jamal Mustafa

SOCIAL SECURITY NUMBER: Upon Request

MARITAL STATUS: Married

CITIZENSHIP: American

BUSINESS ADDRESS: Robert C Byrd Professor of Physiology and Pharmacology and Basic Pharmaceutical Sciences
WVU Health Sciences Center
2267 Health Sciences South
PO Box 9104
Morgantown WV 26506-9104
Phone: (304) 293-1123
FAX: (304) 293-3850
E-mail:
sjmustafa@hsc.wvu.edu/sjamalmustafa@gmail.com
http://directory.hsc.wvu.edu/Profile/31509

ACADEMIC QUALIFICATIONS:

BS.	Major: Chemistry	Lucknow University	1962
MS.	Biochemistry	Lucknow University	1965
Ph.D.	Biochemistry	Lucknow University	1969
Postdoctoral Fellow	Toxicology	C.S.I.R., New Delhi	1970-71
Postdoctoral Fellow	Cardiovas. Physiol.	Univ. of Virginia	1971-74

EMPLOYMENT:

Pre doctoral Fellow	(Lucknow Univ. Res. Fellowship; 1 year) Dept. of Biochemistry; Lucknow Univ. Lucknow, India	1965-1966
Pre doctoral Fellow	(State C.S.I.R., Lucknow; 1 year) Dept. of Biochemistry, Lucknow Univ. Lucknow, India	1966-1967
Pre doctoral Fellow	(I.C.M.R., New Delhi, 1 1/2 years) Department of Biochemistry, Lucknow Univ. Lucknow, India	1967-1969

Postdoctoral Fellow	(C.S.I.R., New Delhi, 1 1/2 Years) Industrial toxicology Research Center, Lucknow, India	1970-1971
Postdoctoral Fellow	(NIH; 3 years) Dept. of Physiology, Univ. of Virginia Medical School, Charlottesville, Virginia, USA	1971-1974
Assistant Professor	Department of Pharmacology University of South Alabama College of Medicine Mobile, Alabama, USA	1974-1977
Associate Professor	Department of Pharmacology University of South Alabama College of Medicine Mobile, Alabama, USA	1977-1980
Associate Professor	Department of Pharmacology School of Medicine East Carolina University Greenville, North Carolina, USA	1980-1983
Professor (Adjunct)	Department of Surgery School of Medicine East Carolina University Greenville, North Carolina, USA	1991-1992
Professor (Adjunct)	Department of Medicine School of Medicine East Carolina University Greenville, North Carolina, USA	1991 - 1995
Professor	Department of Pharmacology School of Medicine East Carolina University Greenville, North Carolina, USA	1983 - 2005
Professor (Adjunct)	Department of Physiology School of Medicine East Carolina University Greenville, North Carolina, USA	1996-2005
Professor (Adjunct)	Cardiovascular Center School of Medicine East Carolina University Greenville, North Carolina, USA	1997-2005
Professor (Adjunct)	Department of Pediatrics School of Medicine East Carolina University Greenville, North Carolina, USA	2003-2005
Professor (Adjunct)	Basic Pharmaceutical Sciences	2005-to date

	School of Pharmacy Morgantown, West Virginia, USA	
Professor	Department of Physiology & Pharmacology School of Medicine West Virginia University Morgantown, West Virginia, USA	2005-7/2020
Emeritus Professor	Department of Physiology & Pharmacology School of Medicine West Virginia University Morgantown, West Virginia, USA	7/2020-to date
Assistant Dean for Research,	WVU Health Sciences Center, Morgantown, West Virginia, USA	2005-6/2015
Assistant Vice President for Research,	WVU Health Sciences Center, Morgantown, West Virginia, USA	2008- 6/2015

RESEARCH AND/OR PROFESSIONAL EXPERIENCE: 37 years in the following fields:

2005-to date: Responsibilities as Assistant Dean and Vice President, HSC, West Virginia University:

- Coordinate the internal grants program which allocates seed funds for new projects and bridge funding for ongoing research projects with lapses in external grant support, based on competition and merit.
- Represent the School of Medicine and its research programs on the Scientific Advisory Board currently charged with implementation of the Strategic Research Plan.
- Work with the Assistant Vice President and Associate Dean to coordinate the annual Van Liere Convocation and Research Day symposium for the entire HSC.
- Advise basic scientists as well as junior and mid-career faculty in clinical departments with regards to research career development and application for NIH-K awards especially in the clinical departments.
- Organize drug discovery group at the WVU Health Sciences Center which is envisioned to eventually include faculty from the main university campus, scientists from NIOSH, BRNI and Mylan as well as faculty from the four component schools at health sciences.
- To assume a leadership role in promoting independent, interdisciplinary, and multidisciplinary research projects throughout Health Sciences with a special emphasis on the research expertise needed for health sciences to obtain several NIH program project awards, participate in the university's plans to develop a Research Park, and expand our performance in intellectual property and patent acquisition.
- Selected HSC faculty for one day 'Grant Writing Workshop' for June, 2009 and then selected ten candidates from the list 30 or so faculty from SOM for a full 'Grant Writing Workshop' sponsored jointly by the Research Corporation and our office.
- Work with Center for Cardiovascular and Respiratory Center for submission of the Cardiovascular COBRE application ($10 million) from SOM as a PI. Oversee and review the Center for Cardiovascular and Respiratory Sciences progress.
- Work with the Clinical Translational Science Award group for revising the application for October 2010 deadline. Program Director of the Pilot Project section of the CTSA application.
- Institutional Development Award (IDeA) Program Infrastructure for Clinical and Translational Research [IDeA-CTR] [U54] for September 2011 deadline. Program Director of the Pilot Grants Project.

- Oversee the Pilot Projects of the CTSI Partnership Funding Programs with University of Kentucky, Ohio State University and Indiana University.
- Member of Research Cabinet of the Research Corp., WVU.
- Represent the School of Medicine at the bi-monthly Research Assistant/Associate Deans meetings of the university coordinated by the WVU Vice President for Research and Economic Development.
- Work with the other Assistant Deans for Research and the AVP on developing an efficient and productive approach to pre-submission grant review especially for major federal grants being submitted by new junior investigators or in revised form by senior faculty to respond to Study Section critiques.
- Signature approval after staff budget review on all grants and contracts being submitted from faculty in the School of Medicine.
- Coordinate planning sessions for submission of NIH program project grants (P01) and NIH training grants (T-32) in the area of cardiovascular and pulmonary sciences.
- Coordinate an internal review of the research performance for specific basic science and clinical departments with a special focus on departments in the School of Medicine.
- Oversee the OLAR facilities on a routine basis and work closely with the Director. Chairing the Animal Advisory Committee of the HSC.
- Assist with the Research Corp. (RC) for all the Program to Stimulate Competitive Research grants for Health Sciences Center.
- Review the submission of Intellectual Property applications for the HSC to the office of Technology Transfer.
- Oversee the PPG seed funding and obtain PPG with the Cancer Center group headed by John Barnett

1980 to date: Presently working on defining the second messenger systems (cyclic nucleotides, G proteins, phospholipase C, protein kinase C and calcium) in the activation of vascular and endothelial adenosine receptors in coronary artery. We are also studying the up and down regulation of the coronary adenosine receptor and the involvement of second messengers in this process. We are trying to purify the A_2 adenosine receptor from vascular smooth muscle, sequence it and ultimately clone it. We might try to get a cDNA for this protein through the cDNA library, which codes for an identical protein. We are also working with the human coronary tissue to identify the adenosine receptors and the second messengers in normal and diseased tissue.

Further, I am also involved in the role of adenosine in asthma. We are using an allergic rabbit and mouse models of late phase asthma for this project. We have found that adenosine is without a response in normal rabbits but has a very severe bronchoconstriction in allergic rabbits. We have identified this receptor as A_1 through binding and isolated muscle bath studies. A similar response was found in our mouse model. We are using these models to test the effectiveness of anti-asthma drugs.

We are conducting a similar study in humans and I am working with a clinician to study the role of adenosine in asthma. We have challenged normal individuals and asthma patients with adenosine and measured the chemotactic factors in the blood. We are collecting the bronchiolar lavage fluids for measuring the levels of adenosine to determine if there is a correlation between adenosine and the bronchial reactivity. We are doing these similar experiments in allergic rabbits. Recently, we have developed a murine model for allergic asthma for these studies due to the availability of genetically altered animals.

1974-1980: During this period we have studied the role of nucleosides and prostaglandins in various low flow states with special emphasis to adenosine. We have studied the various metabolic factors involved in the regulation of blood flow to heart, brain and kidney and the effect of hypoxia (or varying oxygen tension) on the release of these vasoactive agents and the relationship with each other. Further, we have studied the molecular mechanisms of vasodilatation such as the involvement of a specific receptor for adenosine in the heart, brain and kidney. We have used isolated cardiac muscle, vascular smooth muscle, Langendorff heart and isolated cells for some of these experiments in order to demonstrate the involvement of these agents in the regulation of blood flow. The studies on the demonstration of adenosine receptor are done in intact coronary muscle preparation and isolated

perfused hearts and include the binding studies. Further, we have also studied the calcium blocking effect of several vasodilators in relation to adenosine using intact dog model and isolated tissue preparations.

1971-1974: During this period, I worked as an NIH Postdoctoral Trainee with Dr. Robert M. Berne in the Department of Physiology, University of Virginia Medical School, Charlottesville, Virginia and was engaged in the field of cardiovascular physiology related to nucleotide metabolism. Part of this work was related to the membrane transport phenomenon on the adenosine hypothesis for the regulation of coronary blood flow. Human red blood cell ghosts were used as a model for transport studies for adenosine. These studies have also been done taking embryonic heart cells at various ages of the chick embryo. The intracellular adenosine concentration, it's deaminated and phosphorylated derivatives were detected. Cell culture, electron microscopy, dual wavelength spectrophotometry and chromatographic techniques were employed in studying adenosine metabolism. In addition, the effect of coronary dilators like dipyridamole and aminophylline on the metabolism of adenosine under normal and hypoxic conditions were studied in cultured cardiac cells.

1970-1971: During this period, I worked as a postdoctoral fellow with Dr. S. V. Chandra at the Industrial Toxicology Research Center, Lucknow. This period was mainly devoted to the fundamental problems of occupational diseases related to metal toxicity, which was mainly centered on manganese poisoning. The disease, which occurs in the manganese miners, is primarily a neurological syndrome similar to Parkinson's disease. These studies included the extraction and estimation of neurotransmitter substances (dopamine and nor epinephrine) and serotonin employing spectrophotofluorometric technique, metal estimation, enzyme studies, electrophoresis and CSF protein and enzyme studies.

1965-1969: This period allowed me to complete the research work for doctorate degree (Ph.D.) at the Department of Biochemistry, Lucknow University, Lucknow with Dr. C. P. Tewari. This included mainly biochemical studies related to nutrition, energy aspects of mitochondrial, neurochemistry, enzyme studies including purification and kinetic. More sophisticated techniques like immunochemistry; electrophoresis and ultra-centrifugation were applied to study the isoenzymes of adenosine deaminase from the cytoplasmic and mitochondrial fractions of the mouse brain. In addition to this, detailed sub cellular studies for adenosine deaminase have been conducted with the brain, liver and spleen including various methods for solubilization of the mitochondrial enzymes.

Some work related to ammonia production in kidney has been done which is not included in Ph.D. thesis. This paper emphasizes that the guanine and adenosine deaminases of kidney are indirectly involved and play a contributory role in acid-base regulation by ammonia metabolism.

TEACHING EXPERIENCE:

(i) I have participated in lab-teaching of M. S. students during my Ph.D. period in the Department of Biochemistry, Lucknow University, Lucknow, India.

(ii) I was actively engaged in the teaching of cardiovascular physiology to medical and nursing students during my three year stay as a NIH (National Institute of Health, USA) postdoctoral fellow at the University at the University of Virginia, Department of Physiology, Charlottesville, Virginia, USA.

(iii) While employed as an Assistant and Associate Professor of Pharmacology at the University of South Alabama, College of Medicine, I was very actively engaged in the teaching of medical, nursing, graduate and physical therapy students at the medical school. My teaching assignments were in toxicology and industrial poisons, gastrointestinal pharmacology, neurochemistry, drug interactions, immunosuppressive drugs, biotransformation, non-narcotic analgesics, non-steroid anti-inflammatory drugs, endocrinology, chemotherapy and other related topics in pharmacology.

(iv) At South Alabama, I offered an elective program in cardiovascular pharmacology/biochemistry and toxicology to senior medical students.

(v) I offered advance level graduate courses in Biochemical Pharmacology and Cellular Pharmacology at the University of South Alabama.

(vi) I am presently involved in the teaching of Medical Pharmacology (conferences and lectures) and senior elective in Cardiovascular Pharmacology.

(vii) Presently, I am guiding the research of five postdoctoral fellows.

(viii) Presently, I am offering a graduate course in Cardiovascular Pharmacology. This graduate teaching also includes the research seminar and thesis research for students leading to Ph.D.

(ix) I am also involved in the teaching Pharmacology to Physician's Assistants program.

(x) At WVU, I am teaching in Pharmacy course in Pharmacology (PCOL 744).

(xi) At WVU, I am teaching in graduate level courses in Physiology and Pharmacology (PCOL 793 and PCOL 791).

(xii) At WVU, I am teaching in M-2 course in Pharmacology (PCOL 761 and PCOL 770).

(xiii) At WVU, I am teaching in Dental Pharmacology (PCOL 760).

PROFESSIONAL HONORS:

1. Recipient of the ICMR (Indian Council of Medical Research, New Delhi). Junior Research Fellowship Pre-doctoral Award (1967-1969).

2. Recipient of the CSIR (Council of Scientific and Industrial Research, New Delhi). Senior Research Postdoctoral Award (1970-1971).

3. Postdoctoral trainee of the NIH (1971-1974).

4. Listed as American Men and Women of Science.

5. Recipient of the Travel Award to attend the International Physiology Congress in Budapest, Hungary, 1980.

6. Listed as Frontiers in Science and Technology in United States.

7. FASEB Visiting Scientist at Elizabeth City State University, Elizabeth City, NC, March 24-25, 1988.

8. Elected Fellow to the American Physiological Society-Cardiovascular Section, 1994.

9. **Recipient of the 1995 Helms Research Award from Sigma Xi (the highest faculty award for outstanding researcher at East Carolina University).**

10. Elected Fellow to the American Heart Association - Circulation Council, 1995.

11. Member, Editorial Board, American Journal of Physiology: Heart and Circulatory Physiology, 1995-1999.

12. **Distinguished Service Award from Association of Scientists of Indian Origin in America, 1996.**

13. **Recipient of the First Award for Excellence in Basic Research from East Carolina University, School of Medicine, May, 1997**

14. **Recipient of "Mario Toppo Distinguished Scientist Award" from Association of Scientists of Indian**

Origin in America, San Diego, CA, April 16, 2000

15. **Recipient of the Life Time Achievement Award in Research and Creative Activities from East Carolina University, June, 2003**

16. Member, Editorial Board, American Journal of Physiology: Lung Cellular and Molecular Physiology, 2003-2005.

17. Member, Editorial Board and Associate Editor, Pulmonary Pharmacology and Therapeutics, 2004-2010.

18. Member, Editorial Board, American Journal of Physiology: Heart and Circulatory Physiology, 2005-2010.

19. Member, Editorial Board, Vascular Pharmacology, 2006-2016.

20. Editorial Board, J. Pharmacol. Exp. Ther., 2010-to date.

21. **Recipient of the Award for Excellence in Research from West Virginia University, School of Medicine, April, 2008.**

22. Editor (with Connie Wilson) of Handbook of Experimental Pharmacology, Volume 200**,** Adenosine Receptors in Health and Disease, Springer- Verlag GmbH (2009).

23. **Recipient of the Robert C. Byrd Professorship from West Virginia University, March, 2010.**

24. **Recipient of Chancellor's Award for Outstanding Achievement in Research and Scholarly Activities Health Sciences Center-West Virginia University, April 2013**.

25. Elected as a Fellow of the American Heart Association, May 2013.

26. Member Editorial Board, American Journal of Pharmacology and Toxicology, 2015-16.

27. Editorial Board, **Reactive Oxygen Species**, 2016-2020.

INTERNATIONAL MEETINGS ATTENDED AND OTHER INVITED SPEAKING ASSIGNMENTS:

1. First World Congress on Micro circulation-Toronto, Canada, June, 1975 - Speaker.

2. World Cell Culture Congress -Birmingham, Alabama, September, 1975 - Invited Speaker.

3. International Symposium on Industrial Toxicology, Lucknow, India, November, 1975 - Invited Speaker.

4. Symposium on "Trasylol and Myocardial Infarction," Frankfurt, West Germany, 1975 - Invited Speaker.

5. International Symposium on the "Mechanisms of Vasodilatation," Antwerp, Belgium- July, 1977 - Participant.

6. International Symposium on the "Excitation - Contraction Coupling," Heidelberg, West Germany- July, 1977-Participant.

7. 13th International Physiological Congress, Paris, France- July, 1977 - Speaker.

8. International Conference on "Physiological and Regulatory Functions of Adenosine and Adenine

Nucleotides," Banff, Canada- June 1978 - Invited Speaker.

9. 9th International Heart Congress -New Delhi, India- October, 1978 - Speaker.

10. Visiting Guest Lecture of the Society of Biological Chemists of India at Lucknow, India, on the "Cellular Mechanisms of Coronary Flow Regulation by Adenosine" - November 1978.

11. Satellite Symposium of the 14th International Physiological Congress on "Coronary Circulation" at Bad Nauheim, West Germany, July 1980 - Invited Speaker.

12. Visiting Guest Lecturer of the Thorax center/Cardiovascular Research of the Erasmus University, Rotterdam. Seminar Topic was "Adenosine and Coronary circulation," July 1980.

13. 14th International Physiological Congress, Budapest, Hungary, July 1980 - Speaker.

14. 8th International Congress of Pharmacology, Tokyo, Japan, July 1981 - Speaker.

15. Visiting Guest Lecturer at the Department of Pharmacology, Niigata University School of Medicine, Niigata, Japan, July 1981.

16. Visiting Scientist at Second Department of Medicine, Faculty of Medicine, University of Tokyo, Japan, July 1981.

17. Visiting Scientist at Chugai Pharmaceuticals Ltd., Tokyo, Japan, July 1981.

18. International Symposium on "Physiology and Pharmacology of Adenosine Derivatives" Invited Speaker. Tokyo, Japan, July 1981.

19. Visiting Guest Lecturer at the Department of Pharmacology, Faculty of Science, Mahidol University, Bangkok, Thailand, July 1981.

20. Participant at the International Symposium on Adenosine - June 7-11, 1982, Charlottesville, Virginia, USA.

21. 11th International Heart Congress, London, England- July 1983 - Speaker.

22. XIX Cardiology Congress, Argentina, September, 1983 - Speaker.

23. Dilazep Meeting, Bombay and New Delhi, India, September, 1983 - Guest speaker.

24. International Symposium on Calcium Entry Blockers and Tissue Protection -Rome, Italy, March 15-16, 1984 - Speaker.

25. Visiting Scientist of Council of Scientific and Industrial Research, New Delhi, India at Industrial Toxicology Research Center, Lucknow, India and Central Drug Research Institute, Lucknow, India. April-June 30, 1984.

26. Invited Speaker of Departments of Medicine and Biochemistry, East Carolina University, Greenville, NC, Combined seminar series, February 5, 1985, Topic: "Biochemical Mechanisms for the Regulation of Coronary Blood Flow".

27. Invited Guest Speaker at Burroughs Welcome Foundation, Research Triangle Park, NC, February 13, 1985, Topic: "Mechanisms of Coronary Flow Regulation by Adenosine".

28. Visiting Guest Seminar on "Calcium blocking activity of dilazep in isolated tissues" at Degussa Pharma Gruppe, Frankfurt, West Germany, March 1985.

29. Invited Guest Speaker at International Society for Heart Research (Indian Section) Lucknow, India, March, 1985. Topic: "Calcium blocking activity of dilazep in comparison to standard calcium entry blockers in isolated tissues."

30. Invited Guest Speaker at Rutgers University, New Brunswick, NJ, March 10, 1986, Topic: "Mechanism of Coronary Flow Regulation by Adenosine".

31. Invited Speaker, Department of Physiology, East Carolina University Medical School, Greenville, NC May 7, 1986, Topic: "Mechanisms of Coronary Flow Regulation".

32. Invited Speaker, Surgical Society of East Carolina University, School of Medicine, Greenville, NC, April 15, 1987, Topic, "Adenosine receptors in the heart".

33. Guest Speaker, Indian Pharmacological Society, Lucknow Branch at Central Drug Research Institute, Lucknow, India, August 13, 1987, Topic "Mechanism of Action of Adenosine on Coronary Smooth Muscle".

34. Invited Speaker, "Discussion Meeting on the role of adenosine in pain perception and neuro-regulation of the cardiovascular system" sponsored by the Commission of the European Communities, Topic: "Adenosine Receptors in the Heart" at Pisa, Italy, December 18-19, 1987.

35. FASEB Visiting Scientist, Elizabeth City State University, Elizabeth City, NC, Topic "Adenosine Receptors in the Heart", March 24-25, 1988.

36. Guest Speaker, Ciba-Geigy Corporation, Summit, NJ, Topic "Relaxing Effects of Adenosine and its Analogs in Vascular Smooth Muscle", June 1, 1988.

37. Invited Speaker at the International Conference on Biomembranes in Health and Disease; November 1-4, 1988, Lucknow, India. Topic: "Adenosine Receptors in Vascular Smooth Muscle."

38. Guest Speaker, Department of Physiology, Faculty of Medicine, Al-Azhar University, Cairo, Egypt. Topic: "Mechanisms of Coronary Flow Regulation by Adenosine", July 22, 1989.

39. Invited Speaker, Department of Pathology, School of Medicine, East Carolina University, Greenville, NC, March 14, 1990.

40. 4th International Symposium on Adenosine and Adenine Nucleotides at Lake Yamanaka, Japan, May 13-17, 1990.

41. Invited Speaker, Asta Medica, Frankfurt, Germany. Topic: "Effect of Azelastine and D-18024 on Allergen-Induced Airway Obstruction in Allergic Rabbits". July 8-10, 1991.

42. Invited Speaker, Cytel Corp., Dan Diego, California. Topic: "Role of Adenosine in Asthma". March 16-18, 1992.

43. Invited Speaker, Asta Medica, Frankfurt, Germany. Topic: "Role of Adenosine in Asthma". May 7-8, 1992.

44. Participant at the XVth European Congress of Allergology and Clinical Immunology, Paris, May 10-15, 1992

45. Symposium Speaker at the Purines' 92 meeting. Topic: "Adenosine-receptor mediated bronchoconstriction". Milan, June 21-24, 1992.

46. Symposium Speaker at Adenosine' 92 Mexico meeting. Topic: "Bronchial Effects of Adenosine in

Asthma". Ixtapa, Mexico, September 24-26, 1992.

47. Participant at the XXXII Congress of the International Union of Physiological Sciences, August 1-6, 1993, Glasgow, Scotland.

48. Invited Speaker at the Dept. of Physiology, Texas College of Osteopathic Medicine, Univ. of North Texas, Health Sciences Center at Fort Worth, Fort Worth, Texas. Topic: "Mechanism(s) of Coronary Artery Relaxation by Adenosine". December 2, 1993.

49. Invited Speaker at the Dept. of Physiology, School of Medicine, East Carolina Univ., Greenville, NC. Topic: "Mechanism(s) of Coronary Artery Relaxation by Adenosine". March 15, 1994

50. Invited Speaker at the Dept. of Pharmacology, School of Medicine, Wright State Univ., Dayton, Ohio. Topic: "Mechanism(s) 0f Coronary Artery Relaxation by Adenosine". April 20, 1994.

51. Guest Speaker at the 5th Intern. Sym. on Adenosine and Adenine Nucleotides, Philadelphia, PA. Topic: "Evidence for the Involvement of Nitric Oxide in Adenosine Receptor-Mediated Coronary Artery Relaxation". May 9-13, 1994.

52. Session Chairman at the 5th Intern. Sym. on Adenosine and Adenine Nucleotides, Philadelphia, PA. Topic: "Coronary Vasodilatory and Cardioprotective Actions of Adenosine". May 9-13, 1994.

53. Invited Speaker at the 2nd Messenger System: Molecular, Cellular and Behavioral Aspects. Trinidad and Tobago. Topic "Modulation of Protein Kinase C by Adenosine via A_1 Receptor and Pertussis Toxin Sensitive G Protein in Porcine Coronary Artery". June 16-17, 1994.

54. Invited Speaker at the Department of Medical Physiology, Texas A&M University, Health Sciences Center, Texas. Topic "Mechanism(s) of Coronary Artery Relaxation by Adenosine". November 30, 1994.

55. Invited Speaker at The Cardiovascular Institute, Loyola University Medical Center, Maywood, Illinois. Topic, “Mechanism(s) of Coronary Artery Relaxation by Adenosine, July 19, 1995.

56. Invited Speaker at the Department of Pharmacology, University of Saskatchewan, Saskatoon, Canada. Topic "Mechanism of Coronary Artery Relaxation by Adenosine." August 10, 1995.

57. Attendee at the 64th Annual Meeting of Society of Biological Chemists (India), Lucknow. Topic "Role of Adenosine in Coronary Circulation." October 6-8, 1995.

58. Plenary Lecture at the 5th Biennial International Conference of Pakistan Physiological Society, Ayub Medical College, Abbottabad, Pakistan. Topic "Role of Nitric Oxide in the Control of Coronary Tone." October 18-19, 1995

59. Invited Speaker at the National Center of Excellence in Molecular Biology, University of Punjab, Lahore, Pakistan. Topic "Mechanism of Coronary Artery Relaxation by Adenosine." October 23, 1995.

60. Invited Speaker at the Center for Biosciences, Jamia Millia Islamia, New Delhi, India. Topic "Mechanism of Coronary Artery Relaxation by Adenosine." October 25, 1995.

61. Invited Speaker at the V. Patel Chest Institute, University of Delhi, Delhi, India. Topic "Mechanism of Coronary Artery Relaxation by Adenosine." October 26, 1995.

62. Invited Speaker at the Department of Biochemistry, School of Medicine, East Carolina University, Greenville, NC. Topic, "Mechanisms of Coronary Artery Relaxation by Adenosine". May 1996.

63. Invited Speaker at the Purine ' 96 International Symposium, University of Milan, Milan, Italy. Topic,

"Coronary Vasodilation by Adenosine: Receptor Subtypes and Mechanisms of Action". July 6-9, 1996

64. Distinguished Scientists Seminar Program, Invited Guest, University of South Alabama, Mobile, Alabama. Topic: "Mechanism(s) of Coronary Flow Regulation by Adenosine". October 10-11, 1996.

65. Invited Speaker at the Third International Satellite Symposium on Adenosine, Cardioprotection and its Clinical Application. Topic: Signal Transduction in Coronary Smooth Muscle: Role of Protein Kinase C. New Orleans, LA, November 9, 1996.

66. Speaker at the 7th International Symposium on Mechanisms of Vasodilatation Maastricht (The Netherlands) July 6-9, 1997.

67. Invited Guest Speaker at New Drug Discovery Research, Ranbaxy Research Laboratories. Topic: Mechanism of Coronary Flow Regulation by Adenosine. New Delhi, India July 22, 1997.

68. Invited Speaker at the Department of Medicine (Cardiology), University of Florida, Gainesville, Florida. Topic: Mechanisms of Coronary Flow Regulation by Adenosine. August 25, 1997.

69. Speaker at the 6th International Symposium on Adenosine and Adenine Nucleotides: New Frontiers in the 3rd Millennium. Topic: Heterogeneity of Adenosine Receptors in Coronary Artery, Ferrara, Italy. May 19-24, 1998.

70. Invited Speaker, Meharry Medical School. Topic: Mechanisms of Coronary Flow Regulation by Adenosine, Nashville, Tennessee. September 17, 1998.

71. Invited Speaker, King Fahad Medical Center and King Abdul Aziz University. Topic, "Mechanisms of Coronary Artery Relaxation by Adenosine", Jeddah, Saudi Arabia, October 9, 1998.

72. Visiting Professor, Department of Pharmacology, Kuwait University Health Sciences Center, Faculty of Medicine, Kuwait. Topic: Mechanisms of Coronary Artery Relaxation by Adenosine, October 12, 1998.

73. Invited Speaker, Kuwait Institute of Scientific Research, Environmental Sciences Division, Kuwait. Topic: Role of Adenosine in Asthma, October 14, 1998.

74. Invited Speaker, Department of Pharmacology, All India Institute of Medical Sciences and Indian Pharmacological Society. Topic: Mechanisms of Coronary Artery Relaxation by Adenosine, New Delhi, India, October 29, 1998.

75. Invited Speaker, 3rd International Symposium on Cardiovascular Surgery and Cardiology in the 2000s. Topic: Influence of LDL on Coronary Adenosine Receptor, October 29-31, New Delhi, India, 1998.

76. Invited Guest Speaker, Department of Veterinary Biomedical Sciences and Dalton Cardiovascular Center, University of Missouri, Columbia, Missouri. Topic: Mechanisms of Coronary Artery Relaxation by Adenosine, December 10, 1998.

77. Speaker at the "Asthma 99-Theory to Treatment", Honolulu, HI. Topic, "Adenosine Receptor Mediated Bronchoconstriction and Bronchial Hyperresponsiveness in Allergic Mouse Model." April 30-May 3, 1999.

78. Invited lecture on the "Role of Adenosine in Asthma," as well as chaired a session at the 11th Annual Conference of the Physiological Society of India, November 28-30, 1999, New Delhi, India.

79. Organized and chaired a symposium on "Current Topic in Cardiovascular Research at the "Frontiers in Pharmacology and Therapeutics in 21st Century." December 1-4, 1999, New Delhi, India.

80. Invited lecture on the "Pharmacology of Coronary Adenosine Receptors" at the "Frontiers in Pharmacology and Therapeutics in 21st Century." December 1-4, 1999, New Delhi, India.

81. Invited lecture on "Changes in Inflammatory cells in BAL with Aerosilized Adenosine in a Mouse Model of Allergic Asthma" at Purine, 2000 meeting, July 9-13, 2000, Madrid, Spain.

82. Invited guest speaker at the "Second Symposium on Current Advances in Molecular Biochemistry: Applications in Health, Environment and Agriculture." Department of Biochemistry, Lucknow, India. Topic "Molecular Mechanisms of Coronary Artery Relaxation by Adenosine." November 9-11, 2000.

83. Speaker at the "New Drugs for Respiratory Diseases V", 5th International Conference, San Diego, CA, July 3-5, 2002.

84. Invited speaker at the 48th Annual Conference of Physiologists & Pharmacologists of India at King George's Medical College, Lucknow, India on "Role of Adenosine in Asthma" December 17-20, 2002.

85. Public lecture on "Adenosine: A Drug Target" to receive the Life Time Achievement Award in Research and Creative Activities from East Carolina University, December 3, 2003.

86. Participant at the American Section of the 26th Annual Meeting of International Society for Heart Research, Cancun, Mexico, May 2-5, 2004.

87. Participant at the Satellite Meeting of the ISHR World Congress on "Aging Heart & Blood Vessels", Melbourne, Australia, August 3-5, 2004.

88. Participant at the ISHR World Congress, Brisbane, Australia, August 6-11, 2004.

89. Invited lecture on the "Molecular Mechanisms of Coronary Regulation by Adenosine Receptors" at West Virginia University, Morgantown, West Virginia, September 24, 2004.

90. Invited lecture on the "Molecular Mechanisms of Coronary Regulation by Adenosine Receptors" at the Department of Biochemistry, Brody School of Medicine, Greenville, NC, October 11, 2004.

91. Invited lecture on the "Molecular Mechanisms of Coronary Regulation by Adenosine Receptors" at the Department of Pharmacological & Pharmaceutical Sciences, School of Pharmacy, University of Houston, November 30, 2004.

92. Invited guest lecture on "Molecular Mechanisms of Coronary Regulation by Adenosine" at the International CME and Workshop in cardiovascular & Thoracic Surgery, Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, India, February 10-12, 2006.

93. Invited guest lecture on "Adenosine: A Drug Target" to the Alumni Association of Department of Biochemistry, 7th Annual Lecture, February 20, 2006.

94. Invited guest lectures on "Molecular Mechanisms of Vascular Smooth Muscle Relaxation by Adenosine" and "A_{2A} Adenosine Receptor Down-Regulation Leads to Increased Pro-inflammatory Gene Expression in A_{2A} Knockout Allergic Mice" at the 8th International Symposium on Adenosine and Adenine Nucleotides, Ferrara, Italy, May 24-28, 2006.Also, Chaired two sessions entitled "Respiratory and Cardiovascular Systems" and "Basic and Applied Pharmacology" at the same meeting.

95. Invited lecture on "Expression of pro-inflammatory genes (Pro-I) in A_{2A} adenosine receptor (A_{2A}) knockout (KO) mouse model of allergic asthma" at the 15th World Congress (IUPHAR, 2006), Beijing, China, July 1-6, 2006.

96. Invited lecture on " Role of Adenosine in Asthma" at the International Conference on Cardio-Pulmonary

Regulation in Health and Disease: Molecular and Systemic Integration, Delhi, India, February 22-24, 2007.

97. A Distinguished Scientist Lecture on "Molecular Mechanisms of Coronary Flow Regulation by Adenosine" at University of South Alabama Medical School, Mobile, Alabama, and October 25, 2007.

98. Plenary lecture on "Adenosine Receptor Mediated Cardiovascular Control" at the 60th Indian Pharmaceutical Congress, 2008 from December 12-14 at Delhi, India.

99. Plenary lecture on "Heterogeneity of Coronary Adenosine Receptors in the Regulation of Coronary Flow" at the International Society for Heart Research-Indian Section from December 13-15, 2008 at Surat, India.

100. Invited lecture at Advinus Therapeutics Pvt. Ltd on the "Role of Adenosine in Asthma", Pune, India on December 17, 2008.

101. Invited lecture on the 'Heterogeneity of Coronary Adenosine Receptors in the Regulation of Coronary Flow' at the 2nd International Meeting on "Myocardial Protection: From Bench to Clinical Application" at Amman, Jordan, May 2-5, 2009.

102. Invited lecture on the 'Adenosine Receptor Signaling and Coronary Flow Regulation' at the 3rd International Symposium on "Myocardial Protection: From Bench to Clinical Application" at Amman, Jordan, April 18-21, 2010.

103. Invited guest at the 'Purines 2010' meeting in Barcelona, Spain from May 30-June 2, 2010 on the symposium entitled"Purinergic signaling in the cardiovascular system". The title of the talk was 'Adenosine Receptor Signaling and Coronary Flow Regulation'.

104. Guest lecture on "Role of Adenosine in Asthma" at Lupin Pharmaceuticals Ltd. Pune, India, June 18, 2010.

105. Invited lecture on the "HIGH-RESOLUTION TISSUE CLASSIFICATION OF ATHEROSCLEROTIC PLAQUES INMOUSE HEARTS USING ULTRASOUND PARAMETRIC IMAGING" First Middle East Conference on Biomedical Engineering (MECBME 11) held in Sharjah, UAE, Feb. 22-25, 2011.

106. Invited lecture on the "Adenosine receptors and the heart: role in the regulation of coronary blood flow" at ICCAD 2011 - the 9th International Congress on Coronary Artery Disease, Venice, Italy, October23-26,2011.

107. Invited lecture on the topic of 'ROLE OF ADENOSINE RECEPTOR SUBTYPES IN CORONARY REACTIVE HYPEREMIA AND ITS SIGNALING' at The 10th International Congress on Coronary Artery Disease (ICCAD 2013) held at Florence, Italy, October 13 -16, 2013**.**

108. Chaired a session on the topic of 'BASIC RESEARCH, MOLECULAR BIOLOGY' at The 10th International Congress on Coronary Artery Disease (ICCAD 2013) held at Florence, Italy, October 13 -16, 2013**.**

109. Presentation at the European Artheriosclerosis Society meeting, Madrid, Spain, May 30-June 3, 2104 on the topic of "A_1 Adenosine Receptor Deletion or Antagonism Reduces Atherosclerotic lesions in Apolipoprotein E deficient mice".

110. Keynote Speaker at 1st Winter Symposium at Oman Medical College, Oman, on January 28, 2015 on the topic of "Asthma Drug Development Based on Adenosine Receptor(s).

111. Invited Speaker at the International Conference on Pharmaceutical Sciences, Dubai, UAE, from January 21-22, 2015 on the topic of "Asthma Drug Development Based on Adenosine Receptors(s)".

112. Invited guest speaker at the 5th International Conference on Clinical & Experimental Cardiology (Cardiology-2015, April 27-29, Philadelphia) and an Organizing Committee Member. Topic "Molecular mechanisms of coronary flow regulation by adenosine".

113. Invited guest speaker at the BIT's 7th International Congress of Cardiology-2015 (December 3-6, Shanghai, China). Topic "Molecular mechanisms of coronary flow regulation by adenosine".

114. Session Chair for the "Cellular and Molecular Cardiology" at the BIT's 7th International Congress of Cardiology-2015 (December 3-6, Shanghai, China).

115. Plenary Speaker at the 103rd Indian Science Congress, University of Mysore (January 3-7, 2016), Mysore, India. Session Topic "Recent Advances towards Cellular Basis for Clinical Disorders". Title of the talk "Coronary flow regulation by adenosine and its Signaling".

116. Invited Speaker at the Environmental Health Sciences Seminar at the University of Texas Medical Branch, Galveston, Texas on May 15, 2017 on the topic of "Molecular Mechanisms of Coronary Flow Regulation by Adenosine".

117. Invited lecture on the "Role of Reactive Oxygen Species in Adenosine-Mediated Regulation of Coronary Flow" at ICCAD 2017 - the 12th International Congress on Coronary Artery Disease, Venice, Italy, October 15-17, 2017.

118. Keynote Presentation on the topic of "Coronary flow regulation and it's signaling by adenosine" at the 28th International Conference on Cardiology and Healthcare at Abu Dhabi. August 9-11, 2018.

119. Keynote Presentation on the topic of "Coronary flow regulation and it's signaling by adenosine" at the World Congress on Cardiology and Critical Care at Singapore. July 25-26, 2019.

SOCIETY AFFILIATIONS:

Fellow of the Council on Circulation of the Amer. Heart Association
Fellow of the College of Clinical Pharmacology
Fellow of the Amer. Physiological Society-Cardiovascular Section
Member of the Amer. Soc. for Pharmacology and Exptl. Ther.
Member of the American Physiological Society
Member of the Society for Experimental Biology and Medicine
Member of the New York Academy of Sciences
Member of the International Society for Heart Research
Member of the Am. Heart Assoc. & Council. On Circ. & Basic Sci.
Member of the North Carolina Heart Association
Member of the American Society for Hypertension
Member of the Amer. Association for the Advancement of Science
Life Member of the Association of Scientists of Indian Origin in America
Member of the Society of Sigma Xi
Member of the American Thoracic Society
Member of the European Respiratory Society
Member of the North American Vascular Biology Organization
Member of the Microcirculatory Society

PROJECTS DIRECTED:

1. Biochemical Basis of the Experimental Manganese Toxicity.
2. Preservation of Ischemic Myocardium by Pharmacological Agents.

3. Metabolism of Adenine Nucleotides in Developing Myocardium.
4. Effect of Vasodilator Drugs on the Metabolism of Adenosine in the Heart.
5. Release of Vasoactive Agents Due to Lowered Oxygen Delivery to the Heart and their Relationship.
6. Demonstration of Adenosine Receptor Binding in Plasma Membranes Isolated from Dog Heart, Carotid Vessels and Coronary Vessels.
7. Culturing of Cardiac, Vascular Smooth and Endothelial Cells.
8. Adenosine and Post occlusion Reactive Hyperemia of the Gut.
9. Vascular Smooth Muscle and Adenosine.
10. Role of Magnesium in the Relaxation Responses to Adenosine in Coronary Smooth Muscle.
11. Adenosine and Coronary Circulation.
12. Calcium Blocking Activity of Adenosine and Its Potentiating Compounds in Isolated Tissue Preparations.
13. Role of endothelium in the regulation of coronary tone by adenosine and the identification of EDRF's and EDCF's.
14. Role of fluoride in the endothelium-dependent responses.
15. Second messengers (G proteins, cyclic nucleotides, protein Kinase C, phospholipase C and calcium) and adenosine receptors in coronary artery.
16. Up and down regulation of coronary adenosine receptor.
17. Cloning of adenosine receptor from coronary artery.
18. Role of adenosine in asthma.
19. Identification of coronary adenosine receptors in human.

RESEARCH SUPPORT AS PRINCIPAL INVESTIGATOR:

1. Adenosine, Prostaglandins in Relation to Coronary Flow. National Institutes of Health ($96,329 for 6/76 - 9/79). R01-HL-19202-01
2. Adenosine Receptor and Coronary Circulation--Postdoctoral Support from National Institutes of Health ($44,700 for 7/78 - 6/81).
3. Coronary Dilators and Adenosine Metabolism. Alabama Heart Association ($27,090 for 7/76 - 6/79).
4. Adenosine, Prostaglandins in Relation to Coronary Flow. National Science Foundation (funded but declined due to the funding for the same project from NIH).
5. Embryonic Coronary Flow and Adenosine Metabolism. Alabama Heart Association ($7,050 for 7/75 - 6/76).
6. Vasoactive Agents in the Regulation of Blood Flow. Intramural Research Grant ($6,777 for 1/75 - 12/76).
7. Mechanisms of Coronary Flow Regulation by Adenosine - National Institutes of Health ($310,000 for 9/79 - 11/86). R01-HL-27339-04 (formerly HL-19202).
8. "Identification of Adenosine Receptors in Human Lung", North Carolina Lung Association ($10,000 for 7/86-6/89).
9. "Characterization of Adenosine Receptors in Human Coronary Arteries", American Health Assistance Foundation ($45,000 for 7/87-8/89).
10. "Small Instrumentation Grant", National Institutes of Health ($13,856 for 7/87-6/88).
11. "Mechanisms of Coronary Flow Regulation by Adenosine", National Institute of Health ($350,000 for 12/86-11/90). R01-HL-27339-09.
12. "Mechanisms of Coronary Flow Regulation by Adenosine", National Institutes of Health ($1,143,070; 12/90-6/96- direct cost). RO1-HL-27339-11.
13. "Mechanism of Coronary Flow Regulation by Adenosine", National Institutes of Health Minority Post-doctoral Trainee Supplement. ($91,891 for 7/93 - 6/95 - direct cost).
14. "Adenosine and Signal Transduction in Airway Smooth Muscle", National Institutes of Health. Minority Postdoctoral Trainee Supplement. ($107,235 for 9/30/94-3/31/97 direct cost).
15. "Upregulation of PKC by Adenosine in Coronary Artery". American Heart Association NC Affiliate ($55,000 for 7/96 - 6/98-direct cost).
16. "Adenosine and Signal Transduction in Airway Smooth Muscle" National Institutes of Health. Under-represented Minority Investigator Supplement. ($168,289 for 7/1/95-2/28/98).
17. "Coronary Vascular Effects of Adenosine in Adenosine Receptor Knockout Mice"- Mid-Atlantic Affiliate of the American Heart Association ($60,000 for 7/01-6/03). Terminated early due to Dr. Talukder's leaving.

18. Mechanisms of action of Dilazep. Degussa Pharmaceutical, Gruppe, West Germany, 10/1/82 – 9/05 ($70,000).
19. "Effect of Azelastine-like compounds on allergen-induced airway obstruction and bronchial hyperresponsiveness in allergic rabbits". Asta Medica ($101,372; 11/91-9/05- direct cost).
20. "Adenosine and Signal Transduction in Airway Smooth Muscle", National Institutes of Health ($759,759 for 4/94 - 3/02 - direct cost). R01-HL-50049-05.
21. "Mechanisms of Coronary Flow Regulation by Adenosine", National Institute of Health. ($1,248,450 for 9/96 - 1/05 - direct cost). R0l-HL-27339-16.
22. "Study of the Effect of Linkofylline ((#L001) on Adenosine-induced Bronchospasm in Allergic Rabbit Model" Link Technologies ($24,146 for 1/00-12/02).
23. "Study of the Effects of CVT-479 and CVT-510 and its comparison to CPA (A_1 agonist) and NECA (non-selective) in a mouse model of adenosine induced hyperresponsiveness" CVTherapeutics ($26,004 for 1/01-1/03).
24. "Study of the Effects of Selective A_{2B} Antagonists and its Comparison to Theophylline using NECA as an Agonist in a Mouse Model of Adenosine-Induced Airway Hyper-responsiveness" CVTherapeutics ($244,125 for 1/02-12/06).
25. "A Novel Drug for Asthma with Dual Action via A_1 ARs" Keenan Award from NC Biotechnology jointly with Endacea Inc., RTP, NC. ($150,000 for 2/02-3/05).
26. "A Novel Drug for Asthma with Dual Action L-97-1" NIH (SBIR) grant jointly with Endacea Inc., RTP, NC. ($48,825 for 3/02-8/05).
27. Coronary Flow Regulation by Adenosine" Competing Renewal for NIH- 1R01-HL-027339-22 ($2,229,077 total cost for 7/04-6/11).
    HL-27339 was the longest running grant at East Carolina University (since 1980-2005)
28. "Research Training in Cardiovascular and Pulmonary Diseases"-NIH-1T-32HL090610 (total cost $1,655,415 for 7/1/08-6/30/14).
29. "Role of CYP P450s in the Regulation of Vascular Tone through A_{2A} Adenosine Receptors", - NIH-1HL094447-01, total cost $2,548,902 (1/15/09-12/31/15).
30. "Coronary Flow Regulation by Adenosine" Competing Renewal for NIH- 1R01-HL-027339-27 ($2,773,201 total cost for 9/10-11/18). Continuously funded since 1976 (formerly HL-19202).
31. NIH/NIGMS Award Number U54GM104942 "WV IDeA CTR". (Total cost $19,581,898, 8/15/2012-6/30/2017). Program Director: S. J. Mustafa for 'Pilot and Collaborative Translational and Clinical Studies'. PI: Sally Hodder, M. D.
32. NIH/NIGMS Award Number U54GM104942 "WV IDeA CTR". (Total cost $20,000,000; 7/1/17-6/30/19). S. J. Mustafa-Senior Scientific Advisor for 'Program Pilot and Core'. PI: Sally Hodder, M. D.

Pending

1. "Hypertension and Vascular Adenosine A1 and A2B Receptors", New NIH-1 R01 HL147050-01 (Total Cost $3,175,690 from April 1, 2019-March 31, 2024.

Not Funded

1. NIH-COBRE "Cellular and Molecular Mechanisms of Cardiovascular Disease". Total cost $10,000,000, 4/2010-3/2115). Score 37.

AS CO-INVESTIGATOR:

1. "Importance of Adenine Nucleotides and Adenosine in Circulatory Shock and Their Modification by Aprotinin", Bayer AG, 56 Wuppertal 1, Pharma. Forschungszentrum, West Germany ($15,833 for 7/75 - 6/76).
2. "Characterizations and Study of the Mechanisms of Action of Adenosine in Isolated Human Coronary Artery".Starter Grant-East Carolina Univ. Sch. Med., $3,000, 7/1/85-6/30/86 (M.V.Ramagopal-Principal Investigator).
3. Involvement of G Protein in Coronary Adenosine Receptor System". Starter Grant-East Carolina Univ. Sch. Med., $1500, 7/1/88-6/30/89, (Majd Sabouni-Principal Investigator)

4. "Comparative Study of the Adenosine Receptor System in SHR and WKY Rats"". Starter Grant-East Carolina Univ. Sch. Med, $1500, 7/1/87-6/30/88 (Majd Sabouni-Prin. Invest.)
5. "Role of Adenosine in Allergic Asthma". Starter Grant-East Carolina Univ. Sch. of Med. $1,000, 7/1/89-6/30/90 (Shalid Ali-Principal Investigator).
6. "The effect of Adenosine in Allergic Rabbit Airways and its Antagonism by CGS-15943", Ciba-Geigy Pharmaceuticals, Summit, NJ. ($140,000 for 3/88 - 8/92).
7. "G Protein Coupling with Adenosine Receptor in Coronary Artery". Starter Grant-East Carolina Univ. Sch. Med., $1500, 1/1/91-12/31/92 (Tahir Hussani-Principal Investigator).
8. "Involvement of Protein Kinase C and G-proteins in Signal Transduction." Starter Grant-East Carolina Univ Sch Med., $3000, 7/1/92-6/30/93 (Ravi Marala- Principal Investigator).
9. "The Role of Adenosine Antagonist as an Anti-Asthma Drug in an Allergic Rabbit Model", Ciba-Geigy Pharmaceuticals, Summit, NJ. ($46,050 for 11/92-11/93).
10. "Role of Adhesion Molecules in Allergic Asthma", Cytel Corporation, San Diego, CA. (30,000 for 7/92 - 7/93).
11. "Identification of Adenosine Receptor mRNA in Coronary Artery." Starter Grant-East Carolina Univ. Med. Sch., $2,990; 8/1/94-6/30/95 (Neil Jeansonne-Principal Investigator).
12. "Regulations of Coronary Adenosine Receptors" American Heart Association, NC Affiliated-Chapel Hill, NC ($40,000 for 7/93-12/95).
13. "Characterization of A_3 Adenosine Receptors in the Airways of Allergic Rabbits" American Lung Association-NC Affiliate ($10,000 for 7/96 - 6/97).
14. "Adenosine Receptors and Signal Transduction in Asthmatic Airways". American Lung Association-NC Affiliate ($10,000 for 7/96 - 6/97)
15. Hyperpolarization in adenosine mediated vasorelaxation. NHLBI (NIH) ($433,932 for 7/97-6/02). Mentor for Hammed A. Olanrewaju, Ph.D.
16. "Cellular, Molecular and Physiological Mechanism of Delayed Cellular Protection in Myocytes", Mid-Atlantic Affiliate of the American Heart Association ($80,000 for 7/99-6/02)**.**
17. Mentored Clinical Scientist Award for R. Ray Morrison (1 K08 HL074001) on "Ischemia-Reperfusion in A_{2A} and A_{2A} Knockout Hearts" ($623,322 direct cost for 8/03-7/08).

STUDENT (GRADUATE AND OTHERS) RESEARCH DIRECTED:

I have guided three medical and two non-medical students for a 10-week summer research program in the past.

Ms. Robin Adams, M. S. Thesis, 1988, Major Professor.
Mr. Mike Clarke, Ph. D. Thesis, 1988, Committee Member.
Mr. Shannon Williams, Ph. D. Thesis, 1989, Major Professor.
Mr. Dave Ginty (Physiology), Ph. D. Thesis, 1989, Committee Member.
Mr. Dan Cushing, Ph. D. Thesis, 1990, Major Professor.
Ms. So Wong, Ph. D. Thesis, 1991, Committee Member.
Mr. Zhi Hong Meng, Ph. D. Thesis, 1992, Committee Member.
Ms. Shawn Barwick, Ph.D. Thesis, 1994-1997, Committee Member
Mr. Kevin DeSanty, Ph.D. Thesis, 1999, Committee Member
Mr. Gregg Ward, Ph.D. Thesis, 1999, Committee Member
Mr. Steve Simandle, Ph.D. Thesis (Physiology) 1999, Committee Member
Mr. Peter Oldenburg, Ph.D. Thesis, 2005, Major Professor
Mrs. Huda Tawfiq, M.B.B.S., Ph. D. Thesis, 2004, Major Professor
Mr. Hossam Shaltout, Ph. D. Thesis, 2003-2005, Committee Member
Mr. Salim Al-Rejaie, Ph. D. Thesis, 2003-2005, Committee Member
Ms. Amanda Jo LeBlanc, Ph. D. Thesis, 2005-2008, Committee Member
Mr. Michael Dodrill, Ph. D. Thesis, 2005-to date, Committee Member
Ms. Dovenia Ponnoth, Ph. D. Thesis, 2004-2008, Major Professor
Ms. Maryam S. Sanjani, Ph. D. Thesis, 2007-2011, Major Profesor
Mr. Yen-Chang Lin, Ph. D. Thesis, 2005-2011, Committee Member
Mr. E. J. Young, M. S.. Thesis, 2007-2011, Major Professor
Ms. Swati Kunduri, Ph. D. Thesis, 2008-13, Major Professor

Ms. Leor Zellner, Ph. D. Thesis, 2008-2011, Committee Member
Ms. Alys Piske, B. S. INBRE student, 2009.
Mr. Eric Zaccone, Ph. D. Thesis, 2009-, Co-chair of thesis committee
Mr. Josh Butcher, Ph. D.Thesis, 2011- Committee Member
Ms. Loretta Cain, Ph. D. 2008-2012 Committee Member (Public Health)
Mr. Shinichi Asano, Ph. D. Thesis, 2011-2012 Committee Member
Ms. Sara Geiger, Ph. D. Thesis, 2011- 2012-Committee Member (Public Health)
Ms. Tara Croston, Ph. D. Thesis, 2011- Committee Member
Ms. Omayma Alshaarawy, Ph. D. Thesis, 2010-2013-Committee Member (Public Health)
Ms. Danielle Shepherd, Ph. D. Thesis, 2011- Committee Member
Ms. Isha Pradhan, Ph. D. Thesis, 2010-2014- Committee Member
Mr. Ahmed Hanif, Ph. Thesis, 2012-to date- Committee Member

High School Preceptor ship

Honors Med Mary Jones (JH Rose) 1985
Honors Med Ginny Close (JH Rose) 1986
American Heart Association-NC Affiliate (Summer Fellowship for High School Seniors)
Jonathan Null, 1993
Chris Gay, 1994
A. Jason Harris, 1996
Lee Mathis, 1997
Mary Allen, 1998
David Ruff, 1999

Summer Venture for High School Students

Carla Martin, 1992

POSTDOCTORAL RESEARCH DIRECTED:

Purabi Dutta, Ph.D., 1977-1980
Geetha Ghai, Ph.D., 1978-1980
M. Mahny Mansour, MD., Ph.D., 1979-1980
Abdallah O. Askar, MD., 1981-1983
Michael O. Onwochei, Ph.D., 1981-84
Yoshito Nakagawa, Ph.D., 1982-1984
Mikio Nakazawa, Ph.D., 1984-1985
M. V. Ramagopal, Ph.D., 1984-1988
Katina Chatzipanteli, Ph.D., 1987-1988
Majd Sabouni, Ph.D., 1987-1990
Aqleem Mian, Ph. D., 3/1991-10/1991
M. Fahim, Ph. D., 1992-1993
Tahir Hussain, Ph.D., 1989-1995
Neil Jeansonne, Ph. D., 1993-1996
Aftab Ahmed, Ph.D., 1994-1996
Hammed Olanrewaju, Ph. D., 1992-1997
James Wild, Ph.D., 1995-1997
Shahid Ali, PH.D., 1989-1997
Khalid Lodhi, Ph.D., 1996-1998
Barun Choudhury, Ph. D., 1997-1998
Ravi Marala, Ph.D., 1991-1998
Worku Abebe, Ph. D., 1992-1998
Ashwin Patel, Ph. D., 1997-1998
Arif Hasan, Ph.D., 1996-1999
Moez Rekik, Ph.D., 1998-2001
Hasan Talukder, Ph.D., 1998-2001
Mohd Nayeem, Ph.D., 1998-2005
Peter Obiefune, Ph. D., 2002-2003
Fan Ming, M. D., 1998-2005
Bunyen Teng, Ph. D., 2001-2005
Habib Ansari, Ph. D., 2004-2009
Ahmed Nadeem, Ph. D.; 2004-2009
Dovenia Ponnoth, Ph. D.; 2009-2014
Mohammed El-Awady, Ph. D.; 2010-2012
Hasanuzzaman Talukder, Ph. D.; 2010-2012
Daniel Fil, Ph. D., 2011-2013
Xueping Zhou, Ph. D., 2012-2014
Uthra Rajamani,Ph.D., 2012-2013
Hicham Labazi, Ph. D., 2013-2015
Zichao Zhou, Ph. D., 2014-2015
Vishal Yadav, Ph. D., 2013-2018

Junior Faculty Mentor

Hammed A. Olanrewaju, Ph.D., 1997-present

Nicholas Cozzi, Ph.D., 1999-2001
R. Ray Morrison, M. D. 2003-2005
Mohd Nayeem, Ph.D., 2005-2009
Bunyen Teng, Ph. D., 2005-2017
Collin John, M. D. (K-12 scholar) 2011-13

ADMINISTRATIVE AND SERVICE ACTIVITIES:

Departmental Committees, University of SouthAlabama
Research Committee, Equipment Committee
Continuing Medical Education Committee

College of Medicine Committees, University of South Alabama
- Animal Care and Resources Committee
- Admissions Committee (Temporary)
- Graduate Program Committee
- Biohazard Committee
- Institutional Self-Study Committee, Basic Science Departments
- Research Advisory Committee

School of Medicine, East Carolina University
- Departmental Equipment Committee (1998-present)
- Departmental Graduate Curriculum Committee (1998-present)
- Planning Committee, Basic Science Retreat, 1986
- Graduate Studies, 1989, 1990
- Graduate Committee 1983-1992, 1998-present
- Personnel Committee 1983-1991, 1994-1997, 1998-present
- Chair, Departmental Personnel Committee, 1993-1994
- Basic Sci & Education Support Program 1992-1998
- Member Personnel Committee, Microbiology 1989-1992
- M3-4 Curriculum Committee, 1998-1999
- Cardiovascular Center Planning Committee Member 1994-present
- Mission Based Budgeting (Research Productivity Group) 1999-present
- Elected member of School of Medicine Promotion and Tenure Committee, 1999-2003
- Chair, School of Medicine Promotion and Tenure Committee, 2003
- Elected member of the School of Medicine Unit Code Review Committee, 1999-2000
- School of Medicine Research Advisory Council, 2003-

Faculty-Welfare Committee, East Carolina University, 1990-1993
- Faculty Senate, 1991
- International Students Committee, 1991-92
- Sigma Xi Helms Research Award Committee 1992-
- Faculty Affairs Committee, 1993-1995
- Faculty Grievance Committee, 1995-1997
- Faculty Senate Grievance Board (Alternate Member) 1998-2000
- Faculty Senate Unit code-1998-2000
- Faculty Senate Cultural Awareness 1999-2001
- Faculty Senator 1999-2001

School of Medicine, West Virginia University

- Departmental: Committee Member for the Development of an Advanced Level Graduate Course in Pharmacology.
- Internal Grant Funding Review Committee (Bridge and Development).
- Member Search Committee for Director, Interdisciplinary Center for Diabetes and Obesity.

Member Search Committee for Center for Interdisciplinary Research Cardiovascular Sciences for Diabetes and Obesity.
Committee member for Chair and Center Directors.
Member of the Oversight Committee for Animal Care and Use Committee.
Member Search Committee for Center for Immunopathology & Microbial Pathogenesis.
Member Search Committee for the Director for OLAR.
Member Steering Group of the Committee on Pharmacology

Health Sciences Center, West Virginia University

Member Search Committee for Douglas Glover Chair for Clinical Pharmacology Research and the Wyeth Research Scholar at the School of Pharmacy.
Heading the Development of Center for Drug Discovery and Therapeutics, 2006-2010.

CONTINUING MEDICAL EDUCATION:

I was one of the speakers for the Drug Therapy I course offered by the Department of Pharmacology, University of South Alabama Medical School, Mobile, Alabama in 1976. The topic of my talk was "Naloxone vs. the Other Narcotic Antagonists". This program was designed to keep abreast the local practicing physicians in the area of drug use. This program was accredited by AMA for CME credits.

I served on the organizing committee for the Drug Therapy II course at the Department of Pharmacology, University of South Alabama Medical School, Mobile, Alabama in 1977.

I was one of the course directors for a CME program at East Carolina University offered by the Department of Pharmacology on October 27, 1982 entitled "A New Approach to the Treatment of Cardiovascular Diseases". The topic of my talk was "Pharmacological Actions of Calcium Antagonists on the Coronary Circulation." This program was designed to bring up-to-date the local practicing physicians on a new class of drugs called calcium blockers. This program was approved by AMA for CME credits.

MISCELLANEOUS:

Referee Editor: Circulatory Shock and Proceedings of the Society for Experimental Biology and Medicine, Circulation Research, Life Sciences, American Journal of Physiology, Blood Vessels, European Journal of Pharmacology, Alcohol, Journal of Cardiovascular Pharmacology, Cardiovascular Research, Circulation, Pharmacogenetics & Genomics, British Journal of Pharmacology, American Journal of Respiratory & Critical Care Medicine, American Journal of Respiratory Cell & Molecular Biology, Acta Physiologica, Journal of Immunology & Cell Biology, Journal of Pharmacology & Experimental Therapeutics, European Respiratory Journal, Vascular Pharmacology, Journal of Molecular & Cellular Cardiology, Proceedings of the National Academy of Sciences and Clinica Chemica Acta.

Grant Review:

National Research Council of Canada
American Heart Association
NIH (Experimental Cardiovascular Sciences, Ad.hoc. member), 10/1990
Research, Education and Development International.
Member Site Visit Team, Research Review Committee "A", 9/1993.
Member Site Visit Team, Special Review Committee (NIDA SRCD-J-47), 2/94.
Member Site Visit Team, Special Review Committee (NIDA SRCD-E-21), 11/94.
Member Research Review Subcommittee of the North Carolina Affiliate of the American Heart Association, 1994-1997.
Member Site Visit Team, Special Review Committee (NIDA-SRCD-E-23), 6/95
NIH (Cardiovascular and Renal Study Section B Ad.hoc member), 1994-1996
NIH (Ad.hoc Study Section on □□Origins of Asthma in Early Life), 6/1998

NIH (Ad hoc member Experimental Cardiovascular Sciences Study Section) 3/99, 10/01
NIH (Ad hoc member) for P01 HL073361-01 on "Role of Inflammation in Pulmonary Injury" 10/17/02.
NIH (Ad hoc member) for P01 HL073361-01A1 on "Role of Inflammation in Pulmonary Injury" 2/25/04.
Member CSR Special Emphasis Panel ZRG1 MOSS-D (03), 4/16/04.
Member CSR Special Emphasis Panel ZAI1 SV-1 (J-3), NIAID on "Adenosine Receptors in Inflammation and Immunity", 10/1/05.
AHA National Review Committee for R1 Cardiac Biology 2, April 15, 2008.
NHLBI Review Panel ZHL 1 CSR-R (02)- June 19, 2008.
NHLBI Review of P01, September 5, 2008.
NHLBI Review ZHL1 CSR-M (F1)T32, January 11, 2010
NHLBI Special Emphasis Panel 2012/01 Council ZRG1 VH-B 02, August 25, 2011
NHLBI-PP-786, December 14, 2011
NIH: Ad.hoc member, Hypertension and Microcirculation Study Section, June 14-15, 2012
NIH: Special Emphasis Panel/Scientific Review Group 2013/01 HLBP 1, September 10, 2012

Session Chairman:

Chaired sessions at the Federation Meetings
ASPET Meetings
International symposiums and Meetings (see page 5)
5th Biennial International Conference of Pakistan Physiological Society, 10/95.
Chaired sessions at the International Symposium on Adenosine and Adenine Nucleotides, 1994, 1998 and 2006.
Chaired a session on 'Endothelial Function' at the International Conference on Cardio-Pulmonary Regulation in Health and Disease: Molecular and Systemic Integration, Delhi, India, February 22-24, 2007.
Chaired at the International Society for Heart Research-Indian Section from December 13-15, 2008 at Surat, India.
Chaired a session on the topic of 'BASIC RESEARCH, MOLECULAR BIOLOGY' at The 10th International Congress on Coronary Artery Disease (ICCAD 2013) held at Florence, Italy, October 13 -16, 2013.

Patents:

I have two patents filed with ECU which are still pending. I also have a technology transfer to a private company.

U.S. Patent #5932557 awarded on "Adenosine A_1 Receptor Antisense Oligonucleotide Treatment of Alcohol and Marijuana-induced Psychomotor Impairments.

U.S. Patent #6,387,613 B1 awarded on "Method for Treating Airway Diseases with Combined Administration of A_{2B} and A_3 Adenosine Receptor Antagonists".

West Virginia University Disclosure 660 – "Use for Angiotensin II Type I Receptor Blockers (ARBs) and ACE Inhibitors Treat Lung Diseases (asthma, COPD, airway hyper-responsiveness and inflammation and others) as well as Endothelial Dysfunction and Vascular Inflammation in Various Cardiovascular Diseases. Provisional patent filed in April, 2104.

Offices held at National level:

President-Elect, Association of the Scientists of Indian Origin in America, 1991-92.
President, Association of the Scientists of Indian Origin in America, 1992-93.
Past-President, Association of the Scientists of Indian Origin in America, 1994-95.

Local Community Service:

PTA Board of Sadie Saulter Elementary School, Greenville, NC (1991-1994).
PTA Board of J.H. Rose High School, Greenville, NC (1994-present).
Pitt County Educational Foundation Board, Greenville, NC (1991-1993).
President-Elect, Indian Association of Eastern NC, Greenville, NC (1985-1986).
President, Indian Association of Eastern NC, Greenville, NC (1986-1987).
Past-President, Indian Association of Eastern NC, Greenville, NC (1987-1988).
President, Islamic Association of Eastern, NC Greenville, NC (1993-present).
Board Member, Greenville Public Access Television Corporation, City of Greenville, 1999-
Volunteer for Correction Center for Islamic Education, Vanceboro and Murray, 1998-
Greenville Public Access Channel Board Member, 1998-to-date
Human Relations Council, City of Greenville, NC, 2002-2006.
Islamic Center of Morgantown, WV, EC (2005-2006), President (2006-2010), Board Chair (2010-2016).
Hairless Board Member (Interfaith Group), WV, 205-2018.
Member Greater Morgantown Interfaith Association (2016-to date)
WV-ACLU Board Member (2017-to date)

PUBLICATIONS:

Refereed Articles:

1. Mustafa, S. J. and C. P. Tewari. Studies on adenosine deaminase in mouse liver and spleen. Enzymologia 38:177-188, 1970.

2. Mustafa, S. J. and C. P. Tewari. Latent adenosine deaminase in mouse brain I. Exposure and solubilization of the mitochondrial enzyme. Biochem. Biophys. Acta. 198:93-100, 1970.

3. Mustafa, S. J. and C. P. Tewari. Latent adenosine deaminase in mouse brain. II. Purification and properties of the mitochondrial enzyme. Biochem. Biophys. Acta. 220:326-337, 1970.

4. Sanger, K. C. S. and S. J. Mustafa. Induction of renal adenosine and guanine deaminases during ammonium chloride acidosis in rats. Biochem. Biophys. Commun. 42:1056-1062, 1972.

5. Mustafa, S. J. Latent adenosine deaminase in rat brain. Pathologica et Microbiologia 38:388-380, 1972.

6. Mustafa, S. J. and S. V. Chandra. Levels of dopamine, serotonin and nor adrenaline in whole brain of rabbits in chronic-manganese toxicity. J. Neurochem. 18:931-933, 1971.

7. Mustafa, S. J. and S. V. Chandra. Adenosine deaminase and protein pattern in serum and C.S.F. in experimental manganese encephalopathy. Arch. fur Toxikol. 201:279-285, 1972.

8. Chandra, S. V. and S. J. Mustafa. Pancreatic damage in experimental manganese intoxication. Ind. J. Indust. Med. 18:136-138, 1972.

9. Karr, P., S. J. Mustafa, S. V. Chandra. Amino acid changes in rat testes in manganese poisoning. Arch. Hig. Rada. 23:307-310, 1972.

10. Mustafa, S.J., R. Rubio and R. M. Berne. Effect of detergents and homogenization on adenosine kinase and adenosine deaminase. Proc. Soc. Exptl. Biol. Med. 141:161-163, 1972.

11. Mustafa, S. J., R. Rubio and R. M. Berne. Uptake of adenosine in dispersed cardiac cells. Circulation 48: IV-198, 1973.

12. Mustafa, S. J., R. Rubio and R. M. Berne. Uptake of adenosine in dispersed chick heart cells. Am. J. Physiol. 228:62-67, 1975.

13. Mustafa, S. J. and H. W. Allen. Adenine nucleotides and nucleosides in chick embryo ventricle. Proc. Soc. Biol. and Med. 155:386-389, 1977.

14. Goldfarb, R. D., S. J. Mustafa and T. M. Glenn. Effect of prostaglandin F_2 administration prior to coronary ligation. Am. J. Physiol. 234:H718- H723, 1978.

15. Mustafa, S. J. Effect of aprotinin on the metabolism of adenosine in cultured heart cells. Biochem. Pharmacol. 28:340-343, 1979.

16. Mustafa, S. J. Effect of vasodilators on the metabolism of adenosine in cardiac cells. Biochem. Pharmacol. 28:2617-2624, 1979.

17. Dutta, P. and S. J. Mustafa. Saturable binding of adenosine to the dog heart microsomal fraction: competitive inhibition by aminophylline. J. Pharmacology and Experimental Therapeutics 211:496-501, 1979.

18. Mustafa, S. J. Effect of varying pH (H^+) on the metabolism of adenosine in cardiac cells. J. Mol. Cell. Cardiol. 12:335-346, 1980.

19. Mustafa, S. J. Cellular and molecular mechanism(s) of coronary flow regulation by adenosine. Molecular and Cellular Biochemistry. 31:67-87, 1980.

20. Dutta, P. and S. J. Mustafa. Adenosine receptor: Binding of adenosine to the crude plasma membrane fraction of dog coronary and carotid arteries. J. Pharmacol. Exptl. The. 214:496-502, 1980.

21. Mustafa, S. J. and G. Ghai. Effect of Adenosine on the relaxation of coronary arteries at varying pH values. Basic. Res. Cardiology. 76(4): 380-386, 1981.

22. Ghai, G. and S. J. Mustafa. Demonstration of a putative adenosine receptor in rabbit aorta. Blood Vessels. 19:117-125, 1982.

23. Askar, A. O. and S. J. Mustafa. Role of magnesium in the relaxation of coronary arteries by adenosine. Magnesium 2:17-25, 1983.

24. Dar. M. S., S. J. Mustafa and W. R. Wooles. Possible role of adenosine in the CNS effect of ethanol. Life Sci. 33:1363-1374, 1983.

25. Dutta, P., S. J. Mustafa and A. W. Jones. Uptake and efflux of calcium by canine coronary arteries and the action of adenosine. Basic Res. Cardiol. 79:519-530, 1984.

26. Mustafa, S. J. and M. M. Mansour. Relationship between adenosine and H^+ ion in the regulation of coronary flow. Proc. Soc. Exptl. Biol. Med. 176:22-26, 1984.

27. Onwochei, M. O. and S. J. Mustafa. Adenosine and coronary flow during the course of reactive hyperemia. Life Sciences 36:105-112, 1985.

28. Mustafa, S. J. and Askar, A. O. Evidence suggesting an Ra type adenosine receptor in bovine coronary arteries. J. Pharmacol. Exptl. The. 232:49-56, 1985.

29. Mustafa, S. J. and A. O. Askar. Effect of calcium channel blockers on the relaxation of coronary arteries by adenosine. Life Sciences 38:877-885, 1986

30. Nakagawa, Y., M. Gudenzi and S. J. Mustafa. Calcium Blocking Activity of Dilazep in Dog Coronary Artery. Pharmacology 33:148-156, 1986.

31. Y. Nakagawa. M. Gudenzi and S. J. Mustafa. Calcium Blocking Activity of Dilazep and Other Potentiating Compounds in Guinea Pig Atria, Eur. J. Pharmacol. 122:51-58, 1986.

32. Nakagawa, Y. and S. J. Mustafa. Calcium Blocking Effect of Dilazep and Its Metabolites in Dog Coronary Arterial Strips and Guinea Pig Left Atria. Pharmacometrics 31:87-94, 1986.

33. Nakagawa, Y., M. Gudenzi and S. J. Mustafa. Calcium Blocking Activity of Adenosine and its Potentiating Drugs in Guinea Pig Taenia Coli. Pharmacol. Res. Commun. 18(4):349-356, 1986.

34. Dar, M. S., M. Jones, Close, G., S. J. Mustafa and W. R. Wooles. Behavioral interactions of ethanol and methylxanthine. Psychopharmacology 91:1-4, 1987.

35. Driver, A. G., and S. J. Mustafa. Correlation of histamine H_1 receptor function and [^{3}H]mepyramine binding in porcine tracheal tissue. Eur. J. Pharmacol. 139: 287-295, 1987.

36. Williams, S. P., P. D. Shackelford, S. G. Iams and S. J. Mustafa. Endothelium dependent responses to

acetylcholine in estrogen treated spontaneously hypertensive rats. Eur. J. Pharmacol. 145: 205-207, 1988.

37. Nakazawa, M. and S. J. Mustafa. Effects of adenosine and calcium entry blockers on 3,4,diaminopyridine induced rhythmic contractions in dog coronary artery. Eur. J. Pharmacol. 149: 345-349, 1988.

38. Ramagopal, M. V., V. A. Rash and S. J. Mustafa. Antagonism of adenosine-induced relaxation by methylxanthines in coronary artery. Arch. Intern. Pharmacodyn. The. 295: 174-180, 1988.

39. Ramagopal, M. V. and S. J. Mustafa. Effects of adenosine and its analogs on calcium influx in coronary artery. Am. J. Physiol. 255: H1492-H1498, 1988.

40. Nakagawa, Y. and S. J. Mustafa. Relaxing effects of dilazep and lidoflazine in dog cerebral and renal arteries independent of adenosine. Pharmacology. 37: 75-84, 1988.

41. Ramagopal, M. V., Chitwood, R and S. J. Mustafa. Evidence for an A_2 adenosine receptor in human coronary arteries. Eur. J. Pharmacol. 151: 483- 486, 1988.

42. Cushing, D. J., M. M. McConnaughey and S. J. Mustafa. Characterization of adenosine binding sites in bovine testicular tissue using 8-cyclopentyl-1,3-[^{3}H]dipropylxanthine. Eur. J. Pharmacol. 152: 353-356, 1988.

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46. Sabouni, M. H., P. T. Hargittai, E. M. Lieberman and S. J. Mustafa. Evidence for adenosine receptor-mediated hyper polarization in coronary smooth muscle. Am. J. Physiol. 257:H1750-1752, 1989.

47. Sabouni, M. H., D. J. Cushing and S. J. Mustafa. Adenosine receptor- mediated relaxation in coronary artery: Evidence for a guanyl nucleotide- binding regulatory protein involvement. J. Pharmacol. Exp. The. 251:943-948, 1989.

48. Williams, S. P., R. Adams and S. J. Mustafa. The effects of chronic treatment on endothelium-dependent responses in rat thoracic aorta. Alcohol 7:121-127, 1990.

49. Sabouni, M. H., Ramagopal, M. V. and S. J. Mustafa. Relaxation by adenosine and its analogs in potassium contracted human coronary arteries. Naunyn-Schmiedberg's Arch. Pharmacol. 341:388-390, 1990.

50. Ramagopal, M. V. and S. J. Mustafa. Extra cellular calcium-dependent and -independent effects of adenosine in bovine coronary artery. Can. J. Physiol. Pharmacol. 68:608-613, 1990.

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52. Sabouni, M. H., G. L. Brown, A. N. Kotake, F. L. Douglas and S. J. Mustafa. Effects of CGS-15943A on the relaxations produced by adenosine analogs in human blood vessels. Eur. J. Pharmacol. 187:525-530, 1990.

53. Cushing, D. J., G. L. Brown, M. H. Sabouni, and S. J. Mustafa. Adenosine receptor-medicated coronary artery relaxation and cyclic nucleotide production. Am. J. Physiol. 261: H343-H348, 1991.

54. Driver, A. G., C. A. Kukoly, W. J. Metzger and S. J. Mustafa Bronchial challenge with adenosine causes the release of serum neutrophil chemotactic factor in asthma. Am. Rev. Res. Dis., 143: 1002-1007, 1991.

55. Sabouni, M. H., D. J. Cushing, S. R. Makujina and S. J. Mustafa. Inhibition of adenylate cyclase attenuates adenosine receptor-mediated relaxation in coronary artery. J. Pharmacol. Exp. The. 259:508-512, 1991.

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57. Cushing, D. J., S. R. Makujina, M. H. Sabouni and S. J. Mustafa. Involvement of Protein kinase C and phospholipase C in adenosine receptor-mediated relaxation in porcine coronary artery. Am. J. Physiol. 261:H1848-H1854, 1991.

58. Ramagopal, M.V. and S. J. Mustafa. Analysis of the effects of adenosine in skinned bovine coronary artery. J. Pharmacy. Pharmacol. 44:133-135, 1992.

59. Hussain, T. and S. J. Mustafa. Effects of adenosine analogs on cholera toxin induced ADP-ribosylation of G-proteins in coronary artery. Am. J. Physiol. 262:H875-H879, 1992.

60. Makujina, S., M. H. Sabouni, S. Bhatia, F.L. Douglas, and S. J. Mustafa. Vasodilatory effects of adenosine A_2 receptor agonists CGS 21680 and CGS 22492 in human vasculature. Eur. J. Pharm. 221: 243-247, 1992.

61. S. Ali, S. J. Mustafa and W. J. Metzger. Adenosine-induced bronchoconstriction in an allergic rabbit model: antagonism by theophylline aerosol. Agents Actions. 37: 165-167, 1992.

62. S. Ali, S. J. Mustafa and W. J. Metzger. Modification of allergen-induced airway obstruction and bronchial hyper responsiveness in the allergic rabbit by theophylline aerosol. Agents Actions. 37: 168-170, 1992.

63. Hussain, T., and S. J. Mustafa. Regulation of the adenosine receptor system in coronary artery: functional studies and cAMP. Am. J. Physiol.: Heart and Circulatory Physiology. 264: H441-H447, 1993.

64. Albert G. Driver, Cynthia A. Kukoly, Shahid Ali, S. J. Mustafa. Adenosine in bronchoalveolar lavage fluid in asthma. Am. Rev. Res. Dis. 148: 91-97, 1993.

65. Marala, R., K. Ways, and S. J. Mustafa. 2-Chloroadenosine prevents phorbol ester-induced depletion of protein kinase C in porcine coronary artery. Am. J. Physiol.: Heart and Circulatory Physiology. 264: H465-H475, 1993.

66. Marala, R. and S. J. Mustafa. Direct evidence for the coupling of the A_2-adenosine receptor to G_s-protein in bovine brain striatum. J. Pharmacol. Exp. The. 266: 294-300, 1993.

67. Makujina, S. R. and S. J. Mustafa. Adenosine-5'-uronamides rapidly desensitize the A_2 adenosine receptor in coronary artery. J. Cardiovas. Pharmacol. 22: 506-509, 1993.

68. Makujina, S.R., Olsson, R.A., Esinhart, JD., and S.J. Mustafa. Structure-activity relationship of 2-(ar)alkoxyadenosines at the adenosine A_2 receptor in coronary artery. Eur. J. Pharmacol. 243: 35-38, 1993.

69. Hussain, T., and S.J. Mustafa. An in vitro pharmacological model of coronary smooth muscle. J. Pharmacol. & Toxicol. Meth. 30 (2): 111-115, 1993.

70. Hussain, T. and S.J. Mustafa. Regulation of G-proteins by adenosine receptor agonist in coronary artery.

Am. J. Physiol. 266: H1275-H1279, 1994.

71. Abebe, W., Makujina, S.R., and S. J. Mustafa. Adenosine receptor-mediated relaxation of porcine coronary artery in the presence and absence of endothelium. Am. J. Physiol. 266: H2018-H2025, 1994.

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74. Fahim, M., El-Mas, M.M., Abdel-Rahman, A.A., and S.J. Mustafa. Influence of aortic baroreceptor denervation on adenosine receptor-mediated relaxation of isolated rat aorta. Eur. J. Pharmacol. 254: 183-191, 1994.

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76. Makujina, S.R., Olanrewaju, H.A., and S.J. Mustafa. Evidence against the involvement of K^+_{ATP} channels in adenosine A_2 receptor-mediated dilation of epicardial vessels. Am. J. Physiol. 267: H716-H724, 1994.

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78. Olanrewaju, H.A., Hargitti, P., Lieberman, E.A., and S.J. Mustafa. Role of endothelium in hyperpolarization of coronary smooth muscle by adenosine and its analogs. J. Cardiovasc. Pharmacol. 25: 234-239, 1995.

79. Marala, R.B., and S.J. Mustafa. Adenosine analogs prevent phorbol ester-induced protein kinase C depletion in porcine coronary artery via adenosine A_1 receptor mediated dilation of epicardial vessels. Am. J. Physiol. 268: H271-H277, 1995.

80. Driver, A.G., Kukoly, C.A., Spence, P.A., Chitwood, W.R. and S.J. Mustafa. Pericardial Fluid in Ischemic and Valvular Heart Disease. Chest 107: 346-351, 1995.

81. Hussain, T. and S.J. Mustafa. Binding of A_1 Adenosine Receptor Ligand, ^{3}H-8-cyclopentyl-1,3-dipropylxanthine in coronary smooth muscle. Circ. Res. 77: 194-198, 1995.

82. Marala, R. and S.J. Mustafa. Adenosine A_1 Receptor Induced Regulation of Protein Kinase C: Involvement of pertussis toxin sensitive G-Protein(s). Am. J. Physiol. 269: H1619-H1624, 1995.

83. Abebe, W., Hussain, T. and S.J. Mustafa. Role of Nitric Oxide in Adenosine Receptor-Mediated Relaxation of Porcine Coronary Artery. Am. J. Physiol.269: H1672-H1678, 1995.

84. Makujina, S., Abebe, W., Ali, S., and S.J. Mustafa. Validation of everted vasular rings for the simultaneous measurement of calcium and tension. J. Pharmacol. Meth. 34:157-163, 1995.

85. Olanrewaju, H., and S.J. Mustafa. Effects of Adenosine Analogues on Tension and Cytosolic Ca^{2+} in Porcine Coronary Artery. Am. J. Physiol. 270: H134-H141, 1996.

86. Hussain, T., Linden, J., and S. J. Mustafa. ^{125}I-APE Binding to adenosine receptors in coronary artery: photo affinity labeling with ^{125}-azido-APE. J. Pharmacol. Exp. The. 276: 284-288, 1996.

87. Ali, S., Metzger, W.J. and S.J. Mustafa. Effects of CGS-15943 on N^6-cyclopentyladenosine-induced Contraction and Changes in $[Ca^{2+}]_i$ in Airway Smooth Muscle From Dust Mite Sensitive Allergic Rabbits. J. Pharmacol. Exp. The. 278: 639-644, 1996.

88. Olanrewaju, H. A., Lieberman, E. M., Mustafa, S. J. Effect of Ouabain on Adenosine Receptor-Mediated Hyperpolarization in Porcine Coronary Artery Smooth Muscle. Eur. J. Phamacol.. 322: 185-190, 1997.

89. Abebe, W, and Mustafa, S. J. Effect of low-density lipoprotein on adenosine receptor-mediated coronary vasorelaxation *in vitro*. J. Pharmacol. Exp. The. 282:851-857, 1997.

90. Ali, S., W.J. Metzger, Mustafa, S.J. Adenosine receptor-mediated relaxation of rabbit airway smooth muscle: a role for nitric oxide. Am. J. Physiol. 273(Lung Cell. Mol. Physiol. 17):L581-L587, 1997.

91. Marala, Ravi B., and S.J. Mustafa. Immunological Characterization of Adenosine A_2 Receptors in Human Cardiovascular Tissues. J. Pharmacol. Exp. The. 286:1051-1057, 1998.

92. Abebe, Worku and S.J. Mustafa. A_1 adenosine receptor-mediated inositol 1,4,5-trisphosphate generation in allergic rabbit airway smooth muscle. Am. J. Physiol. 275:L990-997, 1998.

93. Olanrewaju, H.A., Marala, R.B. and S.J. Mustafa. Modulation of A_{2A} adenosine receptor(s) by K^+_{ATP} channels in bovine brain striatal membrane. Cell. Biol. International. 23 (7): 519-511, 1999.

94. Nayeem, M.A., H.A. Olnarewaju, and S. J. Mustafa. Chronic salt loading and the expression of adenosine receptor subtypes. Hypertension (Letter to the Editor) 34: e18, 2000.

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98. Fahim, M and S.J. Mustafa. Relaxation of rat aorta by adenosine in diabetes with and without hypertension role of endothelium. Eur. J. Pharmacol. 412: 51-59, 2001.

99. Fahim, M and S.J. Mustafa. Evidence for the presence of A(1) adenosine receptors in the aorta of spontaneously hypertensive rats. Br. J. Pharmacol. 134(8): 1760-1766, 2001.

100. Fahim, M., Hussain, T and S. J. Mustafa. Role of endothelium in adenosine receptor-mediated vasorelaxation in hypertensive rats. Fundamental. Clinical. Pharmacol. 15: 325-334, 2001.

101. Talukder, M.A.H., R. Ray Morrison and S. J. Mustafa. Comparison of the vascular effects of adenosine in isolated mouse heart and aorta. Am. J. Physiol. Heart. Circ. Physiol. 282: H49-H57, 2002.

102. Olanrewaju, H.A. and S.J. Mustafa. Adenosine A_{2A} andA_{2B} receptormediated nitric oxide production in cultured porcine coronary artery endothelial cells. General Pharmacology. The Vascular System. 35: 171-177, 2002.

103. Morrison, Ray. A., M. A. H. Talukder, C. Ledent and S. J. Mustafa. The cardiac effects of adenosine in A_{2A} receptor knockout hearts: Uncovering A_{2B} receptors. Am. J. Physiol. Heart. Circ. Physiol. 282: H-437-

H-444, 2002.

104. Talukder, M. A. H., R. Ray Morrison, Marlene A. Jacobson, Kenneth A. Jacobson, Catherine Ledent and S.J. Mustafa.Targeted deletion of adenosine A_3 receptors augments adenosine-induced coronary flow in isolated mouse heart. Am. J. Physiol. Heart. Circ. Physiol. 282: H-2183-H-2189, 2002.

105. Fan, M. and S. J. Mustafa. Adenosine-mediated airway hyperresponsiveness and lung inflammation in allergic mouse model. Pulmonary Pharmacology and Therapeutics 15: 147-155, 2002.

106. Rekik, M., M. M. El-Mas, S. J. Mustafa and A. A. Abdel-Rahman. Role of endothelial adenosine receptor-mediated vasorelaxation in ethanol-induced hypotension in hypertensive rats. Eur. J. Pharmacol. 452: 205-214, 2002.

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271. Mustafa, SJ. Plenary lecture on "Adenosine Receptor Mediated Cardiovascular Control" at the 60th Indian Pharmaceutical Congress (page #xxxv), 2008 from December 12-14 at Delhi, India.

272. Mahmoud AM, Mustafa SJ, and Mukdadi MO, "Ultrahigh Resolution Quantitative Ultrasound Imaging System for Small Animal Imaging," Proceedings of the ASME International Mechanical Engineering Congress and Exposition, Boston, MA, 2008.

273. Mustafa, SJ. Plenary lecture on "Heterogeneity of Coronary Adenosine Receptors in the Regulation of Coronary Flow" at the International Society for Heart Research-Indian Section (page # 63) from December 13-15, 2008 at Surat, India.

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304. Ponnoth DS and Mustafa SJ. Losartan improves impaired vascular and endothelial responses in mice with allergic asthma FASEB J 27:1107.19, 2013.

305. Zhou X, Teng B, and Mustafa SJ. A1 Adenosine Receptor Negatively Modulates Coronary Reactive Hyperemia via Counteracting A2A-mediated H2O2 Production and Opening of KATP Channel in Isolated Mice Hearts FASEB J 27:1185.1, 2013.

306. Mustafa SJ. Invited lecture on the topic of 'ROLE OF ADENOSINE RECEPTOR SUBTYPES IN CORONARY REACTIVE HYPEREMIA AND ITS SIGNALING' at The 10th International Congress on Coronary Artery Disease (ICCAD 2013) held at Florence, Italy, October 13 -16, 2013**.**

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coronary flow in ex vivo hearts from type I diabetic mice. FASEB J 28:1051.16, 2014.

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318. Pradhan I, Ledent C, Mustafa SJ, Morisseau C and Nayeem MA. High salt diet modulates vascular response in $A_{2A}AR^{+/+}$ and $A_{2A}AR^{-/-}$ mice: Role of sEH, PPARγ, and K_{ATP} channels. FASEB J 29: 943.8, 2015.

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323. Zhichao Zhou, Bunyen Teng, Hicham Labazi, Changyan Sun, Yan Yang, Xiaorong Zeng and S. Jamal Mustafa: High fat diet exacerbates uridine adenosine tretraphosphate (Up4A)-mediated -decrease in coronary flow in atherosclerotic ApoE knockout mice: Role of purinergic P2X1 receptors (P2X1R). AHA Scientific Sessions, Orlando, FL. Circulation: 132: A17340, 2015.

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326. Yadav VR, Zhou Z, Teng B and Mustafa SJ. Role of Adenosine Receptors in Angiotensin II Dependent Hypertension in Mice. Council on Hypertension-American Heart Association, 2016, P104, 2016.

327. Labazi H, Teng B, and Mustafa SJ. Functional changes in vascular reactivity to adenosine receptors activation in type I diabetic mice. FASEB J April 2017 31:673.13.

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329. Vishal YR, Teng B, and Mustafa SJ. Adenosine receptor dependent regulation of vascular tone in L-NAME mouse model of hypertension.FASEB J April 2017 31:lb557

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331. Vishal YR, Zhang HT and Mustafa, SJ. Interaction between Adenosine and β-adrenergic receptors in regulating vascular tone in mouse mesenteric arteries. FASEB J April 2018.

332. Narke D, Siddiquee A, Patel M, Kurade M, Mustafa SJ, Ledent C and Ponnoth DS. Limonene-induced Activation of A_{2A} Adenosine Receptors Reduces Airway Inflammation and Reactivity in a Mouse Model of Asthma**.** FASEB J April 2018.

333. Xie S, Goldsmith WT, Abukabda AB, Bowdridge EC, Garner KL, Mustafa SJ, Castranova V, Nurkiewicz T and Hussain S. Carbon black and ozone co-exposure present novel prospects of disease susceptibility. Society of Toxicology, Baltimore, MD, March 2019.

334. Xie S, Abukabda AB, Goldsmith WT, Mustafa SJ, Nurkiewicz T, Castranova V and Hussain S. Ultrafine particle and ozone co-exposure significantly aggravates lung inflammation and systemic vascular responses. American Thoracic Society, Dallas, TX, May 2019.

335. Rajalingham, S, Patel M, Bhavsar R, Frey K, Ahmad M, Mustafa SJ, Ledent C, Ponnoth DS. Differential Effects of Limonene on Inflammation via Activation of A_{2A} and A_{2B} Adenosine Receptors in Asthma. Experimental Biology, Orlando, FL, April 2019.

CURRICULUM VITAE

Mohammed A. Nayeem, MSc, Ph.D.
Associate Professor,

I. Personal Information

Place of birth:
Hyderabad, past Andhra Pradesh, present Telangana, India.

Work:
Department of Pharmaceutical Sciences, School of Pharmacy
Center for Basic and Translational Stroke Research
Member of Toxicology Working Group and Inhalation Facilities
West Virginia University
Health Science Research Building, Ground floor, Room # G123 & G189
Health Science Center – North, 1 Medical Center Drive, PO Box 9530
Morgantown, WV 26506-9530
304-293-4484-tel; 304-293-2576 – fax;
mnayeem@hsc.wvu.edu
http://pharmacy.hsc.wvu.edu/department-of-pharmaceutical-sciences/faculty-staff/?UserID=43954
http://www.ncbi.nlm.nih.gov/pubmed/?term=Nayeem+MA
http://www.ncbi.nlm.nih.gov/sites/myncbi/mohammed.nayeem.1/bibliography/45750663/public/?sort=date&direction=ascending
https://scholar.google.ru/citations?user=SYQwJY0AAAAJ&hl=ru

II. Education:

Ph.D. (Life Sciences- Biochemistry/ Immunology/ Parasitology/ Diagnosis/ Immunoprophylaxis), Department of Gastroenterology, Osmania General Hospital, Osmania Medical College/Osmania University, Hyderabad, India 1990.
M.Sc. (Life Science- Biochemistry/ Animal Physiology/ Human Physiology) Osmania University, Hyderabad, India 1984.
B.Sc. (Life Sciences- Physical Chemistry/ Inorganic Chemistry/ Organic Chemistry), Osmania University, Hyderabad, India 1980.
(**B.Sc., MSc & Ph.D.** educational credentials have been evaluated through Elizabeth L. Pascarella, senior foreign credentials analyst of International Consultants of Delaware, Inc., Newark, DE, USA).

III. Experiences and Appointments:

IIIa. Academic Appointments and Fellowships

2017- Present — Associate Professor, Pharmaceutical Sciences, Center for Basic and Translational Stroke Research, School of Pharmacy, West Virginia University, working on a project entitled, **"Soluble epoxide hydrolase-derived oxylipins, mitoNEET, and the coronary reactive hyperemia."**

2015- 2017	Assistant Professor (tenure-track), Pharmaceutical Sciences, Center for Basic and Translational Stroke Research, School of Pharmacy, West Virginia University, working on a project entitled **"The Role of CYP epoxygenases, soluble epoxide hydrolase, ω-hydroxylase and their metabolites in the maintenance of vascular tone."**
2009- 2015	Assistant Professor (tenure-track), Physiology & Pharmacology, School of Medicine, West Virginia University, working on a project entitled **"The Role of CYP epoxygenases, soluble epoxide hydrolase, ω-hydroxylase and their metabolites in the maintenance of vascular tone."**
2008- 2009	Research Assistant Professor, Department of Physiology & Pharmacology, School of Medicine, West Virginia University, working on a project entitled **"The Role of CYP450s and their metabolites in the maintenance of vascular tone".**
2005-2008	Research Faculty, Department of Physiology & Pharmacology, School of Medicine, West Virginia University, working on a project entitled **"The Role of CYP450s and their metabolites in the maintenance of vascular tone".**
2004-2005	Research Faculty, Department of Pharmacology & Toxicology, Brody School of Medicine, East Carolina University, a working project entitled **"The Role of CYP450s and their metabolites in the maintenance of vascular tone".**
2003- 2004	Biologist at GS-11, Laboratory of Pharmacology & Chemistry, National Institute Environmental and Health Sciences, National Institutes of Health, worked on projects related to **Chemical metabolism, toxicity, mutagenicity, and carcinogenicity in both CYP2E1 gene knockout and their respective wild-type mice.**
2001- 2003	Research Faculty, Department of Pharmacology & Toxicology, Brody School of Medicine, East Carolina University, working on projects related to **Cellular, Molecular, and Physiological Mechanisms of Delayed Protection in Adult Cardiac Myocytes.**
1998- 2001	Research Associate /Adjunct Instructor, Department of Pharmacology & Toxicology, Brody School of Medicine, East Carolina University, working on projects entitled: **Role of adenosine receptors (A1, A2A, A2B & A3) in coronary endothelial, smooth muscle cells and cardiac myocytes during ischemia.**
1998 – 1998	Research Associate, Department of Internal Medicine, Division of Cardiology, School of Medicine, Medical College of Virginia, Virginia Commonwealth University, working on a research project entitled: **Role of NO in iNOS knockout mice myocytes and K_{ATP} channel in cellular protection during ischemic injury.**
1997 – 1998	Postdoctoral Associate, Department of Internal Medicine, Division of Cardiology, School of Medicine, Medical College of Virginia, Virginia

Commonwealth University, worked on a research project entitled: **Role of A_1 adenosine receptor in transgenic mice myocytes overexpressing A_1 adenosine receptor in resistance to ischemic injury and opening of the K_{ATP} channel.**

1994 – 1997 Postdoctoral NRSA (National Research Service Award) Fellow of NIH, Department of Internal Medicine, Division of Cardiology, School of Medicine, Medical College of Virginia, Virginia Commonwealth University, worked on research projects entitled: 1) **Protective role of glutathione peroxidase in overexpressed glutathione peroxidase transgenic mice myocytes and activation of K_{ATP} channel via NO production during "Lethal" heat shock.**

2) **Ischemic & thermal preconditioning induces "Second window protection" in cultured adult murine cardiac myocytes: A cellular model of cross-tolerance.**

3) **Monophosphoryl lipid A induces cellular protection and the role of K_{ATP} channels during "Lethal" simulated ischemia/heat shock in myocytes.**

4) **K_{ATP} channels mediate the reduction of cellular injury produced by heat shock preconditioning during "Lethal" heat stress/simulated ischemia in cultured myocytes.**

5) **Monophosphoryl lipid A protects adult rat cardiac myocytes with induction of the 72-kD heat shock protein: A cellular model of pharmacologic preconditioning.**

6) **Delayed preconditioning of cultured adult rat cardiac myocytes: role of 70 and 90 kD heat stress proteins.**

IV. Affiliations:

1. Member of American Heart Association, **AHA** (2000-Present)
2. Member of American Physiology Society, **APS** (2000-Present)
3. Member of International Society of Heart Research, **ISHR** (American Section, 2000-Present).
4. Member of American Society for Pharmacology and Experimental Therapeutics, **ASPET** (2009-Present)
5. Member of Microcirculatory Society, **MCS** (2012-Present)
6. Member of the American Association of College of Pharmacy, **AACP** (2015-Present)

V. Awards and Honors:

1. **Nayeem MA**. Role of oxylipins in cardiovascular diseases. Acta Pharmacol Sin. 2018 Jun 7. PMID: 29877318. 2021 *Acta Pharmacologica Sinica,* **Outstanding Contribution Award**, awarded January 06, 2022. (**IF:7.65**).
2. National Research Service Award, NIH 1994-1997.
3. Senior Research Scientist of the Department of Biotechnology, India, 1992-1993.

4. Best paper ESKAYEF award during the 32nd National Conference of the Indian Society of Gastroenterology, India, 1991.
5. University Grants Commission Travel Fellowship to attend the 29th annual conference of the Indian Society of Gastroenterology, India, 1988.

VI. Grant and Fellowship Activity
VI. Principal Investigator / Co-investigator awards (past & present)

6. R01 Grant (1 R01 HL169969-01; NHLBI/NIH; $2,487,284.00), submitted 10/05/2022, starting from 07/01/2023 and ends on 06/30/2028, 30% effort of MA Nayeem as a PI/PD, WJ Geldenhuys (Co-I) & A Hanif (Co-I) in the Project entitled **"Soluble epoxide hydrolase-derived oxylipins, mitoNEET, and the coronary reactive hyperemia," (Pending).**
7. R01 Grant (1 R01 HL169958-01; NHLBI/NIH; $2,563,284.00), submitted 10/05/2022, starting from 07/01/2023 and ends on 06/30/2028, 30% effort of MA Nayeem as a PI/PD, WJ Geldenhuys (Co-I) & A Hanif (Co-I) in the Project entitled **"Regulation of Coronary Reactive Hyperemia, Eicosanoids, and mitoNEET," (Pending).**
8. R01 Grant (R01HL162668-01; NHLBI/NIH; $2,912,993.00), submitted 06/05/2021, starting from 04-01-2022 and ends on 03-31-2027, 25% effort of MA Nayeem as a PI-1, WJ Geldenhuys (PI-2) & A Hanif (Co-I) in the multi-PIs Project entitled **"Cardiovascular Dysfunctions Linked to Endothelial Soluble Epoxide Hydrolase-related Plasma Oxylipins and mitoNEET (Pending).**
9. T32 AG052375-01A1 (NIA/NIH); 1,749,540.00, start date 06/01/2018 and end date 05/31/2022, MA Nayeem as a Preceptor (collaborator) in the Project entitled, **"Predoctoral Training in Stroke and its Co-Morbidities" (FUNDED)**.
10. 1R25HL125453-01A1 (NHLBI/NIH; $580,859.00), starting from 1-1-2017 and 12-31-2021, MA Nayeem as faculty mentor (collaborator) in the Project entitled "**The Hampton University Summer Pharmacy Experiences in Academic Research (SPEAR) Program**" **(FUNDED).**
11. R01 Grant (R01HL114559; NHLBI/NIH; $1,483,360.00), started from 06-01-2013 and ends on 06-30-2021, 30% effort of MA Nayeem as a Principal Investigator in the Project entitled "**Role of Cyp2j-epoxygenases, sEH and PPARs in adenosine-induced vascular response** ", **(FUNDED).**
12. IACUC (animal use) protocol (# 1602000788) submitted and **approved on January 8, 2021, with the expiration date of January 7, 2024**, with the title, "Vascular responses in normal, high or low salt fed mice: role of adenosine receptors, epoxygenases, soluble epoxide hydrolase, and omega-hydroxylase."
13. IRB (human research use) protocol (# 2107367432) submitted and **approved on August 10, 2021, with the expiration date of August 9, 2026,** with the title, "Analyzing Oxylipins profile through LCMS in the blood plasma samples of patients with Cardiovascular Diseases (CVDs) and healthy controls."
14. R01 Grant (R01HL094447-01; NHLBI/NIH; $2,548,902.00, 01-01-2009-12-31-2015) 25% effort of MA Nayeem as a Co-Investigator in the Project entitled **"Role of CYP450s in the Regulation of Vascular Tone through Adenosine Receptors", (FUNDED).**
15. Bridge Grant (West Virginia University), $30,000.00; 03-15-2011-06-30-2012, as MA Nayeem as a Principal Investigator in the project entitled, **"Vascular tone: Role of adenosine A_{2A} receptor and soluble epoxy hydrolase" (FUNDED).**
16. Beginning Grant-in-Aid has submitted to American Heart Association, Mid-Atlantic ($154,000.00; 07-01-1999-06-30-2001)) as MA Nayeem as a Principal Investigator in the Project entitled **"Cellular, Molecular and Physiological Mechanisms of Delayed Cellular Protection in Adult Cardiac Myocytes," (FUNDED)**.

17. Faculty Research Grant has submitted to Brody School of Medicine/East Carolina University ($25,000.00; 07-01-2000-06-30-2001) as MA Nayeem as a Principal Investigator in the Project entitled "**Cellular and Molecular Adaptive Mechanisms in Preconditioned Cardiac Myocytes**" **(Funded).**
18. Faculty Research Startup Grant has submitted to East Carolina University, Brody School of Medicine ($5,000.00; 1999-2000) as MA Nayeem as a Principal Investigator in the Project entitled **"Cellular, Molecular and Physiological Mechanisms of Delayed Cellular Protection in Adult Cardiac Myocytes," (FUNDED)**.
19. Senior Research Fellowship Award of Indian Council of Medical Research, India, on an individual competitive submitted project, 1989-1992 **(FUNDED)**.
20. Junior Research Fellowship Award of Indian Council of Medical Research, India, on an individual competitive submitted project, 1984-1988 **(FUNDED).**

VII. Lectures and Teaching Experience

VIIa. Invited Lectures:

1. Invited talk in iTOX working group of HSC-WVU on the title, "Genetic Polymorphism and the Role of Oxylipins in Cardiovascular Diseases," on March 3rd, 2020.
2. Gave a brief overview of our currently running projects in the lab meeting of the Director of the Center for Basic & Translational Stroke Research, WVU (08/31/2015)
3. Gave WIP seminar in the CCRS, WVU (2011) entitled, "What to do after A1 submission when A2 is not there".
4. Presented in the CIRCS, WVU for COBRE (2007) entitled, "Role of A_1 and A_{2A} adenosine receptors via CYP 450s in salt-enhanced vascular response".
5. Presented in the Department of Physiology & Pharmacology and CIRCS, WVU (2007) entitled, "Role of CYP450s in regulating vascular tone through adenosine".
6. Presented in the Laboratory of Pharmacology and Chemistry, National Toxicology Program, NIEHS, NIH (2004) entitled, "Role of CYP450 (CYP2E1) in cardiotoxicity".
7. Presented in the Department of Pharmacology & Toxicology, Brody School of Medicine, ECU (2003) entitled, "Cellular and Molecular Mechanisms of Delayed Protection in Adult Cardiac Myocytes.
8. Presented in the Department of Pharmacology & Toxicology, Brody School of Medicine, ECU (2002) entitled, "Role of A_1 adenosine receptor in cardiac myocytes during ischemia".
9. Presented in the Department of Pharmacology & Toxicology, Brody School of Medicine, ECU (2001) entitled, "Role of A_1 adenosine receptor in vascular smooth muscle cells against simulated ischemia".
10. Presented in the Department of Pharmacology & Toxicology, Brody School of Medicine, ECU (2000) entitled, "Role of NO and K_{ATP} channels in cellular protection during ischemia-reperfusion.
11. **Nayeem, M.A** and Matherne, G.P. Pharmacological preconditioning induces additive tolerance in the form of 'second window of protection' in transgenic mouse cardiac myocytes over-expressing A_1 adenosine receptors: role of A_1 adenosine receptors and mitochondrial K_{ATP} channels. Accepted for oral presentation in the American Heart Association scientific meeting, 2003.

12. **Nayeem, M.A.,** Matherne P.G., Hess, M.L., and Kukreja, R.C. Myocytes derived from transgenic mice Overexpressing A1 receptor resist ischemic injury via opening KATP channel. Presented in the scientific meeting of American Heart Association, Circulation, 98 (17): I-417-418, 1998.
13. **Nayeem, M.A.,** Matherne P.G., Chelliah, J., Hess, M.L., and Kukreja, R.C. Evidence that opening of KATP channel is the standard mechanism of protection in heat stressed and transgenic mice myocytes overexpressing A1 adenosine receptor. Presented in the scientific meeting of American Heart Association, Circulation, 98 (17): I-344, 1998.
14. Kukreja, R.C., Qian, Y-Z, Bernardo, N.L., **Nayeem, M.A.,** and Chelliah, J. Does heat shock protein 72 play a role in the second window of preconditioning in the heart? A rat study. Presented in the American Heart Association scientific meeting, Circulation, 98 (17): I-621, 1998.
15. **Nayeem, M.A.,** Ho, Y, S., Chelliah, J., Hess, M.L., and Kukreja, R.C. Myocytes Derived From Transgenic Mice Overexpressing Glutathione Peroxidase Resist "Lethal" Heat Shock Injury via Opening of K_{ATP} Channel. Orally presented in the scientific meeting of American Heart Association, Circulation, 96 (8): I-312, 1997.

VIIb. Undergraduate Medical Education, East Carolina University & West Virginia University School of Medicine:

1. Pharmacology PCOL 449/549 course for undergraduates on **Chemical Toxicity,** School of Medicine, West Virginia University (2009-2012)
2. Pharmacology PCOL 449/549 course for undergraduates on **Neurodegenerative Diseases,** School of Medicine, West Virginia University (2009-2012)
3. Small group conferences with **Physician Assistants in the medical pharmacology course** in the Department of Pharmacology & Toxicology, Brody School of Medicine, and East Carolina University (2000-2002).

VIIc. Graduate Medical Education, West Virginia University School of Medicine:

1. ALE-TBL, Pharmacology PCOL 761 course, 2nd-year medical students, titled, **Parkinson Diseases** (2006-2009).
2. ALE-TBL, Pharmacology PCOL 761 course, 2nd-year medical students, titled **Herbal Medicine** (2006-2009).
3. ALE-TBL, Pharmacology PCOL 761 course, 2nd-year medical students, titled **Geriatric Medicine** (2006-2009).
4. ALE-TBL, Pharmacology PCOL 761 course, 2nd-year medical students, titled, **Drug Toxicity** (2006-2009).
5. ALE-TBL, Pharmacology PCOL 761 course, 2nd-year medical students, titled **Cancer Chemotherapy** (2006-2009).
6. ALE-TBL, Pharmacology PCOL 761 course, 2nd-year medical students, titled, **Hypertension** (2006-2009).
7. Pharmacology PCOL 801, **Mucoactive Drugs**, 2nd-year Medical students (2010-2013).
8. Facilitator for Medical Pharmacology **CAM ALE Journal Club**, 2nd-year Medical students(2010-2013).

9. CCMD 730: Human Function for 1st-year Medical students, **HEMODYNAMICS** (2013-2014)**.**

10. CCMD 730: Human Function for 1st-year Medical students, **LOCAL CONTROL OF THE PERIPHERAL CIRCULATION-1** (2013-2014)**.**

11. CCMD 730: Human Function for 1st-year Medical students, **LOCAL CONTROL OF THE PERIPHERAL CIRCULATION-2** (2013-2014)**.**

12. PCOL745: Advanced Cardiovascular Pharmacology for PhD-students on **Endothelium/endothelin.** (2009-2014)**.**

13. CCMD 730: Human Function for 1st-year medical students, **active-learning session (practice questions)** (2013-2014)**.**

VIId. Graduate Pharmacy Education, West Virginia University School of Pharmacy:

1. Introduction to Cardiovascular Diseases-(PHAR 814-Biochemical Pharmacology, 1st-year Pharmacy students (P_1); 4 credit hours)-03/23/2022 (contact 2.0 hour). Note: Sections of PHAR 814 are shared with separate courses (PHAR 809 & PHAR 816) **(2016-present)**.
2. REVIEW/ GROUP ACTIVITY (PHAR 814-Biochemical Pharmacology, 1st-year Pharmacy students (P_1); 4 credit hours)-03/28/2022 (contact 2.0 hours). Note: Sections of PHAR 814 are shared with separate courses (PHAR 809 & PHAR 816) **(2016-present)**.
3. PHAR: 824_CARDIOLOGY_ 5 Credit Hours Course: Practicum 6: Intro to Journal Club -students need to read the article and fill out guidelines before session (quiz)-11/07/2022; 1:00-5:00 PM (contact 4.0 hours) **(2022-present)**.
4. PHAR: 824_CARDIOLOGY_ 5 Credit Hours Course: Practicum 7: Heart Failure Patient Case (quiz)-11/14/2022; 1:00-5:00 PM (contact 4.0 hours) **(2022-present)**.
5. PHAR 824: CARDIAC- for 2nd-year Pharmacy students (P_2), **Pharmacology of Hypertension-I: DIURETICS (2016-2018).**
6. PHAR 824: CARDIAC- for 2nd-year Pharmacy students (P_2), **Pharmacology of Hypertension-I: CALCIUM CHANNEL BLOCKERS (2016-2018).**
7. PHAR 824: CARDIAC- for 2nd-year Pharmacy students (P_2), **Pharmacology of Hypertension-II: RENIN ANGIOTENSIN ALDOSTERONE SYSTEM (2016-2018).**
8. PHAR 824: CARDIAC- for 2nd-year Pharmacy students (P_2), **Pharmacology of Hypertension-II: CENTRAL ALPHA AGONISTS (2016-2018).**
9. PHAR 824: CARDIAC- for 2nd-year Pharmacy students (P_2), **Pharmacology of Hypertension-II: DIRECT VASODILATORS (2016-2018).**
10. PHAR 824: CARDIAC- for 2nd-year Pharmacy students (P_2), **Pharmacology of Ischemic Heart disease drugs (2018-2018).**
11. PHAR 824: CARDIAC- for 2nd-year Pharmacy students (P_2), **Pharmacology of Myocardial Infarction drugs (2018-2021).**
12. PHAR 824: CARDIAC- for 2nd-year Pharmacy students (P_2), **Pharmacology of Chronic Heart Failure drugs (2018-2021).**
13. PHAR 824: CARDIAC- for 2nd-year Pharmacy students (P_2), **Pathophysiology of Acute Decompensated Heart Failure (2018-2021).**

14. PHAR 824: CARDIAC- for 2nd-year Pharmacy students (P_2), **Pharmacology of Acute Decompensated Heart Failure drugs (2018-2021).**
15. PHAR 824: CARDIAC- for 2nd-year Pharmacy students (P_2) EXAM-2 Proctoring (Atherosclerosis through PAD material, 11 sessions)-4:00-5:50 PM on **10/16/2018** at 1909.
16. PHAR 824: CARDIAC- for 2nd-year Pharmacy students (P_2) EXAM-3 Proctoring (Arrhythmia through ACS)-4:00-5:50 PM on **10/30/2018** at 1909.
17. PHAR 824: CARDIAC- for 2nd-year Pharmacy students (P_2) EXAM-4 Proctoring (Heart Failure through Shock)-10:00-11:50 AM on **11/05/2018** at 1901.
18. PHAR 824: CARDIAC- for 2nd-year Pharmacy students (P_2), **Pathophysiology of Stable Ischemic Heart Disease (IHD), 2020-2021.**
19. PHAR 824: CARDIAC- for 2nd-year Pharmacy students (P_2), **Pharmacology /SAR of IHD Drugs: Nitrates, Ranolazine, sublingual PK (refreshment), 2020-2021.**
20. PHAR 824: CARDIAC- for 2nd-year Pharmacy students (P_2), **Pathophysiology of Acute Coronary Syndrome (ACS), 2020-2021.**
21. PHAR 824: CARDIAC- for 2nd-year Pharmacy students (P_2), **Pharmacology and SAR of MI: Other P2Y12, bivalirudin, GPIIb/IIIa inhibitors, 2020-2021.**
22. PHAR 824: CARDIAC- for 2nd-year Pharmacy students (P_2), **Pathophysiology of Chronic Heart Failure (CHF), 2020-2021.**
23. PHAR 824: CARDIAC- for 2nd-year Pharmacy students (P_2), **Pharmacology /SAR of Chronic Heart Failure: Ivabridine, ARNI, 2020-2021.**
24. PHAR 824: CARDIAC- for 2nd-year Pharmacy students (P_2), **Pathophysiology of Acute Decompensated Heart Failure (ADHF), 2020-2021.**
25. PHAR 824: CARDIAC- for 2nd-year Pharmacy students (P_2), **Pharmacology /SAR of Acute Decompensated Heart Failure (ADHF): Dobutamine, PDEi, 2020-2021.**
26. PHAR 824: CARDIAC- for 2nd-year Pharmacy students (P_2), **Pathophysiology of Shock, 2020-2021.**
27. PHAR 824: CARDIAC- for 2nd-year Pharmacy students (P_2), **Pharmacology of Shock: Dopamine, Norepinephrine, Vasopressin, 2020-2021.**
28. PHAR 824: CARDIAC- for 2nd-year Pharmacy students (P_2), **Pathophysiology of Pulmonary Arterial Hypertension (PAH), 2020-2021.**
29. PHAR 824: CARDIAC- for 2nd-year Pharmacy students (P_2), **Pharmacology of Pulmonary Arterial Hypertension (PAH), 2020-2021.**
30. PHAR 825: Nephrology- for 2nd-year Pharmacy students (P_2), **Practicum: Course Overview. 2020.**
31. PHAR 825: Nephrology- for 2nd-year Pharmacy students (P_2), **Practicum: Review of Anatomy and Physiology of the Kidney. 2020.**
32. PHAR 825: Nephrology- for 2nd-year Pharmacy students (P_2), **Pathophysiologic Processes that Affect the Kidney (link to cardiovascular diseases). 2020.**
33. PHAR 825: Nephrology- for 2nd-year Pharmacy students (P_2), **Physiologic changes in kidney disease. 2020.**
34. PHAR 825: Nephrology- for 2nd-year Pharmacy students (P_2), **Pathophysiology of AKI and pharmacology of diuretics in AKI**. **2020.**
35. PHAR 825: Nephrology- for 2nd-year Pharmacy students (P_2), **Practicum: Drug Dosing in Kidney Disease (group assignment with an individual component)**. **2020.**
36. PHAR 825: Nephrology- for 2nd-year Pharmacy students (P_2), **Proctoring Final Exam**. **February 10, 2020, @ 1909.**

VIIe. Graduate Student Education, West Virginia University School of Pharmacy:

1. PHAR 779: Drug Discovery_(3 cr. hrs.) Drug Development in Cardiovascular Diseases-11/15/2022 (contact 1.5 hours), **2022-present**.
2. PHAR 779: Drugs: Bench to Market for Ph.D. students "**CARDIOVASCULAR PHARMACOLOGY-ENDOTHELIUM**," **2016**.
3. PHAR 779: Drugs: Bench to Market for Ph.D. students "**CARDIOVASCULAR PHARMACOLOGY-SOLUBLE EPOXIDE HYDROLASE**," **2016-present**.
4. PHAR 781: Drug Metabolizing Enzymes in the Cardiovascular System: Genetic Polymorphisms and Cardiovascular Diseases-Role of Oxylipins in Diagnosis & Treatment-(PHAR 781: Drug Metabolism, CRN 17642; 3 credit hours. contact 1.5 hours), **2018-present.**

VIIf. Graduate Student Education, West Virginia University School of Pharmacy:

1. BMS 793A Section 007: Pharmaceutical and Pharmacological Sciences (CRN 89440) Introduction to Disciplines in the Biomedical Sciences: Pharmaceutical Research: Cardiovascular Eicosanoids (contact 1.0 hour)-**2022-present**.
2. **Genetic Polymorphisms and the Role of Oxylipins in Cardiovascular Diseases**-Introduction to Disciplines in the Biomedical Sciences-(In BMS 793A Section 007: Pharmaceutical and Pharmacological Sciences CRN 89440)- **12-09-2021**(1.0 hour).
3. PHAR 793 Cardiovascular Physiology and Pharmacology: **Cardiovascular Physiology, 2019-present**.
4. PHAR 793 Cardiovascular Physiology and Pharmacology: **Cardiovascular Pharmacology, 2019-present**.
5. PHAR 793 Cardiovascular Physiology and Pharmacology: **Pathophysiology of cardiovascular diseases, 2019-present**.
6. PHAR 793 Cardiovascular Physiology and Pharmacology: **Role of adenosine receptors in cardiovascular functions, 2019-present**.
7. PHAR 793 Cardiovascular Physiology and Pharmacology: **Role of adenosine A_{2A} receptor and cardiovascular functions, 2019-present**.
8. PHAR 793 Cardiovascular Physiology and Pharmacology: **Role of adenosine A_{2A} receptor and aortic relaxation, 2019-present**.
9. PHAR 793 Cardiovascular Physiology and Pharmacology: **Role of adenosine A_{2A} receptor and coronary reactive hyperemic response, 2019-present**.
10. PHAR 793 Cardiovascular Physiology and Pharmacology: **Role of CYP450-epoxygenases and aortic relaxation, 2019-present**.
11. PHAR 793 Cardiovascular Physiology and Pharmacology: **Role of CYP450-epoxygenases and coronary reactive hyperemic response, 2019-present**.
12. PHAR 793 Cardiovascular Physiology and Pharmacology: **Role of soluble epoxide hydrolase and aortic response**, **2019-present**.
13. PHAR 793 Cardiovascular Physiology and Pharmacology: **Role of soluble epoxide hydrolase and coronary reactive hyperemic response**, **2019-present**.
14. PHAR 793 Cardiovascular Physiology and Pharmacology: **Role of oxygenated polyunsaturated fatty acids (oxylipins) in CVDs, 2019-present**
15. PHAR 793 Cardiovascular Physiology and Pharmacology: **Role of genetic polymorphism in CYP450-epoxygenases and soluble epoxide hydrolase in CVDs, 2019-present**.

VIIg. Graduate Student Education, West Virginia University School of Pharmacy, Rsch. Adv Cardio Jrl Club (Recent Research Advancement in Cardiology Journal Club coordinated by Mohammed Nayeem:

1. PHAR: 793B /SPTP: Rsch Adv Cardio Jrl Club (Recent Research Advancement in Cardiology Journal Club; 1 credit hour, contact 15:00 hour, **Fall, 2021.**
2. PHAR: 793B /SPTP: Rsch Adv Cardio Jrl Club (Recent Research Advancement in Cardiology Journal Club; 1 credit hour, contact 15:00 hour, **Spring, 2022.**
3. PHAR: 793B /SPTP: Rsch Adv Cardio Jrl Club (Recent Research Advancement in Cardiology Journal Club; 1 credit hour, contact 15:00 hour, **Fall, 2022.**
4. PHAR: 793B /SPTP: Rsch Adv Cardio Jrl Club (Recent Research Advancement in Cardiology Journal Club; 1 credit hour, contact 15:00 hour, **Spring, 2023.**

VIIg. Student, Post-Doctoral Fellow And Technician Supervision, and Advising

Ph.D. Students getting mentored / Co-mentored, Supervised, and Advised:

1. Stephanie Agba, PhD. student, Dr. Nayeem serving as a mentor during the 2018-present project entitled, **"*Cyp2j5*- gene Deletion Effects on Acetylcholine and Adenosine-induced Relaxation in Mice: Role of Angiotensin-II, CYP-epoxygenases, and ω-mega-hydroxylase inhibitors."** Stephanie Agba joined in 2018-present (BPS). She rotated in my lab and later joined my lab as a Ph.D. student.
2. Chair of the Ph.D. thesis committee of Stephanie Agba (graduate student) in the Ph.D. Program of Pharmaceutical Sciences at the School of Pharmacy, HSC, WVU (2018-Present).
3. Stephanie Agba (graduate student) in the Ph.D. Program of Pharmaceutical Sciences at the School of Pharmacy, HSC, WVU, defended her thesis proposal on 12/15/2020.
4. PHAR: 796 (Graduate seminar), PHAR: 797 (Research) & Dissertation for Stephanie Agba, Ph.D. student, Mohammed Nayeem, PhD. is serving as a mentor from 2018-present, and Stephanie Agba defended her proposal on 12/15/2020 (First meeting).
5. Member of the Ph.D. thesis committee of Aruvi Vijikumar (graduate student) in the Ph.D. Pharmaceutical Sciences Program at the School of Pharmacy, HSC, WVU (2019-2022).
6. Aruvi Vijikumar (graduate student) in the Ph.D. Program of Pharmaceutical Sciences at the School of Pharmacy, HSC, WVU, defended her thesis proposal on 12/18/2020 (First meeting) & 12/13/2021 (Second meeting).
7. Fabliha Chowdhury, Ph.D. student, Dr. Nayeem, serves as a mentor in 2018, project entitled "Genetic Polymorphism and Plasma Oxylipins in both CVD human cases and mouse models." Fabliha Chowdhury joined in 2018 (BPS). Rotated in my lab.

Ph.D. Students, Mentored / Co-mentored, Supervised, and Advised in the past:

1. PHAR: 796 (Graduate seminar), PHAR: 797 (Research) & PHAR: 798 (Dissertation) for Ahmad Hanif, Ph.D. student, Mohammed Nayeem, Ph.D. served as a mentor during 2012-2017, and Ahmad Hanif graduated in 2017.
2. PHAR: 796 (Graduate seminar), PHAR: 797 (Research) & PHAR: 798 (Dissertation) for Isha Pradhan, Ph.D. student, Mohammed Nayeem, Ph.D. served as a mentor during 2010-2015, and Isha Pradhan graduated in 2015.
3. PHAR: 796 (Graduate seminar), PHAR: 797 (Research) & PHAR: 798 (Dissertation) for Swati Kunduri, Ph.D. student, Mohammed Nayeem, Ph.D. served as a co-mentor or a major advisor during 2009-2014, and Swati Kunduri graduated in 2014.
4. PHAR: 796 (Graduate seminar) & PHAR: 797 (Research) for Alysia Salva Ph.D. student, Mohammed Nayeem, PhD. is, served as a mentor during 2013-2014.

Ph.D. Students graduated under Mohammed Nayeem, Ph.D.:

2012 – 2017; Ahmad Hanif, BSc. Pharm, Ph.D.

- Title of Dissertation: Modulation of Coronary Reactive Hyperemia through Soluble Epoxide Hydrolase: Role of Oxylipins and PPARγ.
- Current Position: Visiting Assistant Professor at the School of Pharmacy, West Virginia University; Morgantown, West Virginia.

2010 – 2015; Isha Pradhan, Ph.D.

- Title of Dissertation: High salt diet-induced alteration in vascular reactivity in wild-type and adenosine A_{2A} receptor null mice.
- Current Position: Postdoctoral Research Fellow at Allegheny General Hospital, Pittsburgh, Pennsylvania.

2009 – 2014; Swati Kunduri, Ph.D.

- Title of Dissertation: Involvement of CypP4504a in Adenosine A_1 receptor-mediated regulation of vascular tone.
- Current Position: Postdoctoral Research Fellow at the University of Cincinnati, Cincinnati, OH.

2013 – 2014; Alysia Salva.

- Title of Dissertation: Relationship between Adenosine A_{2A} receptors and soluble epoxide hydrolase in the regulation of vascular tone.
- Current Position: Gas Quality Engineer at Dominion Transmission, Inc, West Virginia.

Past Visiting Assistant Professor (Saudi Arabia), Mentored, Supervised, and Advised:

2016 – 2017; Maan T. Khayat, Ph.D.

- Project Title: Modulation of Coronary Reactive Hyperemia through Soluble Epoxide Hydrolase and CYP2J2 in Aging Mice: Role of Oxylipins and PPARγ.
- Current Position: Visiting Assistant Professor at the Department of Pharmaceutical Sciences, School of Pharmacy, West Virginia University; Morgantown, West Virginia.

Past Postdoctoral Fellows, Mentored / Co-mentored, Supervised, and Advised:

2016 – 2017; Ahmad Hanif, BSc. Pharm, Ph.D.

- Project Title: Modulation of Coronary Reactive Hyperemia through Soluble Epoxide Hydrolase and CYP2J2: Role of Oxylipins and PPARγ.
- Current Position: Visiting Assistant Professor at the Department of Pharmaceutical Sciences, School of Pharmacy, West Virginia University; Morgantown, West Virginia.

2013 – 2017; Vishal Yadav, Ph.D.

- Project Title: Vascular Endothelial Over-Expression of Soluble Epoxide Hydrolase (Tie-sEH) Enhances Adenosine A_1 receptor-dependent Contraction in Mouse Mesenteric Arteries: Role of ATP-sensitive K^+ Channels.
- Current Position: Postdoctoral Fellow at the Department of Physiology & Pharmacology, School of Medicine, West Virginia University; Morgantown, West Virginia.

2015 – 2016; Ka Lok Hong, Pharm.D., Ph.D.

- Project Title: A comparative study between aortic and resistance (mesenteric) vessel vascular response in relation to adenosine and soluble epoxide hydrolase.
- Current Position: Assistant Professor at Wilkes University, School of Pharmacy, Wilkes Barre, Pennsylvania.

2009 – 2015; Dovenia Ponnoth, Ph.D.
- Project Title: Role of CYP P450s in the Regulation of Vascular Tone through Adenosine Receptors.
- Current Position: Assistant Professor at Long Island University College of Pharmacy, Brooklyn, New York.

2013 – 2015; Shabina Rehman, Ph.D.
- Project Title: A comparative study between thoracic and abdominal aortic vascular response in relation to adenosine and soluble epoxide hydrolase.
- Current Position: Postdoctoral Fellow at the Department of Biochemistry, School of Medicine, West Virginia University, Morgantown, West Virginia.

2010 – 2012; Hassan Talukder, Ph.D.
- Project Title: Role of CYP P450s in the Regulation of Vascular Tone through Adenosine Receptors.
- Current Position: Associate Professor at Dhaka University, Dhaka, Bangladesh.

2010 – 2013; Daniel Fil, Ph.D.
- Project Title: Role of CYP P450s in the Regulation of Vascular Tone through Adenosine Receptors.
- Current Position: Assistant Professor at the University of Gdansk, Poland.

Past Undergraduate & Master Students, Mentored, Supervised, and Advised:

1. Usman Mahmoud (MS student), Exercise Physiology HSC, School of Medicine, WVU (January-December, 2020-2021)
2. Numan Ahmad, Pharmaceutical Sciences, HSC, School of Pharmacy, WVU (2017)
3. Garrett Wilkins, IMBRE-summer student, Pharmaceutical Sciences, School of Pharmacy HSC, WVU (2017)
4. Ramon Yao, Summer Student, Physiology & Pharmacology, School of Medicine, HSC, WVU (Summer 2014)
5. Hastillo-Hess, S.L, Summer Student, Division of Cardiology, Medical College of Virginia, VCU (Summer-1997).

Present PharmD Students, Mentored, Supervised, and Advised:

1. Amr Aboraya PharmD (student mentee from class 2026), Pharmaceutical Sciences, School of Pharmacy HSC, WVU, beginning Fall Semester 2022 (P_1 year) through Fall Semester 2023 (P_2 year).
2. Kallie Delatore, PharmD (student mentee from class 2024), Pharmaceutical Sciences, School of Pharmacy HSC, WVU, beginning Fall Semester 2020 (P_1 year) through Fall Semester 2021 (P_2 year).
3. Garret Jackson, PharmD (student mentee from class 2024), Pharmaceutical Sciences, School of Pharmacy HSC, WVU, beginning Fall Semester 2020 (P_1 year) through Fall Semester 2021 (P_2 year).

4. Gillian Lutz, PharmD (student mentee from class 2024), Pharmaceutical Sciences, School of Pharmacy HSC, WVU, beginning Fall Semester 2020 (P_1 year) through Fall Semester 2021 (P_2 year).
5. Alexander Miller, PharmD (student mentee from class 2024), Pharmaceutical Sciences, School of Pharmacy HSC, WVU, beginning Fall Semester 2020 (P_1 year) through Fall Semester 2021 (P_2 year).
6. Tristan Connard, PharmD (student mentee from class 2025), Pharmaceutical Sciences, School of Pharmacy HSC, WVU, beginning Fall Semester 2021 (P_1 year) through Fall Semester 2022 (P_2 year).
7. Damon Greenwald, PharmD (student mentee from class 2025), Pharmaceutical Sciences, School of Pharmacy HSC, WVU, beginning Fall Semester 2021 (P_1 year) through Fall Semester 2022 (P_2 year).
8. Jacob Hunt, PharmD (student mentee from class 2025), Pharmaceutical Sciences, School of Pharmacy HSC, WVU, beginning Fall Semester 2021 (P_1 year) through Fall Semester 2022 (P_2 year).
9. Tyler Trayter, PharmD (student mentee from class 2025), Pharmaceutical Sciences, School of Pharmacy HSC, WVU, beginning Fall Semester 2021 (P_1 year) through Fall Semester 2022 (P_2 year).

Past PharmD Students, Mentored, Supervised, and Advised:

1. Numan Ahmed, PharmD (P_2 student), Pharmaceutical Sciences, School of Pharmacy HSC, WVU (January-December, 2020).
2. Dianne Techwei, PharmD (P_2 student), Pharmaceutical Sciences, School of Pharmacy HSC, WVU (January-December, 2019).
3. Katlyn Ryan, PharmD (P_2 student), Pharmaceutical Sciences, School of Pharmacy HSC, WVU (January-December, 2019).
4. Hunter Curry, PharmD (P_2 student)s, Pharmaceutical Sciences, School of Pharmacy HSC, WVU (January-December, 2019)
5. Brooke Sanders, PharmD (P_2 student), Pharmaceutical Sciences, School of Pharmacy HSC, WVU (January-December, 2016)
6. Jie Chen, PharmD (P_2 student), Pharmaceutical Sciences, School of Pharmacy HSC, WVU (January-December, 2016)
7. Samantha Nutter, PharmD (P_2 student), Pharmaceutical Sciences, School of Pharmacy HSC, WVU (January-December, 2016)

Past Lab Technicians, Mentored / Co-mentored, Supervised, and Advised:

1. Brandy Wilmoth, High school with Associate degree, Physiology & Pharmacology, West Virginia University (2009-2012 & 2015-2018).
2. Kevin Roush, BS Physiology & Pharmacology, West Virginia University (2009-2011).
3. Kacey Rhodes, BS, Basic Pharmaceutical Sciences, West Virginia University (2018-2019)
4. Sherry Xie, BS, Physiology & Pharmacology, West Virginia University (2011-2019).

VIII. Services:

VIIIa. External Examiner for the International PhD. Thesis Committees Served:

1. External referee for the evaluation of the PhD program of **the Faculty of Medicine, Kuwait University**, **Kuwait** (2021-2026).

2. External examiner for the Ph.D. thesis committee, Institute Physiology, and Pharmacology, **University of Agriculture, Faisalabad, Pakistan** (2020-present)
3. External examiner for the Ph.D. thesis committee, Faculty of Pharmacy and Pharmaceutical Sciences, **University of Alberta, Edmonton, AB, Canada** (2018)

VIIIb. International Research Collaboration Co-Funds (IRCC) Study Section Served:

1. Reviewer for the Grant applications in the International Research Collaboration (Canada & Qatar) Co-Funds (IRCC) Study Section (2018, 2019, 2020) (Reviewed 4 grant applications each year).
2. Reviewer for the Grant applications in the International Research Collaboration (Canada & Qatar) Co-Funds (IRCC) Study Section (2021-present) (Reviewed grant applications).

VIIIc. NHLBI/NIH Study Section Served:

1. Reviewer for the Grant applications in the NATIONAL HEART, LUNG, AND BLOOD INSTITUTE SPECIAL EMPHASIS PANEL ZHL1 CSR - O (M1) CATALYZE PRODUCT DEFINITION STUDY SECTION on 04/01/2020 - 04/01/2020 (Reviewed 10 grant applications).

VIIId. NIEHS/NIH Study Section Served:

1. R13 grant applications Review Committee of NIEHS/NIH-study section (2017) (Reviewed 7 grant applications).

VIIIe. CDC/NIOSH/NIH Study Section Served:

1. CDC/NIOSH External Peer Reviewer for the NIOSH Alice Hamilton Award_2022-2023
2. CDC/NIOSH/HELD-study section-Health Effects Laboratory Division (2016) (Reviewed 1 grant application).

VIIIf. National American Heart Association Study-Section Served:

1. Reviewer for the National American Heart Association Study-Section (2018)

VIIIg. Internal Study Sections Served:

1. Internal Study Section Reviewing Committee Member of Health Science Center, WVU, 2018.
3. WVU CTSI Grant study section; Pilot grants (2015)

VIIIh. International Committees Served:

1. Chairing the whole Cardiology session of the 18th International Winter Eicosanoid Conference, October 15 2020, 9:00 AM – 5:00 PM**.**
2. Judge in the second day poster session of the International Winter Eicosanoid Conference in 2018, organized by the Winter Eicosanoid Organization at HYATT Regency, Inner Harbor Hotel, Baltimore, Maryland, USA
3. Judge in the third day poster session of the International Winter Eicosanoid Conference in 2018, organized by the Winter Eicosanoid Organization at HYATT Regency, Inner Harbor Hotel, Baltimore, Maryland, USA

4. Judge in the First day poster session of the International Winter Eicosanoid Conference in 2016, organized by the Winter Eicosanoid Organization at HYATT Regency, Inner Harbor Hotel, Baltimore, Maryland, USA
5. Judge in the 2nd day poster session of the International Winter Eicosanoid Conference in 2016, organized by the Winter Eicosanoid Organization at HYATT Regency, Inner Harbor Hotel, Baltimore, Maryland, USA
6. Judge in the 3rd day poster session of the International Winter Eicosanoid Conference in 2016, organized by the Winter Eicosanoid Organization at HYATT Regency, Inner Harbor Hotel, Baltimore, Maryland, USA
7. Judge in the First day poster session of the International Winter Eicosanoid Conference in 2014, organized by the Winter Eicosanoid Organization at Marriott Inner Harbor Hotel at Camden Yards, Baltimore, Maryland, USA.
8. Judge in the Third day poster session of the International Winter Eicosanoid Conference in 2014, organized by the Winter Eicosanoid Organization at Marriott Inner Harbor Hotel at Camden Yards, Baltimore, Maryland, USA.

VIIIi. Regional Committees:

1. Judge for poster presentations in **aaps** 2015 Regional Pharmacy Research Forum, held Friday, June 19, 2015 (8:00 AM- 5:30 PM)
2. Judge for poster presentations in West Virginia University – Duquesne University- University of Pittsburgh Pharmaceutical Sciences Research Symposium, 7/20/2018.

VIIIj. Institutional Committees:

1. Reviewer for the **WVU Graduate Education Fellowship Selection** (GFSC. 25 applications), **2021-2022.**
2. Reviewer for the **WVU Foundation Distinguished Doctoral Scholarships and Carl del Signore Foundation Graduate Scholarships** (10 grant applications-2020 & 20 grant applications-2021), **2020-2021.**
3. Reviewer for the **WVU Office Of Graduate Education & Life** 2021 STEM Completion Grant Application (11 grant applications-2021), **2021.**
4. Member of Selection & Interview committee for the 2019 Fall Biomedical Sciences Applicants for Ph.D./MS programs (Biochemistry and Molecular Biology; Cellular and Integrative Physiology; Exercise Physiology; Immunology and Microbial Pathogenesis; Neuroscience; Pharmaceutical and Pharmacological Sciences), WVU, **2017-2019**.
5. Internal Study Section Reviewing Committee Member of Health Science Center, WVU, **2017**.
6. Member of West Virginia Clinical and Translational Institute (WVCTSI) study section for the grant review committee, **2015**.
7. Judge for oral presentations for Clinical and Translational Sciences, Epidemiology in Van Liere Research Day, **2018**
8. Judge for the poster's presentations for Masters Clinical Science C 111-116 at the 54th Van Liere Research Conference, March 22nd, **2019**.
9. Judge for oral presentations for Basic Sciences in Van Liere Research Day, **2018**
10. Judge for poster presentations in Van Liere Research Day, 3/4/**2016**
11. Member of the selection committee for oral presentation in Van Liere Research Day, **2013-2014**

12. Judge for oral presentations for Clinical Sciences in Van Liere Research Day, **2013-2014**
13. Judge for oral presentations for Translational Sciences in Van Liere Research Day, **2013-2014**
14. Judge for oral presentations for Basic Sciences in Van Liere Research Day, **2013-2014**
15. Judge for poster presentations in Van Liere Research Day, **2013-2014**
16. Co-Chair committee of Ph.D. student's (Swati Kunduri) advisory committee as well as co-mentor in School of Pharmacy, **2009-2013**, and she graduated in **2014**
17. Chair committee of Ph.D. student's (Isha Pradhan) advisory committee as well as a mentor in the School of Pharmacy, **2010-2014**, and she defended her Dissertation on 09/02/2014 and graduated in **May 2015**.
18. Chair committee of Ph.D. student's (Ahmad Hanif) advisory committee, as well as a mentor in the School of Pharmacy, **2012-2016**, and he, passed the comprehensive qualifying exam on **09/15/2014** and he defended his proposal defense in **May 2015**, and he defended her Dissertation on **08/23/2016** and graduated in **May 2017**.
19. Chair committee of Ph.D. student's (Alysia Salva) advisory committee, as well asa mentor in School of Pharmacy, **2013-2015**, and we, formed an advisory committee in **2014**
20. Chair committee to organize meetings to get mouse & rat Telemetry system in the Chronic Animal Monitoring Facility (CAMF) **2012-2013**
21. Interview committee member for Ph.D. applicants in the Interdisciplinary Graduate Program related to Biomedical Sciences, WVU-HSC (**02/17/2012**) @ 3065 HSN.
22. Interview committee member for Ph.D. applicants in the Interdisciplinary Graduate Program related to Biomedical Sciences, WVU-HSC (**03/16/2012**) @ 3065 HSN

VIIIk. School of Pharmacy/ School of Medicine Committees:

1. Member of Self-study committee (Physical Facilities and Educational Resources) of School of Pharmacy, **2015-2016**.
2. Member of Self-study committee (Financial Resources) of School of Pharmacy, **2015-2016**.
3. Member of Search Committee-School of pharmacy-WVU for Assistant Professor in the Department of Pharmaceutical Sciences, **2015-2016**.
4. Member of the committee on Academic Integrity, School of Pharmacy-WVU, **2016, 2017, 2018, 2019-2020, 2020-2021**.
5. Member of the Pharmaceutical and Pharmacological Sciences, Graduate Student Performance Review Committee, **2022-2023**.
6. Member of PharmD admission committee for the School of Pharmacy, WVU, **2019-2020, 2020-2021, 2022-2023**.
7. Member of Faculty Evaluation School Wide Committee, **2021-2023**.
8. Interviewed many candidates for the PharmD program in the School of Pharmacy, WVU, **2015, 2016, 2017, 2018, 2019-2020, 2020-2021, and 2022-2023**.
9. Member of Search Committee-School of pharmacy-WVU for Assistant Professor in the Department of Pharmaceutical Sciences, **2020-2021**.
10. Member of Pharmaceuticals Sciences Faculty Evaluation Committee, **2019-**

2020, 2020-2021.

11. Chair of the PhD. thesis committee of Stephanie Agba (graduate student) in the PhD. Program of Pharmaceutical Sciences the School of Pharmacy, HSC, WVU (**2018-Present**).
12. Member of the PhD. thesis committee of Aruvi Vijikumar (graduate student) in the PhD. Program of Pharmaceutical Sciences the School of Pharmacy, HSC, WVU (**2019-2022**).
13. Member of the mentoring program of School of Pharmacy HSC, WVU for the Amr Aboraya PharmD (student mentee from class 2026), beginning Fall Semester 2022 (P_1 year) through Fall Semester 2023 (P_2 year).
14. Member of the mentoring program of School of Pharmacy HSC, WVU for the Kallie Delatore, PharmD (student mentee from class 2024), beginning Fall Semester 2020 (P_1 year) through Fall Semester 2021 (P_2 year).
15. Member of the mentoring program of School of Pharmacy HSC, WVU for the Garret Jackson, PharmD (student mentee from class 2024), beginning Fall Semester 2020 (P_1 year) through Fall Semester 2021 (P_2 year).
16. Member of the mentoring program of School of Pharmacy HSC, WVU for the Gillian Lutz, PharmD (student mentee from class 2024), beginning Fall Semester 2020 (P_1 year) through Fall Semester 2021 (P_2 year).
17. Member of the mentoring program of School of Pharmacy HSC, WVU for the Alexander Miller, PharmD (student mentee from class 2024), beginning Fall Semester 2020 (P_1 year) through Fall Semester 2021 (P_2 year).
18. Member of the mentoring program of School of Pharmacy HSC, WVU for the Tristan Connard, PharmD (student mentee from class 2025), Pharmaceutical Sciences, School of Pharmacy HSC, WVU, beginning Fall Semester 2021 (P_1 year) through Fall Semester 2022 (P_2 year).
19. Member of the mentoring program of School of Pharmacy HSC, WVU for the Damon Greenwald, PharmD (student mentee from class 2025), Pharmaceutical Sciences, School of Pharmacy HSC, WVU, beginning Fall Semester 2021 (P_1 year) through Fall Semester 2022 (P_2 year).
20. Member of the mentoring program of School of Pharmacy HSC, WVU for the Jacob Hunt, PharmD (student mentee from class 2025), Pharmaceutical Sciences, School of Pharmacy HSC, WVU, beginning Fall Semester 2021 (P_1 year) through Fall Semester 2022 (P_2 year).
21. Member of the mentoring program of School of Pharmacy HSC, WVU for the Tyler Trayter, PharmD (student mentee from class 2025), Pharmaceutical Sciences, School of Pharmacy HSC, WVU, beginning Fall Semester 2021 (P_1 year) through Fall Semester 2022 (P_2 year).
22. Member of Selection & Interview committee for the Biomedical Sciences Applicants for Ph.D./MS programs (Biochemistry and Molecular Biology; Cellular and Integrative Physiology; Exercise Physiology; Immunology and Microbial Pathogenesis; Neuroscience; Pharmaceutical and Pharmacological Sciences), WVU, **2017-2019**.
23. Interviewed many candidates personally in my office for the Biomedical Sciences Applicants for Ph.D./MS programs (Biochemistry and Molecular Biology; Cellular and Integrative Physiology; Exercise Physiology; Immunology and Microbial Pathogenesis; Neuroscience; Pharmaceutical and Pharmacological Sciences), WVU, **2017-2019**.
24. Interviewed many candidates on the phone from my office for the Biomedical Sciences Applicants for Ph.D./MS programs (Biochemistry and Molecular Biology; Cellular and Integrative Physiology; Exercise Physiology; Immunology

and Microbial Pathogenesis; Neuroscience; Pharmaceutical and Pharmacological Sciences), WVU, **2017-2019**.

25. Internal Study Section Reviewing Committee Member of Health Science Center, WVU, **2017**.
26. Member of the Strategic Planning Committee for the School of Pharmacy, **2018-present**.

VIIII. Department Committees:

1. Member of Graduate & Research Advisory – Pharmaceutical & Pharmacological Sciences Committee, 2018-present.
2. Member of Pharmaceuticals Sciences Faculty Evaluation Committee, 2015-2016.
3. Member of Pharmaceuticals Sciences Faculty Evaluation Committee, 2019-2020.
4. Member of Pharmaceuticals Sciences Faculty Evaluation Committee, 2020-2021 and 2021-2022.
5. Member of Search Committee-School of pharmacy-WVU for Assistant Professor in the Department of Pharmaceutical Sciences, 2020-2021.
6. Member of Pharmaceutical and Pharmacological Sciences Graduate Student Performance Review Committee, 2021-2022, 2022-2023.
7. Member of Cellular & Integrative Physiology Graduate Program committee, 2011-2015.

VIIIm. Chairing Session/ Judging Sessions: Nationals & International Conferences:

1. Chairing the whole Cardiology session of the 18th International Winter Eicosanoid Conference, October 15 2020, 9:00 AM – 5:00 PM.
2. Judge in the First day poster session of the International Winter Eicosanoid Conference in 2018, organized by the Winter Eicosanoid Organization at HYATT Regency, Inner Harbor Hotel, Baltimore, Maryland, USA
3. Judge in the 2nd day poster session of the International Winter Eicosanoid Conference in 2018, organized by the Winter Eicosanoid Organization at HYATT Regency, Inner Harbor Hotel, Baltimore, Maryland, USA
4. Judge in the 3rd day poster session of the International Winter Eicosanoid Conference in 2018, organized by the Winter Eicosanoid Organization at HYATT Regency, Inner Harbor Hotel, Baltimore, Maryland, USA
5. Judge in the First day poster session of the International Winter Eicosanoid Conference in 2016, organized by the Winter Eicosanoid Organization at HYATT Regency, Inner Harbor Hotel, Baltimore, Maryland, USA
6. Judge in the 2nd day poster session of the International Winter Eicosanoid Conference in 2016, organized by the Winter Eicosanoid Organization at HYATT Regency, Inner Harbor Hotel, Baltimore, Maryland, USA
7. Judge in the 3rd day poster session of the International Winter Eicosanoid Conference in 2016, organized by the Winter Eicosanoid Organization at HYATT Regency, Inner Harbor Hotel, Baltimore, Maryland, USA
8. Judge in the First day poster session of the International Winter Eicosanoid Conference in 2014, organized by the Winter Eicosanoid Organization at Marriott Inner Harbor Hotel at Camden Yards, Baltimore, Maryland, USA.

9. Judge in the Third day poster session of the International Winter Eicosanoid Conference in 2014, organized by the Winter Eicosanoid Organization at Marriott Inner Harbor Hotel at Camden Yards, Baltimore, Maryland, USA.

VIIIn. Consulting Editor:

Integrated Blood Pressure Control, 2015-present

VIIIo. Review Editor:

Review Editor for the Frontiers in Pharmacology, section Translational Pharmacology, 2016-present.

VIIIp. Editorial Boards

1. Member of Editorial Board of the Journal of Pharmacology and Drug Metabolism, 2013-present
2. Member of Editorial Board of the Scholarena Journal of Pharmacy and Pharmacology, 2013-present.
3. Associate Editor of the Journal of Primary Healthcare (OMIC group-Biomedical Journals), 2017-present
4. Member in the peer-review committee of the Integrated Blood Pressure Control, 2013-present
5. Member in the peer-review committee of the Journal of Experimental Pharmacology, 2013-present
6. Member in the peer-review committee of the Journal of Inflammation Research, 2013-present
7. Member in the peer-review committee of the Journal of Receptor, Ligand and Channel Research, 2013-present
8. Member of the Review Editorial Board for the Frontiers in Pharmacology, section Translational Pharmacology, 2016-present.

VIIIq. Worked as Ad hoc Reviewer

1. Reviewer for the manuscripts of American Journal Physiology (Heart and Circulatory Physiology), 2009-present.
2. Reviewer for the manuscripts of American Journal Physiology (Cell-Physiology), 2021-present.
3. Reviewer for the manuscripts of Journal of Molecular and Cellular Cardiology, 2009-present.
4. Reviewer for the manuscripts of Antioxidants & Redox signaling, 2004-present.
5. Reviewer for the manuscripts of Journal of Cellular and Molecular Medicine, 2013-present.
6. Reviewer for the manuscripts of American Journal of Hypertension, 2013-present.
7. Reviewer for the manuscripts of International Journal of Toxicology, 2013-present.
8. Reviewer for the manuscripts of European Journal of Pharmacology, 2012-present.
9. Reviewer for the manuscripts of Nutrition, Metabolism & Cardiovascular Diseases, 2012-present.
10. Reviewer for the manuscripts of Drug Metabolism and Disposition, 2012-present.
11. Reviewer for the manuscripts of Vascular Pharmacology, 2012-present.
12. Reviewer for the manuscripts of Neuropharmacology, 2012-present.

13. Reviewer for the manuscripts of Integrated Blood Pressure Control, 2012-present.
14. Reviewer for the manuscripts of Journal of Cardiovascular Pharmacology, 2014-present.
15. Reviewer for the manuscripts of Naunyn-Schmiedeberg's Archives of Pharmacology, 2015-present.
16. Reviewer for the manuscripts of Journal of Pharmacology and Experimental Therapeutics, 2015-present.
17. Reviewer for the manuscripts of Cellular Physiology and Biochemistry, 2015-present.
18. Reviewer for the manuscripts of Basic & Clinical Pharmacology & Toxicology, 2014-present.
19. Reviewer for the manuscripts of Prostaglandins, Leukotrienes and Essential Fatty Acids, 2016-present.
20. Reviewer for the manuscripts of Canadian Journal of Physiology and Pharmacology, 2015-present.
21. Reviewer for the manuscripts of Molecular Cellular Biochemistry, 2010-present.
22. Reviewer for the manuscripts of Cardiovascular Therapeutics, 2016-present.
23. Reviewer for the manuscripts of Frontiers in Pharmacology, section Translational Pharmacology, 2016-present.
24. Reviewer for the manuscripts of ELSEVIER EDITORIAL SYSTEM Journal: Biochimie, 2018-present.
25. Reviewer for the manuscripts of PROSTAGLANDINS & Other LIPID MEDIATORS's, 2018-present.
26. Reviewer for the manuscripts of Frontiers in Molecular Biosciences, section Cellular Biochemistry, 2020-present.
27. Reviewer for the manuscripts of EMMA, 2020-present.
28. Reviewer for the manuscripts of Molecule, 2019-present.
29. Reviewer for the manuscripts of PLOS ONE, 2019-present.
30. Reviewer for the manuscripts of YMEHY, 2020-present.
31. Reviewer for the manuscripts of Medicina, 2020-present.
32. Reviewer for the manuscripts of BIOCHI, 2020-present.
33. Reviewer for the manuscripts of Frontiers in Pharmacology, section Experimental Pharmacology and Drug Discovery, 2020-present.
34. Reviewer for the manuscripts of JCM, 2020-present.
35. Reviewer for the manuscripts of Frontiers in Neuroscience, section Neuropharmacology, 2020-present.
36. Reviewer for the manuscripts of Journal of Biomolecular Structure & Dynamics, 2020-present.
37. Reviewer for the manuscripts of Cells (MDPI), 2020-present.
38. Reviewer for the manuscripts of Annals of Translational Medicine (ATM), 2020-present.
39. Reviewer for the manuscripts of Chemical Research in Toxicology (tx), 2020-present.
40. Reviewer for the manuscripts of Journal of Pharmaceutical Sciences, 2020-present.
41. Reviewer for the manuscripts of Journal International Immunopharmacology, 2020-present.

Published Articles:

1. **Nayeem MA**, Hanif A, Geldenhuys WJ, Agba S. Crosstalk between adenosine receptors and CYP450-derived oxylipins in the modulation of cardiovascular, including coronary reactive hyperemic response. Pharmacology & Therapeutics, ELSEVIER, publication. 2022 Dec; 240:108213. (**IF: 12.95**)

2. **Nayeem MA**, Geldenhuys WJ, Hanif A. Role of cytochrome P450-epoxygenase and soluble epoxide hydrolase in the regulation of vascular response. Advances in Pharmacology, ELSEVIER, publication. 2023 (in Press). (**IF: 6.14**)
3. **Nayeem MA**, Geldenhuys WJ, Hanif A. Role of cytochrome P450-epoxygenase and soluble epoxide hydrolase in the regulation of vascular response. Advances in Pharmacology, ELSEVIER, publication. 2022 (in Press as a book chapter). Note: my chapter is ranked 6th out of 14 eminent scientists in this area of research in the world.
4. Khayat MT, Hanif A, Geldenhuys WJ, **Nayeem MA.** Adenosine (Purinergic P1) Receptors medicinal chemistry: Potential Role in Cardiovascular Pharmacology. Future Pharmacology, MDPI publication. 2022 (**IF: 7.27**).
5. Agba S, Hanif A, Ledent C, Tilley SL, **Nayeem MA.** Inhibition or deletion of Adenosine A_{2A} receptor enhances acetylcholine-induced vascular response: role of angiotensin-II in $A_{2A}AR^{-/-}$ vs. C57Bl/6 mice. The FASEB Journal, 2022 May; 36, published in all three versions.
6. **Nayeem MA**. Role of oxylipins in cardiovascular diseases. Acta Pharmacol Sin. 2018 Jun 7. PMID: 29877318. 2021 *Acta Pharmacologica Sinica,* Outstanding Contribution Award, awarded January 06, 2022. (**IF:7.65**).
7. Hanif A, Agba S, Ledent C, Tilley SL, Morisseau C, **Nayeem MA.** Adenosine A_{2A} receptor and vascular response: role of soluble epoxide hydrolase, adenosine A_1 receptor and angiotensin-II. Mol Cell Biochem. 2021 May;476(5):1965-1978. doi: 10.1007/s11010-021-04049. PMID: 33511551.
8. Hanif A, Edin ML, Zeldin DC, **Nayeem MA.** *Ephx2*- gene deletion affects acetylcholine-induced relaxation in angiotensin-II infused mice: role of nitric oxide and CYP-epoxygenases. Mol Cell Biochem 2020 Feb; 465(1-2):37-51. PMID: 31797255 PMCID: PMC6957727 (available on 2021-02-01).
9. Agba S, Hanif A, Edin ML, Zeldin DC, **Nayeem MA.** *Cyp2j5*- gene Deletion Affects on Acetylcholine and Adenosine-induced Relaxation in Mice: Role of Angiotensin-II, CYP-epoxygenases and Omega-hydroxylase inhibitors. Frontiers in Pharmacology, Experimental Pharmacology and Drug Discovery. 2020 Feb 5;11:27. doi: 10.3389/fphar.2020.00027. eCollection 2020. PMID: 32116704 PMCID: PMC7014568
10. **Nayeem MA**. Role of oxylipins in cardiovascular diseases. Acta Pharmacol Sin. 2018 Jun 7. PMID: 29877318. 2021 *Acta Pharmacologica Sinica* Outstanding Contribution Award, awarded January 06, 2022.
11. Khayat MT, Hanif A, Geldenhuys WJ, **Nayeem MA.** Adenosine Receptors and Drug Discovery in the Cardiovascular System. 2018. In: Frontiers in Cardiovascular Drug Discovery [Internet]. Bentham Science Publishers Frontiers in Cardiovascular Drug Discovery; [1-49]. https://www.eurekaselect.com/160934/chapter/adenosine-receptors-and-drug-discovery-in-the-cardiovascular-syste
12. Hanif A, Edin ML, Zeldin DC, Morisseau C, Falck JR, Ledent C, Tilley SL, **Nayeem MA**. Reduced coronary reactive hyperemia in mice was reversed by the soluble epoxide hydrolase inhibitor (t-AUCB): Role of adenosine A_{2A} receptor and plasma oxylipins. **Prostaglandins Other Lipid Mediat. 2017 Jul; 131:83-95. 10.1016/j.prostaglandins.2017.09.001. Epub 2017 Sep 7. PMID: 28890385**
13. Khayat MT, **Nayeem MA**. The Role of Adenosine A2A Receptor, CYP450s, and PPARs in the Regulation of Vascular Tone. **Biomed Res Int. 2017: 1720920. doi: 10.1155/2017/1720920. Epub 2017 Aug 13. Review Article**. **PMID: 28884118**
14. Geldenhuys W.J, Hanif A, Yun J, **Nayeem M.A.** Exploring Adenosine Receptor Ligands: Potential Role in the Treatment of Cardiovascular Diseases. **Molecules. 2017 June 1;22 (6). pii: E917. doi: 10.3390/molecules22060917 (Review Article). PMID: 28587166.**
15. Geldenhuys W.J, Khayat M.T, Yun J, **Nayeem M.A.** Drug Delivery and Nanoformulations for the Cardiovascular System. **Res Rev Drug Deliv. 2017 February; 1 (1) 32-40 (Review Article).**

16. Hanif, A., Edin, M.L., Zeldin, D.C., Morisseau, C., Falck, J.R., **Nayeem, M. A.** Vascular Endothelial Overexpression of Human CYP2J2 (Tie2-CYP2J2 Tr) Modulates Cardiac Oxylipin Profiles and Enhances Coronary Reactive Hyperemia in Mice. **PLoS One. 2017 Mar 22;12 (3):e0174137. doi: 10.1371/journal.pone.0174137. PMID: 28328948.**
17. Hanif, A., Edin, M.L., Zeldin, D.C., Morisseau, C., Falck, J.R., **Nayeem, M. A.** Vascular Endothelial Over-Expression of Soluble Epoxide Hydrolase (Tie2-sEH Tr) Attenuates Coronary Reactive Hyperemia: Role of Oxylipins and ω-Hydroxylases. **PLoS One. 2017 Jan 5;12(1):e0169584. doi: 10.1371/journal.pone.0169584. eCollection 2017.** PMID: 28056085.
18. Hanif, A., Edin, M.L., Zeldin, D.C., Morisseau, C, **Nayeem, M. A.** Deletion of Soluble Epoxide Hydrolase Enhances Coronary Reactive Hyperemia in Isolated Mouse Heart. **Am J Physiol Regul Integr Comp Physiol. 2016 Aug 3:ajpregu.00237.2016. doi: 10.1152/ajpregu.00237.2016. [Epub ahead of print].** PMID: 27488890
19. Hanif, A., Edin, M.L., Zeldin, D.C., Morisseau, C, **Nayeem, M. A.** Effect of Soluble Epoxide Hydrolase on the Modulation of Coronary Reactive Hyperemia: Role of Oxylipins and PPARγ. **PLoS One. 2016 Sep 1; 11 (9):e0162147. doi: 10.1371/journal.pone.0162147. eCollection 2016.** PMID: 27583776
20. Yadav, V.R., Hong, K.L., Zeldin, D.C, **Nayeem, M. A.** Vascular endothelial over-expression of soluble epoxide hydrolase (Tie2-sEH) enhances adenosine A1 receptor-dependent contraction in mouse mesenteric arteries: role of ATP-sensitive K+ channels. **Mol Cell Biochem. 2016 Sep 15. [Epub ahead of print].** PMID:27629787
21. Pradhan, I., Ledent, C., Mustafa, S.J., Morisseau, C and **Nayeem, M. A.** High salt diet modulates vascular response in A2AAR+/+ and A2AAR-/- mice: Role of sEH, PPARγ, and KATP channels. **Molecular Cellular Biochemistry, 2015 Jun; 404 (1-2):87-96. doi: 10.1007/s11010-015-2368-4. Epub 2015 Mar 5.** PMID: 25739357
22. Yadav, YR., **Nayeem, MA,** Tilley, SL., and Mustafa, SJ. Angiotensin II stimulation alters vasomotor response to adenosine in mouse mesenteric artery: Role for A_1 and A_{2B} adenosine receptors. **British Journal of Pharmacology, 2015 Oct; 172(20):4959-69. doi: 10.1111/bph.13265.** PMID: 26227882
23. Pradhan, I., Mustafa, S.J., Ledent, C., Falck, J.R., Zeldin, D.C and **Nayeem, M. A.** High salt diet exacerbates vascular contraction in the absence of adenosine A_2A receptor. **Journal of Cardiovascular Pharmacology, 2014 May; 63 (5):385-94. doi: 10.1097/FJC.0000000000000058**. PMID:24390173
24. **Nayeem, M.A.,** Pradhan, I., Mustafa, S.J., Falck, J.R., Morisseau, C and Zeldin, D.C. Adenosine A2A receptor modulates vascular response in soluble epoxide hydrolase-null mice through CYP-epoxygenases and PPARγ. **Am J Physiol Regul Integr Comp Physiol. 2013 Jan; 304(1):R23-32.** PMID: 23152114**.**
25. Kunduri, S.S., Mustafa, S.J., Ponnoth, D.S., Tilley, S.L., Dick, G.M and **Nayeem, M.A.** Adenosine A_1 receptors link to smooth muscle contraction via cyp4a, PKC-α and ERK1/2. **The Journal of Cardiovascular Pharmacology. 2013 Jul; 62(1):78-83.** PMID: 23519140.
26. Kunduri, S.S., Dick, G.M., **Nayeem, M.A** and Mustafa, S.J. Adenosine A1 receptor signaling inhibits BK channels through a PKCα-dependent mechanism in mouse aortic smooth muscle. **Physiological Reports, 2013 Sep 1; 1 (3).pii:e00037.** PMID: 23977428.
27. Ponnoth, D.S., **Nayeem, M.A.,** Tilley, S. L., Ledent, C and Mustafa, S.J. CYP-epoxygenases contributes to A2A receptor-mediated aortic relaxation via sarcolemmal KATP channels. **Am J Physiol Regul Integr Comp Physiol. 2012 Nov 15; 303(10):R1003-10.** PMID: 23019210.
28. Ponnoth, D.S., **Nayeem, M.A.,** Kunduri. S.S., Tilley, S., Zeldin, D.C., Ledent, C., and Mustafa, S.J. Role of ω-hydroxylase in adenosine A2A receptor-mediated regulation of

vascular tone through MAP kinase using knockout mice. **Am J Physiol Regul Integr Comp Physiol. 2012 Feb 15; 302(4):R400-408.** PMID: 22160543

29. **Nayeem MA**, Zeldin DC, Boegehold MA, and Falck JR. Salt modulates vascular response through adenosine A (2A) receptor in eNOS-null mice: role of CYP450 epoxygenase and soluble epoxide hydrolase**. Mol Cell Biochem 350:101-111, 2011**. PMID: 21161333
30. **Nayeem, M.A.,** Zeldin, D.C. Boegehold, M.A. Morisseau, C. Marowsky, A. Ponnoth, D.S. Roush, K.P and Falck, J.R. Modulation by salt intake of the vascular response mediated through adenosine A_{2A} receptor: role of CYP epoxygenase and soluble epoxide hydrolase. **Am J Physiol Regul Integr Comp Physiol. 2010 Jul; 299(1):R325-333.** PMID: 20427718
31. **Nayeem, M.A.,** Ponnoth, D.S, Boegehold, M.A. Zeldin, D. C, Falck, J.R. and Mustafa, S.J. Adenosine A2A receptor mediated aortic relaxation in mice fed high salt diet: role of CYP epoxygenase**. Am J Physiol Regul Integr Comp Physiol. 2009 Mar; 296(3):R567-74.** PMID: 19109366
32. **Nayeem, M.A.,** Falck, J.R. Ledent, C. Ponnoth, D.S. Poloyac, S. M. Zeldin, D.C, Ansari, H.R and Mustafa, S.J. CYP epoxygenase-mediated relaxation in aorta through adenosine A2A receptor using A2A AR-/- and A2A AR+/+ mice. **Am J Physiol Heart Circ Physiol.** 2008 Nov; 295(5):H2068-78. PMID:18805895
33. **Nayeem, M.A.,** Sub-lethal simulated ischemia promotes delayed resistance against sustained simulated ischemic injury *via* ATP-sensitive (K^+) channels in murine myocytes: role of PKC & iNOS. **Antioxid Redox Signal. 2004 Apr; 6 (2):375-83.** PMID:15025939
34. **Nayeem, M.A.,** and Mustafa S.J. Ischemic & pharmacological induction of delayed cellular protection in iNOS gene disrupted mice myocytes. **Pol J Pharmacol. 2003 Jan-Feb; 55 (1):73-9.** PMID:12856829
35. **Nayeem, M.A.,** Matherne G.P and Mustafa S.J. Ischemic & pharmacological preconditioning further induces delayed cellular protection in A_1AR over-expressed transgenic mice myocytes: role of A_1AR, iNOS & K_{ATP} channels. **Naunyn Schmiedebergs Arch Pharmacol. 2003 Mar; 367 (3):219-26. Epub 2003 Feb 25.** PMID:12644893
36. **Nayeem, M.A** Ethanol induced delayed cellular protection in mouse cardiac myocytes: role of inducible nitric oxide synthase. **Pol J Pharmacol. 2003 Jul-Aug; 55 (4):595-602.** PMID:14581718
37. **Nayeem, M.A.,** and Mustafa S.J. Regulation of Protein Kinase C by A_1 Adenosine Receptor in Porcine Coronary Smooth Muscle Cells. **Vascul Pharmacol. 2002 Jul; 39 (1-2):47-54.** PMID:12616990
38. **Nayeem, M.A.,** and Mustafa S.J. Mechanisms of Delayed Preconditioning by A_1adenosine receptor in Porcine Coronary Smooth Muscle Cells. **Pol J Pharmacol. 2002 Sep-Oct; 54 (5):443-53.** PMID:12593531
39. **Nayeem, M.A.,** Olanrewaju, H.A., and Mustafa S.J. Chronic Salt Loading and the Expression of Adenosine Receptor Subtypes**. Hypertension. 1999 Dec; 34 (6):e18-9.** PMID:10601139
40. Qian, Y-Z, Bernardo, N.L., **Nayeem, M.A.,** Chelliah, J and Kukreja, R.C. Induction of 72-kDa heat shock protein does not produce second window of ischemic preconditioning in rat heart. **Am J Physiol. 1999 Jan; 276 (1 Pt 2):H224-34.** PMID: 9887036
41. Xi, L., Chelliah, J., **Nayeem, M.A.,** Levasseur, J.E., Hess, M.L and Kukreja, R.C. Whole Body Heat Shock Fails to Protect Mouse Heart Against Ischemia/Reperfusion Injury: Lack of Correlation for 72 kD a Heat Shock Protein in Myocardial Protection. **J Mol Cell Cardiol. 1998 Nov; 30 (11):2213-27.** PMID: 9925359
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3. Ahmad Hanif, Mathew L. Edin, Darryl C. Zeldin, Christophe Morisseau, John R. Falck and **Nayeem, M. A.** Vascular Endothelial Over-Expression of Soluble Epoxide Hydrolase (Tie2-sEH Tr) Attenuates Coronary Reactive Hyperemia: Role of Oxylipins and ω-Hydroxylases. **FASEB J April 2017 31:999.9.**
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2. Agba S, Hanif A, Ledent C, Tilley SL, **Nayeem MA.** Inhibition or deletion of Adenosine A_{2A} receptor enhances acetylcholine-induced vascular response: role of angiotensin-II in $A_{2A}AR^{-/-}$ vs. C57Bl/6 mice. Presented in the **WVCTSI research day,** April, 22nd 2022, at West Virginia University, Morgantown, WV 26506.
3. Stephanie Agba, Ahmad Hanif, Catherine Ledent, Stephan Tilley, Christophe Morisseau and **Nayeem MA.** Adenosine A_{2A} receptor and vascular response: role of soluble epoxide hydrolase, adenosine A_1 receptor and angiotensin-II. Presented in the **Division of Cardiovascular Pharmacology, American Society for Pharmacology and Experimental Therapeutics in Experimental Biology May, 2021 Meeting @ zoom.**
4. Ahmad Hanif, Darryl C. Zeldin, Stephanie Agba and **Nayeem, M.A.** Deletion of Soluble Epoxide Hydrolase Enhances Coronary Reactive Hyperemia in Aging Mice and Partially Protects from Angiotensin II Effects during Aging. Presented in the **54th Van Liere Research Conference, March 21-22, 2019 at WVU Health Sciences Center.**
5. Ahmad Hanif, Mathew L. Edin, Darryl C. Zeldin, Christophe Morisseau, John R. Falck and **Nayeem, M. A.** Vascular Endothelial Over-Expression of Soluble Epoxide Hydrolase (Tie2-sEH Tr) Attenuates Coronary Reactive Hyperemia: Role of Oxylipins and ω-Hydroxylases. Presented in the **Division of Cardiovascular Pharmacology, American Society for Pharmacology and Experimental Therapeutics in Experimental Biology April, 2017 Meeting @ Chicago, IL.**
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14. Vishal R. Yadav, Darryl C. Zeldin1, S. Jamal Mustafa, Sherry Xie and **Nayeem, M.A.** Soluble epoxide hydrolase modulates adenosine receptor-induced vascular response in mouse mesenteric arteries. Presented in the **Division of Cardiovascular Pharmacology, American Society for Pharmacology and Experimental Therapeutics in Experimental Biology 2015 Meeting @ Boston, MA.**
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78. **Nayeem, M.A.,** Habibullah, C.M., Ishaq, M., and Begum, S. Detection of Autoreactive Antibodies to Serum IgA in Amoebic Patients. **Annual Conference of Indian Society of Gastroenterology in 1990.**
79. **Nayeem, M.A.,** Habibullah, C.M., and Ishaq, M. Increased Release of Leukocyte Migration Inhibition Factor by Amoebic Membrane Glycoprotein Stimulated T-Lymphocytes in Amoebic Liver Abscess: An In Vitro Assessment. **Annual Conference of Indian Society of Gastroenterology in 1989.**
80. **Nayeem, M.A.,** Habibullah, C.M., Saleem, Y., Ishaq, M., and Quadri, G.S.A. Role of Histamine and Glucose in Vitro Encystation and Excystation of Entamoeba histolytica. **Annual Conference of Indian Society of Gastroenterology in 1988.**
81. **Nayeem, M.A.,** Saleem, Y., Ishaq, M., and Habibullah, C.M. Amoebic Membrane Glycoproteins Play a More Important Role Than Whole Amoebic Lysate in ALA Cases: An In Vitro Assessment of LMIF. **Annual Conference of Indian Immunology Society in 1987.**
82. **Nayeem, M.A.,** Saleem, Y., Ishaq, M. Mateen, M.A., and Habibullah, C.M. Protective Role of Surface and Cytoplasmic Membranes of Entamoeba histolytica in Experimental Amoebiasis. **Annual Conference of Indian Society of Gastroenterology in 1987.**
83. **Nayeem, M.A.,** Ishaq, M., Habibullah, C.M., Mateen, M.A., and Quadri, G.S.A. Amoeba Immobilization and Agglutination Tests for the Diagnosis of Amoebiasis**. Annual Conference of Indian Society of Gastroenterology in 1986.**
84. Quadri, G.S.A., Babu, S., Sudhakar, P., **Nayeem, M.A.,** and Habibullah, C.M. Iron Dynamics in Amoebic Liver Abscess Patients. **Annual Conference of Indian Society of Gastroenterology in 1985.**
85. Quadri, G.S.A., Habibullah, C.M., Ishaq, M., Mateen, M.A., and **Nayeem, M.A.** Assessment of Cell-Mediated Immune Response in Amoebiasis with Agarose Leukocyte Migration Inhibition Test. **Annual Conference of Indian Immunology Society in 1984.**

Attended National & International Conferences:

1. 17th International Conference Bioactive Lipids in Cancer, Inflammation and Related Diseases October 30- November 2, 2022, New Orleans.
2. Experimental Biology Meeting, Division of Cardiovascular Pharmacology, American Society for Pharmacology and Experimental Therapeutics. Inhibition or deletion of Adenosine A_{2A} receptor enhances acetylcholine-induced vascular response: role of angiotensin-II in $A_{2A}AR^{-/-}$ vs. C57Bl/6 mice. Presented in the Division of Cardiovascular Pharmacology, American Society for Pharmacology and Experimental Therapeutics in Experimental Biology, 2022, April, 2-5, 2022, Philadelphia.
3. Agba S, Hanif A, Ledent C, Tilley SL, **Nayeem MA.** Inhibition or deletion of Adenosine A_{2A} receptor enhances acetylcholine-induced vascular response: role of angiotensin-II in $A_{2A}AR^{-/-}$ vs. C57Bl/6 mice. Presented in the **WVCTSI research day,** April, 22nd 2022, at West Virginia University, Morgantown, WV 26506.

4. Experimental Biology Meeting, Division of Cardiovascular Pharmacology, American Society for Pharmacology and Experimental Therapeutics, April 27-30, 2021. Meeting @ zoom.
5. Seventeenth International Conference on Endothelin (ET-17), American Physiological Society, October 4-7, 2021. Meeting @ zoom.
6. American Heart Association, Council of Hypertension (HTN21), September 27-30, 2021. Meeting @ zoom.
7. Chairing the whole Cardiology session of the 18th International Winter Eicosanoid Conference, October 15 2020, 9:00 AM – 5:00 PM.
8. The 54th Van Liere Research Conference, March 21-22, 2019 at WVU Health Sciences Center.
9. Judge in the First day poster session of the International Winter Eicosanoid Conference in March, 2018, organized by the Winter Eicosanoid Organization at HYATT Regency, Inner Harbor Hotel, Baltimore, Maryland, USA
10. Judge in the 2nd day poster session of the International Winter Eicosanoid Conference in March, 2018, organized by the Winter Eicosanoid Organization at HYATT Regency, Inner Harbor Hotel, Baltimore, Maryland, USA
11. Judge in the 3rd day poster session of the International Winter Eicosanoid Conference in March, 2018, organized by the Winter Eicosanoid Organization at HYATT Regency, Inner Harbor Hotel, Baltimore, Maryland, USA
12. Division of Cardiovascular Pharmacology, American Society for Pharmacology and Experimental Therapeutics in Experimental Biology April, 22-26, 2017 Meeting in Chicago at the McCormick Place Convention Center, Chicago, IL.
13. Judge in the First day poster session of the International Winter Eicosanoid Conference in March, 2016, organized by the Winter Eicosanoid Organization at HYATT Regency, Inner Harbor Hotel, Baltimore, Maryland, USA
14. Judge in the 2nd day poster session of the International Winter Eicosanoid Conference in March, 2016, organized by the Winter Eicosanoid Organization at HYATT Regency, Inner Harbor Hotel, Baltimore, Maryland, USA
15. Judge in the 3rd day poster session of the International Winter Eicosanoid Conference in March, 2016, organized by the Winter Eicosanoid Organization at HYATT Regency, Inner Harbor Hotel, Baltimore, Maryland, USA
16. Division of Cardiovascular Pharmacology, American Society for Pharmacology and Experimental Therapeutics in Experimental Biology April 2-6, 2016 Meeting @ San Diego, CA.
17. Division of Cardiovascular Pharmacology, American Society for Pharmacology and Experimental Therapeutics in Experimental Biology, March 28- April 1, 2015 Meeting @ Boston, MA.
18. Judge in the First day poster session of the International Winter Eicosanoid Conference in March, 2014, organized by the Winter Eicosanoid Organization at Marriott Inner Harbor Hotel at Camden Yards, Baltimore, Maryland, USA.
19. Judge in the Third day poster session of the International Winter Eicosanoid Conference in March, 2014, organized by the Winter Eicosanoid Organization at Marriott Inner Harbor Hotel at Camden Yards, Baltimore, Maryland, USA.
20. Division of Cardiovascular Pharmacology, American Society for Pharmacology and Experimental Therapeutics in Experimental Biology, April 26-30, 2014. San Diego, CA.
21. Division of Cardiovascular Pharmacology, American Society for Pharmacology and Experimental Therapeutics in Experimental Biology, April 20-24, 2013. Boston, MA.
22. Division of Cardiovascular Pharmacology, American Society for Pharmacology and Experimental Therapeutics in Experimental Biology, April 21-25, 2012. San Diego, CA.

23. Division of Cardiovascular Pharmacology, American Society for Pharmacology and Experimental Therapeutics in Experimental Biology. Washington, DC (April 9–13, 2011).
24. Division of Cardiovascular Pharmacology, American Society for Pharmacology and Experimental Therapeutics in Experimental Biology Anaheim, CA (April 24–28, 2010).
25. Division of Cardiovascular Pharmacology, American Society for Pharmacology and Experimental Therapeutics in Experimental Biology New Orleans, LA (April 18–22, 2009).
26. Division of Cardiovascular Pharmacology, American Society for Pharmacology and Experimental Therapeutics in Experimental Biology. ASPET's Centennial Meeting- San Diego, CA (April 5–9, 2008).
27. Division of Cardiovascular Pharmacology, American Society for Pharmacology and Experimental Therapeutics in Experimental Biology Washington, DC (April 28–May 5, 2007).
28. The 9th Annual Winter Eicosanoid Conference in 2007 organized by the Winter Eicosanoid Organization at HYATT Regency, Inner Harbor Hotel, Baltimore, Maryland, U
29. The Annual HSC Research Day & Van Liere Convocation in March 2007.
30. American Heart Association, 2003. November 9-12, 2003,
31. Division of Cardiovascular Pharmacology, American Society for Pharmacology and Experimental Therapeutics in Experimental Biology-Orlando, Florida, USA. March 31-April 4, 2001.
32. 73rd Annual Scientific Sessions of the American Heart Association. New Orleans, LA, USA, November 12-15, 2000
33. Annual Conference of International Society of Heart Research in Louisville, KY 2000.
34. Annual Conference of Experimental Biology 2000 April 15–18, 2000 San Diego, Calif.
35. American Heart Association 71st scientific sessions. Dallas, Texas, USA. November 8-11, 1998.
36. Annual Conference of International Society of Heart Research in 1998. Vancouver, Canada.
37. Annual Conference of International Society of Heart Research Ann Arber, MI, 1997.
38. Annual Scientific Conference of American Heart Association, Anaheim, CA in 1997.
39. 14th Annual D T W S R Sciences Poster Presentation in 1997.
40. Division of Cardiovascular Pharmacology, American Society for Pharmacology and Experimental Therapeutics in Experimental Biology in 1996.
41. 12th Annual D T W S R Sciences Poster Presentation, MCV/VCU, Richmond, VA, in 1995.
42. Annual Conference of Indian Immunology Society, Bangalore, India, in 1993.
43. Annual Conference of Indian Society of Gastroenterology, India, in 1992.
44. Annual Conference of Indian Society of Gastroenterology, India, in 1991.
45. Society of Amoebiasis Conference, India, in 1990.
46. Annual Conference of Indian Immunology Society, India, in 1990.
47. Annual Conference of Indian Society of Gastroenterology, India, in 1990.
48. Annual Conference of Indian Society of Gastroenterology, India, in 1989.
49. Annual Conference of Indian Society of Gastroenterology, India, in 1988.
50. Annual Conference of Indian Immunology Society, India, in 1987.
51. Annual Conference of Indian Society of Gastroenterology, India, in 1987.
52. Annual Conference of Indian Society of Gastroenterology, India, in 1986.
53. Annual Conference of Indian Society of Gastroenterology, India, in 1985.
54. Annual Conference of Indian Immunology Society, India, in 1984.

Timothy Robert Nurkiewicz, Ph.D.

Robert C. Byrd Health Sciences Center
Department of Physiology & Pharmacology
64 Medical Center Drive
West Virginia University
Morgantown, WV 26506-9229

Office: (304) 293-7328
Lab: (304) 293-0193
Cell: (304) 692-1703
FAX: (304) 293-3850
Email: tnurkiewicz@hsc.wvu.edu



Education

Pennsylvania State University (1990)	College: Health and Human Development Department: *Exercise and Sport Science* Degree Conferred: B.S.
West Virginia University (1992)	School: Physical Education Department: *Exercise Physiology* Degree Conferred: M.S.
West Virginia University (1992-1995)	School: Physical Education Department: *Exercise Physiology* Degree Pursued: Ed.D.
West Virginia University (1995-1999)	School: Medicine Department: *Physiology* Degree Conferred: Ph.D.

Academic & Professional Appointments/History

1992	Allegheny General Hospital	*Cardio-pulmonary Rehabilitation Exercise Specialist*
1992 - 1995	West Virginia University	*Graduate Research Assistant, Doctoral Candidate* WVU Human Performance Laboratory & Department of Exercise Physiology
1995 - 1999	West Virginia University	*Graduate Research Assistant, Doctoral Candidate* Department of Physiology Advisor: Matthew A. Boegehold, Ph.D.
1999 - 2001	Texas A&M University	*Post-Doctoral Research Associate* Department of Medical Physiology Sponsor: Michael J. Davis, Ph.D.
2001 - 2002	West Virginia University	*Post-Doctoral Fellow* Department of Physiology & Pharmacology Sponsor: Matthew A. Boegehold, Ph.D.
2002 - 2006	West Virginia University	*Research Assistant Professor* Department of Physiology & Pharmacology
2006 - 2007	West Virginia University	*Assistant Professor* Department of Pediatrics
2007 - 2009	West Virginia University	*Assistant Professor* Department of Physiology & Pharmacology (joint in the Department of Neurobiology and Anatomy)

2008 - present	Centers for Disease Control / National Institute for Occupational Safety and Health	*Guest Researcher* Heath Effects Laboratory Division / Pathology and Physiology Research Branch
2008 - present	West Virginia University	*Director* Inhalation Exposure Facilities
2009 - 2015	West Virginia University	*Associate Professor (tenured)* Department of Physiology & Pharmacology (primary appointment) Department of Occupational & Environmental Health Sciences (adjunct)
2012 - 2019	West Virginia University	*Associate Chair for Research* Department of Physiology & Pharmacology
2012 - 2014	West Virginia University	*Research Theme Leader, "Xenobiotic Toxicology"* Center for Cardiovascular and Respiratory Sciences
2014 - 2016	West Virginia University	*Faculty Representative* University Industry Demonstration of Partnership
2015 - present	West Virginia University	*Professor* Department of Physiology & Pharmacology
2016 – 2019	West Virginia University	*Director* Toxicology Working Group
2019 – present	West Virginia University	*Director* Center for Inhalation Toxicology (iTOX)
2/2019 – 8/2019	West Virginia University	*Vice Chair* Department of Physiology & Pharmacology
8/2019 – present	West Virginia University	*Chairman* Department of Physiology & Pharmacology
8/2019 – present	West Virginia University	*E.J. Van Liere Medicine Professor* (Endowed Professorship)
2022 – present	West Virginia University	*Director* Systems Toxicology Training Program (syTOX)

Research Interests and Activities

- Impact of xenobiotic particle exposure on systemic microvascular structure and function (environmental exposure toxicology and nanotoxicology).
- Local control of microvascular blood flow (vascular biology).
- Maternal and fetal microvascular development & dysfunction (vascular development & pathology).
- Developmental Origins of Health and Disease.
- Endothelial and vascular smooth muscle transduction pathways (signal and mechanotransduction).

Extramural Research Support – CURRENT

- *Multigenerational Effects of Maternal Engineered Nanomaterial Inhalation Exposure on Microvascular and Reproductive Health Outcomes*
  NIH-K01-OH0123220 (Mentor, PI: Elizabeth Bowdridge) 2022-2025
  Total Costs: $492,480

- *Predoctoral Training in Systems Toxicology*
  NIH T32 ES032920 (PI, Program Director) 2022-2027
  Total Costs: $2,288,702

- *Predoctoral Training in Stroke and its Co-Morbidities*
  NIH T32 AG052375 (Preceptor/Mentor, PI: James Simpkins) 2022-2027
  Total Costs: $2,100,000

- *Spatiotemporal Inflammation Associated with Agent Exposure*
  HDTRA1034446 (Co-I, 5% effort. PI: Jonathan Boyd) 2020–2025
  US DoD-Defense Threat Reduction Agency
  Total Costs: $2,399,972

- *Maternal Nanomaterial Exposures: Fetal Microvascular Endpoints and Programming*
  3 R01 ES015022 (PI, 30% effort) 2017-2023 (NCE)
  National Institute of Environmental Health Sciences
  Total Costs: $1,687,500

Extramural Research Support - PENDING

- *United Laboratories (UL) Wood Pellet Burn Pilot*
  Principal Investigator
  Total Costs: $380,000 2023-2024
  - The purpose of this project is to determine how the aerosol profile (physical and chemical) is different for wood pellets manufactured in four geographically distinct regions of the U.S.

- *Validation of a Military Burn Pit Surrogate Generator and Aerosol Exposure System*
  NIH R21 ES034942 Principal Investigator
  Total Costs: $418,000 2022-2024
  - The purpose of this project it to determine the aerosol phenotype of a battery of combustion substrates.
  - A0 Impact Score = 29 (13th percentile).
  - *Council Meeting - October 2022. Pending funding decision – January 2023*.

Extramural Research Support – PAST

- *$PM_{2.5}$ from Fracking Operations Induces Microvascular and Mitochondrial Dysfunction*
  1 R15 ES028005 (Co-I, 5% effort, PI Travis Knuckles) 2017-2020
  National Institute of Environmental Health Sciences
  Total Costs: $450,000

- *Pulmonary and Cardiovascular Responses to Aerosolized Emissions from 3-D Printers*
  CPSC 1007890R (PI, in kind effort) 2018-2020
  U.S. Consumer Product Safety Commission
  Total Costs: $60,000

- *IGERT: Research and Education in Nanotoxicity at WVU*
  Project 1144676 (Co-I, PI –Vince Castranova) 2012-2018
  National Science Foundation
  Total Costs: $3,000,000

- *Maternal Nanomaterial Exposures: Fetal Microvascular Endpoints and Programming*
  2 R01 ES015022 (PI, 50% effort) 2013-2017
  National Institute of Environmental Health Sciences
  Total Costs: $1,184,000

- *3D Printer Emission Exposure Effects*
  212-2015-M-63392 (PI)
  NIOSH/CDC 2015-2018
  Total Costs: $20,000

- *3D Printer Particle Generator & Inhalation Exposures*
  212-2015-M-63382 (Co-PI, Pi Jinghai Yi)
  NIOSH/CDC 2015-2017
  Total Costs: $20,000

- *Mitochondrial Mechanisms, Microvascular Function, and Gestational Nanotoxicology*
  1 K99 ES024783-01 (Co-Mentor, PI – Phoebe Stapleton) 2015-2016
  National Institute of Environmental Health Sciences
  Total Costs: $922,130

- *Research Experience for Undergraduates in Multifunctional Nanomaterials.*
  (Senior Personnel, PI – Michelle Richards-Babb) 2013-2016
  National Science Foundation
  Direct Costs: $320,000

- *Bionanotechnology for Public Safety and Environmental Safety*
  Project 10014116, Award 1005085R (Research Team Leader, PI – David Lederman)
  National Science Foundation 2010-2015
  Total Costs: Grant - $5,916, 555; Project - $40,287

- *Vascular Consequences of Multi-Walled Carbon Nanotube Exposure*
  F32-ES023435 (Mentor, PI - Phoebe Stapleton) 2013-2016
  National Institute of Environmental Health Sciences
  Total Costs: $161,802 (ended 2015 to activate K99/R00)

- *Research Training in Cardiovascular and Pulmonary Diseases*
  T32 HL090610 (Mentor, PI - Jamal Mustafa) 2008-2013
  National Heart Lung and Blood Institute
  Total Costs: $1,650,000

- *Remote Microvascular Dysfunction After Particulate Matter Exposure*
  R01 ES015022 (PI, 50% effort)
  National Institute of Environmental Health Sciences
  Total Costs: $2,082,095 2007-2013

- *Microvascular Health and Nanoparticle Exposure*
  RC1 ES018274 (PI, 30% Effort)
  National Institute of Environmental Health Sciences
  Total Costs: $1,000,000 2009-2012

- *Systemic Microvascular Dysfunction: Effects of Ultrafine vs. Fine*
  NIOSH, Internal Grant (Co-I, 10% effort, PI - Vincent Castranova)
  Total Annual Costs: $182,500 2005-2010

- *Pulmonary Particulate Matter Exposure and Systemic Microvascular Dysfunction*
  #4730, Walter A. Rosenblith New Investigator Award (PI, 40% effort)
  Health Effects Institute
  Total Costs: $300,000 2005-2008

- *Endothelial Transduction of Shear Stress*
  F32-HL67562-01, National Research Service Award (PI, 100% effort)
  National Heart Lung and Blood Institute
  Total Costs: $127,192 2001-2004

Awards/Achievements

- 1998: E.J. Van Liere Research Symposium: 2nd place.
- 1999: E.J. Van Liere Research Symposium: 3rd place.
- 2001: National Research Service Award, National Institutes of Health.
- 2005: Health Effects Institute: Walter A. Rosenblith New Investigator Award.
- 2005: Young Investigator Award: *8th International Meeting on Particles, Fibers and Nanoparticles in Lung and Cardiovascular Disease*.
- 2007: Outstanding New Environmental Scientist Award: National Institute of Environmental Health Sciences.
- 2008: Gordon Research Conference Invited Speaker. *Mechanisms of Toxicity*. Bates College, Lewistown, Maine.
- 2013: Dean's Award for Excellence in Research.
- 2014: Young Investigator Award. Inhalation and Respiratory Specialty Section of the Society of Toxicology (Annual Meeting, Phoenix, Arizona).
- 2019: E.J. Van Liere Endowed Professorship.

Patents

- Yi J., and **Nurkiewicz T.R**. Nanoparticle Aerosol Generator*. United States Patent #8,881,997.* Initiated/provisional status: 2011 (Application # 13/317,742). Full patent awarded: 2014.

Teaching Activities

Year	*Course Title*	Role	Class Profile	Lecture Hours
1992	*Pre- and Post-Operative Cardio-Pulmonary Rehabilitation Instruction*	Team Instructor	Variable (patient & family)	~90
1992-95	*Phase III (outpatient) Cardiac Rehabilitation Instruction*	Team Instructor	individual patient	~2 / patient
1992	*Physiology of Motor Activities*	Primary Instructor	27 undergraduate students	30
1992	Exercise Physiology-Laboratory Techniques	Primary Instructor	15 graduate students	30
1993	Kinesiology	Secondary Instructor	160 undergraduate students	15
1993	Exercise Physiology-Laboratory Techniques	Primary Instructor	15 graduate students	30
1994	Kinesiology	Primary Instructor	19 undergraduate students	30

1994	Kinesiology	Primary Instructor	27 undergraduate students	30
1995	Kinesiology	Primary Instructor	29 undergraduate students	30
1995	*Exercise Physiology-Laboratory Techniques*	Primary Instructor	11 graduate students	30
1995	*Physiology of Motor Activities*	Primary Instructor	16 undergraduate students	30
1997	*Human Physiology*	Team Instructor	200 professional and graduate students	8
1998	*Fundamentals of Physiology*	Team Instructor	200 undergraduate students	10
1999	*Human Function*	Small Group Facilitator	12 medical students	15
2001	*Medical Neuroscience*	Computer Lab & Team Instructor	100 medical students 4 graduate students	6
2001-07	*Human Function*	Small Group Facilitator	15 medical students	15
2001-07	*Mechanisms of Body Function*	Team Instructor	300 professional and graduate students	5
2007-2011	*Advanced Physiology (Cardiovascular and Respiratory)*	Team Instructor	Variable graduate students	2
2008 - 2022	*Fundamentals of Physiology (PSIO 743)*	Team Instructor	200+ professional students	12
2009 – 2012	*Advanced Pharmacology (Nanoparticles and Cardiovascular)*	Team Instructor	Variable graduate students	2
2013, 2015-2019	*Laboratory Animal Medicine (VETS 411)*	Invited Lecturer	25 undergraduate students	1.5
2015-2019	*Medical Physiology Online (PSIO 760)*	Team Instructor	~10+ medical students	2
2016	*Cellular Methods (BMS 706)*	Course Co-Coordinator	~20 graduate students	~11
2016, 2020	*Graduate Physiology & Pharmacology (PSIO 750)*	Team Instructor	6 graduate students	~30 (flipped)
2018	*Pulmonary Pharmacology, Physiology & Disease (PHAR 791)*	Team Instructor	6 graduate students	3
2020-2022	*Responsible Conduct of Research (BMS 700) – Recording Research Data*	Team Instructor	20 graduate students	2
2020	*Advanced Physiology (PSIO 793A) – Microvascular Physiology*	Primary Instructor	2 graduate students	45
2019, 2021	*Scientific Writing (BMS 720) – Mock NIH/CSR Study Section*	Study Section Chair	8 graduate students	3
2021	*Physiology Module (BMS 793A-002)*	Team Instructor	6 graduate students	2

Service on Doctoral Dissertation Committees

- Julie Lynn Balch-Samora (Physiology and Pharmacology: 2004 – 2007).
- Lori Kang (Physiology and Pharmacology: 2006 – 2009).
- Richard Carpenter (Neurobiology and Anatomy: 2008 – 2010).
- Micah Waltz (Physiology and Pharmacology: 2009 – 2011).
- Leslie Charles Thompson (2010 - 2014).

- External Committee Member (East Carolina University, Department of Physiology).
  - Laura Kurth (Esch) (Community Medicine: 2010 - 2013).
  - Andrea Armstead (Basic Pharmaceutical Sciences: 2011 - 2014).
  - Joshua Butcher (Cellular & Integrated Physiology: Chair, 2011 - 2013).
  - Katherine Dunnick (Basic Pharmaceutical Sciences: 2012 - 2015).
  - Justin Chambers (Mechanical Engineering, 2012 - 2016).
  - Cody Nichols (Exercise Physiology: 2013 – 2016).
  - Kyle Mandler (Exercise Physiology: 2014 – 2017).
  - Bryan Gall (Cellular & Integrated Physiology: Chair, 2014 – 2016).
  - Steve Brooks (Cellular & Integrated Physiology: 2015 - 2016).
  - Megan Maurer (Chemistry: 2015 – 2017).
  - Lauryn Falcone (Cellular & Integrated Physiology: 2015 – 2018).
  - Kelly Smith (Fraser) (Basic Pharmaceutical Sciences: 2016 – 2021).
  - Janet Thompson (Basic Pharmaceutical Sciences: 2017 – present).
  - Nicole Prince (Chemistry: 2017 – 2021).
  - Quincy Hathaway (Exercise Physiology: 2017 – 2019).
  - Mackenzie Newman (Cellular & Integrated Physiology: 2017 – 2020).
  - Rebekah Krupa (Chemistry: 2018 – present).
  - Mariana Farcas (Basic Pharmaceutical Sciences: 2018 – 2021).
  - Ditte Marie Jensen (University of Copenhagen, Health & Medical Sciences. 2018-19).
    - Dissertation Defense Opponent (Peter Moller, mentor).
  - Amina Kunovac (Exercise Physiology: 2018 – 2021).
  - Xena Williams (Cellular & Integrated Physiology: 2019 – present).
  - Nairrita Majumder (Cellular & Integrated Physiology: 2019 – present).
  - Amber Mills (Cellular & Integrated Physiology: 2021 – present).
  - Hassan Alkhadrawi (Biomedical Engineering: 2021 – present).
  - Rebecca Caughron Chalme (Psychology: 2022 – present).

Service on Masters Thesis Committees

- Lynnsey Carrell-Jacks (Neurobiology and Anatomy: 2009 – 2010).
- Ernest Young (Basic Pharmaceutical Sciences: 2010 - 2011).

Faculty Mentored/Trained

- Travis Knuckles, Ph.D. (2009-2015). Current position: Associate Professor, West Virginia University, School of Public Health, Department of Occupational & Environmental Health.
- Jinghai Yi, Ph.D. (2009-2017). Current position: Mechanical Engineer, U.S. Department of Health and Human Services, Food & Drug Administration, National Center for Toxicological Research.
- Phoebe Stapleton, Ph.D. (2015-2016). Current position: Assistant Professor, Rutgers University, Environmental and Occupational Health Sciences Institute, Department of Pharmacology & Toxicology.
- Vincent Setola, Ph.D. (2016 – 2021): Current position: Associate Professor, West Virginia University, Department of Neuroscience.
- Travis Goldsmith B.S. (2017 – present): Research Specialist (Senior). West Virginia University, Inhalation Facilities.
- Elizabeth Bowdridge, Ph.D. (2020 – present). Research Assistant Professor, West Virginia University, Department of Physiology & Pharmacology.

Post-Doctoral Fellows Trained

- Amanda Jo LeBlanc, Ph.D. (2008 - 2009). Current position: Associate Professor (tenured), University of Louisville.
- Phoebe Stapleton, Ph.D. (2010 – 2015). Current position: Assistant Professor, Rutgers University.
- Elizabeth Bowdridge, Ph.D. (2017 – 2019). Current position: Research Assistant Professor, West Virginia University.

- Evan DeVallance, Ph.D. (2020 – present).

Doctoral Students Trained
- Katrina Lyndsay Sites-Porter (2008 - 2010).
- Valerie Minarchick (2010 - 2015). Current position: Research Associate, University of Colorado, Denver. Anschutz Medical Campus. Barbara Davis Center, Department of Rheumatology.
- Justin Chambers (2012 - 2017).
- Kyle Mandler (2013 – 2017).
- Alaeddin Abukabda (2014 – 2018) Current position: Assistant Professor, Lake Erie College of Osteopathic Medicine, Pennsylvania. College of Osteopathic Medicine.
- Krista Garner (2017 – 2022).
- Julie Griffith (2018 – present).

Medical Students Trained
- Joshua Briscoe (2009); Summer research program.

Undergraduate Students Trained
- Joshua Briscoe (2007): WV-INBRE; West Virginia Wesleyan College.
- Evan Vogel (2010): Summer Laboratory Internship (Catholic University of America).
- Kenzie Dent (2010): WV-INBRE; West Virginia Wesleyan College.
- Nick Mazzone (2011): Summer Laboratory Internship, WVU Exercise Physiology Program.
- Katie Spears (2012): WVNano National Science Foundation - Research Experience for Undergraduates; Maryville College, TN.
- Shannon Aippersbach (2013): WVNano National Science Foundation - Research Experience for Undergraduates; Pennsylvania State University, PA.
- Gaurav Gautam (2013): Summer Laboratory Internship, Emory University, GA.
- Quincy Hathaway (2014): NanoSafe National Science Foundation - Research Experience for Undergraduates; Waynesburg University, PA.
- Matthew Potorti (2014): WVU Animal and Nutritional Sciences.
- Rebekah Krupa (2015): NanoSafe National Science Foundation - Research Experience for Undergraduates; St. Francis University, PA.
- Wijdan Dabeek (2016): WVU Pre-medicine student.
- Morgan Okubo (2018 – 2021): WVU Animal & Nutrition Sciences.
- Kallie Schafner (2019 – present): Chemistry.
- Alexandra Lusk (Summer, Fall 2021): Exercise Physiology.
- Maddie Seaman (Summer, Fall 2021): Exercise Physiology.
- Anthony Siler (Fall 2021 - present): Biology.

High School Student/Teacher Rotations
- Sarah Jones (June, 2014): West Greene High School, Waynesburg, PA.
- Hannah Reed (October, 2014): West Greene High School, Waynesburg, PA.
- Samantha Simon (WV-INBRE, 2015): University High School science teacher. Morgantown, WV.
- Five high school science students (April 2017): West Greene High School, Waynesburg, PA.
- Four high school science students (February 2018): West Greene High School, Waynesburg, PA.
- Four high school science students (November 2019): West Greene High School, Waynesburg, PA.

Other Trainees/Rotations:
- Astrid Skovmand (January 2018): Doctoral Student at the University of Copenhagen, and Guest Researcher at the National Research Centre for the Working Environment; Copenhagen, Denmark.

Positions/Service

Department - Center
- 1999: Graduate Studies Committee - Student representative, WVU Department of Physiology.
- 2003: *Cell and Macromolecular Structure/Function* Core Curriculum Committee.

- 2003 – 2016: Member, WVU Center for Cardiovascular and Respiratory Sciences (CCRS).
- 2003: Physiology & Pharmacology Departmental Space Committee.
- 2004 – 2013: Web site designer/master, WVU Center for Cardiovascular and Respiratory Sciences
- 2006 – 2009: Department and Research Center Search Committees (member and Chair).
- 2008 – 2012: Member, West Virginia Rural Health Research Center.
- 2009 – present: Cellular and Integrative Physiology Graduate Program Advisory Committee.
- 2010 – 2015: Physiology & Pharmacology Seminar Series Committee (Chair).
- 2012 - 2014: CCRS Xenobiotic Toxicology theme leader.
- 2012 - present: Physiology & Pharmacology Faculty Search Committees (Chair of one).
- 2012 - 2019: Physiology & Pharmacology Associate Chair for Research.
- 2018 – present: Member, WVU Cancer Institute (WVUCI).
- 2019: Physiology & Pharmacology Vice Chair.
- 2019 - present: Physiology & Pharmacology Chairman.

Institutional

- 2003 – present: WVU Graduate Faculty.
- 2005: WVU Office of Research and Graduate Education, Med School 102 Lecture: "*Air Pollution and Cardiovascular Disease*."
- 2007 - 2012: Health Sciences Center Bridge & Research Development Grant Committee.
- 2007 – present: WVU Davis College of Agriculture, Genetics and Developmental Biology Faculty.
- 2008: WVU Mary Babb Randolph Cancer Center Grant Review Committee.
- 2011: Judge, WVU School of Medicine, Graduate Medical Education - Poster & Podium Presentations.
- 2011 - 2015: WVU Office of Research and Economic Development, "Linking Innovation Industry and Commercialization" Task Force.
- 2011 - 2018: WVU Institutional Animal Care and Use Committee.
- 2011 - 2014: WVU Health Sciences Center, Basic Sciences Salary Plan Committee.
- 2012 - 2015: WV NanoSAFE National Science Foundation, Research Experiences for Undergraduates Project Site.
- 2014 – 2017: Faculty Representative – University Industry Demonstration of Partnership.
- 2014 – 2015: WVU Department of Chemistry, Search Committee (Analytical Chemist).
- 2015 – present: WVU Health Sciences Center, Van Liere Research Day, Judge (poster).
- 2015 – 2018: WVU Health Sciences Center, Graduate Programs Committee on Academic and Professional Standards.
- 2015 – 2016: WVU Department of Chemistry, Search Committee (Analytical Chemist, 2nd search).
- 2016: WVU HSC Internal Study Section (pre-NIH proposal submission - reviewer).
- 2016 – 2019: Toxicology Working Group (Director).
- 2017-2019: School of Medicine Promotion and Tenure Committee (sub-committee Chair).
- 2019 – present: Center for Inhalation Toxicology (Director).

State - National - International

- 2007: Public Relations/Research Reporting – Vascular Effects of Diesel Exhaust Components. Local, state, national and international communications via internet, newspaper, radio and television. 2007. (Original press release via American Physiological Society and Associated Press is available at http://www.the-aps.org/press/journal/07/31.htm).
- 2007 – 2009: Microcirculatory Society, Nominating Committee.
- 2009 – 2011: First President (and founding member), Cardiovascular Toxicology Specialty Section of the Society of Toxicology.
- 2009 – present: NIEHS Consortium for Nanotechnology Health Implications Research (NCNHIR) (Engineered Nanomaterials Environmental Health and Safety, National Institute of Environmental Health and Safety).
- 2010: U.S. Environmental Protection Agency, Washington, D.C., Health Effects Institute Center Grant Review: "*Building the Next Generation of Investigators*."

- 2010: NIH Podcast, "Health Effects of Nanoparticles" (available at: http://ocplmedia.od.nih.gov/nihradio/20100924NIHpodcast_0118.mp3 or http://research.wvu.edu/wvu_research_highlights/2010/10/14/health-effects-of-nanoparticles).
- 2011 - 2014: American Physiological Society, Cardiovascular Physiology Section: Membership Committee.
- 2011 - 2012: Past President-Senior Councilor, Cardiovascular Toxicology Specialty Section of the Society of Toxicology.
- 2011 - 2012: President-Elect, Allegheny-Erie Regional Chapter of the Society of Toxicology.
- 2011 – 2012: Microcirculatory Society, Membership Committee.
- 2012 - 2013: President, Allegheny-Erie Regional Chapter of the Society of Toxicology.
- 2013 - 2014: Past President - Senior Councilor, Allegheny-Erie Regional Chapter of the Society of Toxicology.
- 2014 – present: Senior Councilor, Allegheny-Erie Regional Chapter of the Society of Toxicology.
- 2014 – 2016: AHA Study Section (Standing Member), Cardiac Biology/Regulation – Basic Sciences.
- 2014: NIH Study Section (Ad Hoc Member), Special Emphasis Panel for Population Sciences and Epidemiology IRG (ZRG1 PSE).
- 2014: Session Chair, West Virginia University NanoSAFE Bioelectronics and Biosensing International Symposium, "*Cellular Response*". Waterfront Place, Morgantown, WV.
- 2014 – 2016: International Advisory Board and Local Organizing Committee. *NANOTOX 2016, 8th International Nanotoxicology Congress*. Boston, MA.
- 2014 – 2015: Steering Committee. NIEHS sponsored/SOT CCT mechanism meeting. *Environmental Cardiology 2015*. Santa Fe, New Mexico.
- 2015 - 2019: Vice President-Elect, Vice President, President, Past-President. Nanotoxicology Specialty Section of the Society of Toxicology.
- 2015: NIH Study Section (Ad Hoc Member), Transition to Independence (Careers) Development of Awards Review Committee (ZES1 LWJ-D (KC) 1).
- 2015: NIH Study Section (Ad Hoc Member), National Institute of Environmental Health Sciences Special Emphasis Panel (ZES1 LKB-D (C) 1).
- 2015: NIH Study Section (Ad Hoc Member), National Institute of Environmental Health Sciences Special Emphasis Panel (ZRG1 DKUS C50 - ViCTER).
- 2016 – 2017: Vice President, Nanotoxicology Specialty Section of the Society of Toxicology.
- 2016: NIH Study Section (Ad Hoc Member), Systemic Injury by Environmental Exposure (SIEE) Study Section. (June and November cycles/meetings)
- 2017: NIH Study Section (Ad Hoc Member), ZRG1 DKUS-P (04). Topics in Toxicology.
- 2018 - 2022: NIH Study Section (Regular Member), Systemic Injury by Environmental Exposure (SIEE) Study Section.
- 2019: NIH Study Section (Ad Hoc Member), ZES1 LAT-S (T1) 1. National Institute of Environmental Health Sciences Special Emphasis Panel.
- 2022: Department of Defense, Peer Reviewed Medical Research Program, Focused Program Award Panel (ad hoc member).

Invited Research Seminars

1. WVU School of Medicine, Department of Physiology (1996): "*Endothelial modulation of the myogenic response in the rat microcirculation*."
2. WVU School of Medicine, Department of Physiology (1997): "*The effects of hypertension, salt and nitric oxide on microvascular myogenic sensitivity*."
3. University of Louisville School of Medicine, Department of Physiology and Biophysics (1998): "*Arteriolar myogenic responsiveness in normal, salt-loaded and hypertensive rats*."
4. Texas A&M University, Department of Medical Physiology (1999): "*Microvascular myogenic control in normotensive and hypertensive rats: effect of dietary salt*."
5. University of Rochester, Department of Anesthesiology (1999): "*Arteriolar myogenic responsiveness in normotensive and hypertensive rats: effect of dietary salt*."

6. San Diego, FASEB, Special Topics Symposium-Cardiovascular Regulatory Effects of Dietary Sodium, Calcium and Potassium (2000): "*Reduced angiotensin II activity may contribute to attenuated myogenic behavior in rats fed high salt*."
7. San Diego, FASEB, Special Topics Symposium-Evolution of Vascular Regulation from the Neonate to the Aging Adult (2003): "*Absence of Calcium-Independent Release of Endothelial Nitric Oxide in Young Rats*."
8. WVU School of Medicine, Center for Interdisciplinary Research in Cardiovascular Sciences (2004): "*Microvascular Changes Linked to Particulate Matter Exposure.*"
9. WVU School of Medicine, Department of Physiology & Pharmacology (2004): "*Endothelium-Dependent Arteriolar Dilation: Developmental Onset, and Impairment After Particulate Matter Exposure.*"
10. West Virginia Biomedical Research Infrastructure Network (2004): "*Impairment of Systemic Microvascular Function After Pulmonary Particulate Matter Exposure*."
11. University of Louisville School of Medicine, Department of Physiology and Biophysics (2004): "*Peripheral Microvascular Dysfunction After Pulmonary Particulate Matter Exposure*."
12. Pittsburgh, PA, Society of Environmental Journalists, Special Topics Symposium (Invited Panelist & Speaker, 2004) - *The Air: Emerging Clues to Air Sickness*.
13. WVU School of Medicine, Section of Cardiology, Grand Rounds (2004): "*Air Pollution and Peripheral Microvascular Dysfunction*."
14. WVU School of Medicine, Department of Physiology & Pharmacology (2005): "*Cardiovascular Morbidity and Mortality Associated with Pulmonary Particulate Matter Exposure: Microvascular Evidence to Support the Inflammation Hypothesis.*"
15. West Virginia Biomedical Research Infrastructure Network (2005): "*Remote Microvascular Effects After Pulmonary Particulate Matter Exposure*."
16. Research Triangle Park, NC, 8th International Meeting on Particles, Fibers and Nanoparticles in Lung and Cardiovascular Disease (2005): "*Remote Microvascular Inflammation and Dysfunction Follow Pulmonary Particulate Matter Exposure*."
17. WVU School of Medicine, Center for Interdisciplinary Research in Cardiovascular Sciences (2006): "*Biologic Alterations in the Peripheral Microcirculation After Pulmonary Particle Deposition*."
18. University of Pittsburgh, PA, Department of Environmental and Occupational Health (2006): "*Emission and Occupational Source Particle Exposures Induce Remote Microvascular Dysfunction*."
19. Colorado State University, CO, Department of Biomedical Sciences (2006): "*Tiny but dangerous: airborne particle pollution exposure and remote microvascular dysfunction*."
20. Lovelace Respiratory Research Institute, Albuquerque, NM (2006): "*Systemic Microvascular Responses to Fine and Ultrafine Particulate Exposures*."
21. West Virginia Biomedical Research Infrastructure Network (2006): "*Microvascular Impacts of Particle Pollution*."
22. WVU School of Medicine, Department of Pediatrics (2006): "*Particulate Air Pollution and Remote Microvascular Dysfunction: Does Size Matter*?"
23. East Carolina University, NC, Brody School of Medicine, Department of Physiology (2007): "*Systemic Microvascular Consequences of Pulmonary Ultrafine Particulate Exposure*."
24. Washington, D.C., Experimental Biology, Special Topics Symposium-Toxicology of Nanomaterials (2007): "*Peripheral Microvascular Effects of Pulmonary Exposure to Ultrafine Particles*."
25. National Institute of Environmental Health Sciences, Research Triangle Park, NC (2007): "*Remote Microvascular Dysfunction After Particulate Matter Exposure."*
26. University of Akron, OH, Buchtel College of Arts and Sciences, Department of Biology (2007): "*Airborne Nanoparticles and Microvascular Toxicity*."
27. National Institute of Environmental Health Sciences, Research Triangle Park, NC (2008): "ONES Award - *Remote Microvascular Dysfunction After Particulate Matter Exposure."*
28. University of Cincinnati, OH, Department of Environmental Health (2008): "Manifestation of Inflammatory Markers in the Systemic Microcirculation After Particulate Matter Inhalation."
29. Seattle, Washington, Society of Toxicology, Special Topics Symposium-Endothelial Dysfunction: More Than just a No NO Phenomenon (2008): "*Ultrafine Particulate Matter Inhalation Attenuates Microvascular Endothelial Nitric Oxide Production.*"
30. East Carolina University, NC, Brody School of Medicine, Department of Physiology (2008): "*Particle-Dependent Activation of Inflammatory Mechanisms Impairs Endothelium-Dependent Arteriolar Dilation.*"

31. Gordon Research Conference (Mechanisms of Toxicity), Bates College, Lewistown, ME (2008): "*Induction of Extra-Pulmonary Microvascular Inflammation by Airborne Particle Exposure*."
32. Budapest, Hungary. 25th Conference of the European Microcirculatory Society, Microvasculature in Skeletal Muscle Symposium (2008): "Nanoparticle Inhalation Activates Inflammatory Mechanisms and Impairs Systemic Microvascular Function."
33. WVU School of Medicine, Center for Cardiovascular and Respiratory Sciences (2009):"There and Back Again: Identifying Mechanisms Between Pulmonary Particle Exposure and Remote Microvascular Effects"
34. Baltimore, Maryland, Society of Toxicology, Special Topics Symposium-Cardiopulmonary Toxicity of Inhaled Particles and Nanoparticles (2009): "*Nanoparticle Inhalation Increases Microvascular Oxidative Stress and Compromises Nitric Oxide Bioavailability.*"
35. Baltimore, Maryland, Society of Toxicology, Special Topics Symposium-Cardiopulmonary Toxicity of Inhaled Particles and Nanoparticles (2009): "*Mechanistic Links Between the Lung and the Systemic Microcirculation After Nanoparticle Exposure.*"
36. West Virginia Nano Research Symposium (2009): "*Nanoparticle Inhalation Impairs Microvascular Reactivity and Nitric Oxide Bioavailability."*
37. National Institute for Occupational Safety and Health (2009): "*Particle Dependent Alterations in Vascular Reactivity - Mechanisms of Microvascular Dysfunction*."
38. West Virginia IDEA Networks of Biomedical Research Excellence - Biomedical Research Infrastructure Network (2009): "*Inhaled Particles Influence Peripheral Microvascular Function*."
39. Health Effects Institute Center Grant Review – U.S. Environmental Protection Agency, Washington, D.C. (2010): "*Building the Next Generation of Investigators*."
40. WVU Institute of Occupational and Environmental Health - Grand Rounds (2010): "*Pulmonary Nanoparticle Inhalation Disrupts Systemic Microvascular Function*."
41. Rutgers State University, New Jersey, Environmental and Occupational Health Sciences Institute (2010): "*Nanoparticle Inhalation Alters Skeletal Muscle and Coronary Microvascular Reactivity*."
42. Pittsburgh, Pennsylvania, Allegheny-Erie Regional Chapter of the Society of Toxicology – Annual Meeting (2010): "*Microvascular Consequences of Nanoparticle Inhalation*."
43. National Institute of Environmental Health Sciences – Environmental Protection Agency Symposium on Air Pollution and Cardiovascular Disease, Seattle, WA (2010): "*Microvascular Impacts of Particulate Matter Exposure*"
44. West Virginia IDEA Networks of Biomedical Research Excellence - Biomedical Research Infrastructure Network (2010): "*Inhaled Particles Induce Systemic Microvascular Dysfunction*."
45. West Virginia Nano BBL Seminar (2011): "*Microvascular Endpoints Associated with Nanoparticle Inhalation."*
46. National Institutes of Health, National Institute of Environmental Health Sciences - Nano Grand Opportunity/Consortium, Bethesda, MD (2011): Nano GO Grantee Research Progress Update, "*Microvascular Health and Nanoparticle Exposure.*"
47. National Institute of Environmental Health Sciences, Research Triangle Park, NC. Outstanding New Environmental Scientist Grantee Meeting (2011): "*Remote Microvascular Dysfunction After Particulate Matter Exposure."*
48. Munich, Germany. Joint Meeting of the European Society for Microcirculation and the German Society of Microcirculation and Vascular Biology, Special Topics Symposium - Nanoparticles (2011): "*Nanoparticle size, shape and composition influence remote microvascular effects*."
49. WVU School of Medicine, Center for Cardiovascular and Respiratory Sciences, Work in Progress Meeting (2011): "*Effect of Nanomaterial Exposures on Microvascular Endpoints and Fetal Outcomes.*"
50. WVU School of Medicine, Center for Cardiovascular and Respiratory Sciences, Retreat (2011): *"Engineered Nanomaterial Inhalation Exposure Facility: Accomplishments, Immediate Challenges and Long-Term Goals.*"
51. National Institute of Environmental Health Sciences, Research Triangle Park, NC. Outstanding New Environmental Scientist Grantee Meeting (2012): "*Maternal Nanomaterial Exposures: Fetal Microvascular Endpoints and Programming."*
52. West Virginia IDEA Networks of Biomedical Research Excellence - Biomedical Research Infrastructure Network (2012): "*Environmental Toxicology & Nanotoxicology: a Microvascular Perspective*."

53. WVU School of Medicine, Department of Physiology & Pharmacology (2012): "*Microvascular Xenobiotic Nanotoxicology: On Our Arrival and Destination.*"
54. Dalton Cardiovascular Research Center, University of Missouri (2012): "Xenobiotic Particle Exposures and Microvascular Ramifications: Laboratory Phenomenon or Translational Gold Mine?"
55. San Antonio, Texas. Society of Toxicology, Continuing Education Course (2013): Recent Developments in Cardiovascular Physiology-Based Toxicology. Invited Speaker. "*Principles of Microvascular Assessments in Toxicology*."
56. WVU School of Medicine, Cardiology Grand Rounds (2013): "Cardiovascular *Xenobiotic Toxicology: Personal, Occupational & Environmental Exposures.*"
57. New Orleans, Louisiana. 13th International Congress on Combustion By-Products and Their Health Effects; Plenary Speaker for Session V - Pollutants from Combustion Sources: Mechanisms of Toxicity/Dysfunction. (2013): "*Microvascular Consequences of Pulmonary Combustion Particle Exposures*."
58. West Virginia IDEA Networks of Biomedical Research Excellence - Biomedical Research Infrastructure Network (2013): "*Microvascular Consequences of Diverse Toxicant Exposures*."
59. WVU School of Medicine, Pulmonary Grand Rounds (2013): "*Pulmonary Nanomaterial Exposures - Systemic Microvascular Effects*."
60. National Institute of Environmental Health Sciences, Research Triangle Park, NC. Outstanding New Environmental Scientist Awardee Symposium (2014): "*Nanomaterial Inhalation Exposure and Microvascular Endpoints: Our Journey from an Obscure Skeletal Muscle to the Fetus."*
61. University of Colorado, Anschutz Medical Campus, Skaggs School of Pharmacy and Pharmaceutical Sciences (2015): "*Systemic Microvascular Responses to Diverse Pulmonary Particle Exposures.*"
62. University of Texas, San Antonio. Materials Research Day (2015): *"Eight Years of Nanotoxicology: a Perspective on the Systemic Microvascular Impacts of Engineered Nanomaterial Exposures."*
63. New Orleans, Louisiana, Society of Toxicology, Nanotoxicology Specialty Section. Public Debate (2016): *Does Anyone Care About Nanotoxicology Anymore*? **(successfully argued in favor).**
64. National Institute of Environmental Health Sciences, Research Triangle Park, NC. Outstanding New Environmental Scientist Awardee Symposium (2016): "*Maternal Nanomaterial Inhalation during Gestation: Fetal Microvascular Consequences and Transcriptomic Dysregulations."*
65. San Antonio, TX. Teratology Society Annual Meeting (2016): Assessing the Developmental Toxicity of Nanomaterials Symposium. Invited Speaker. "*Maternal Gestational Nanomaterial Exposures: Uterine and Fetal Microvascular Consequences*."
66. WVU Office of Laboratory Animal Resources (2016): "*Laboratory Animal Usage in Xenobiotic Microvascular Toxicology Research*."
67. WVU School of Agricultural Science, Reproductive Physiology Program (2016): "*Maternal Nanomaterial Inhalation during Gestation: Impacts on the Fetal Microcirculation and Cardiac Transcriptome*."
68. National Institute for Occupational Safety and Health (2016): "*From ROFA to Nanomaterials & 3D Printer Emissions…a Dozen Years of Microvascular Toxicology*."
69. South Middle High School, Morgantown, WV (2017): "*Careers in Medicine and Nursing*."
70. Baltimore, Maryland. Society of Toxicology Annual Meeting (2017): "*Novel Pulmonary Exposure Studies to Examine the Effects of Airborne Toxins*." Data Sciences International sponsored session.
71. Baltimore, Maryland. Society of Toxicology Annual Meeting (2017): "*Nanomaterial Inhalation-Induced Serum Biomarkers Associated with Extrapulmonary Microvascular Dysfunction*." Workshop Session: Circulatory Mechanisms Underlying the Systemic Effects of Inhaled Nanoparticles and Complex Combustion Mixtures: Common Pathways for Diverse Toxicants.
72. Baltimore, Maryland. Society of Toxicology Annual Meeting (2017): "*Alterations in the Cardiovascular Epigenome after Prenatal Engineered Nanomaterial Exposures*." Symposium Session: Cardiopulmonary Consequences of Gestational Toxicant Exposure: Getting to the Heart of the Matter.
73. Chicago, Illinois. EB-ASPET Annual Meeting (2017): Division for Toxicology Symposium – In Utero and Neonatal Exposure to Environmental Agents. "*Microvascular Ramifications of Maternal Nanomaterial Inhalation: Uterine and Fetal Perspectives*"
74. Elsinore, Denmark. 8th International Symposium on Nanotechnology, Occupational and Environmental Health (2017). Scientific Session - Reprotoxicity. "*Engineered Nanomaterial Inhalation During Gestation: Ramifications on Uterine Microvascular Function, the Fetal Genome and Cardiac Transcriptome*".

75. Copenhagen, Denmark. National Research Center for the Working Environment (2017). "*Nanomaterial Inhalation: Inflammatory Links, End-Points and Dysfunction in the Systemic Microcirculation*"
76. Minneapolis, Minnesota. Data Sciences International (DSI, 2017*): "Xenobiotic Particle Inhalation Toxicology: Generation, Characterization and Assessment of the Ramifications on the Systemic Microcirculation*".
77. Washington, D.C.. American Chemical Society Annual Meeting (2017): "*Plasma Proteomics, the Link Between Engineered Nanomaterial Inhalation and Systemic Microvascular Dysfunction?*" Symposium session: Analytical Toxicology in the 21st Century.
78. WVU Offices of Laboratory Animal Resources, and Environmental Health and Safety (2018): "*Xenobiotic Particles: WTF?*".
79. West Virginia Clinical and Translational Science Institute Annual Meeting (2018), "Headliners in Team Science" Session: "*Unique NIOSH-WVU Collaborative Studies to Assess Health Effects of 3-Dimensional Printing Emission Exposures*".
80. University of Cincinnati, Division of Environmental Genetics and Molecular Toxicology, Department of Environmental Health (2018): "*Nanomaterial Inhalation During Gestation: the Microvascular Path from the Lung to the Fetus*".
81. Michigan State University, Department of Pharmacology and Toxicology (2018): "*Maternal Nanomaterial Inhalation During Gestation: Utero-Placental and Fetal Microvascular Consequences*".
82. Baltimore, Maryland. Society of Toxicology Annual Meeting (2019): "*Endothelial Heterogeneity: Diverse Anatomic and Physiologic Determinants of Toxicological Assessments after Inhalation Exposures*." Symposium Session: "Not Your Father's ED": Expanding the Definition and Understanding of Endothelial Dysfunction (ED) Due to Inhaled Toxicants.
83. University of New Mexico, Department of Pharmaceutical Sciences (2019): "*Utero-Placental and Fetal Microvascular Consequences of Maternal Nanomaterial Inhalation During Gestation*".
84. WVU School of Medicine, Department of Physiology & Pharmacology (2019): "*State of the Department.*"
85. WVU Heart & Vascular Institute, Division of Cardiology. Grand Rounds (2019): "*Xenobiotic Particle Inhalation and Systemic Microvascular Toxicology*"
86. Raleigh, North Carolina. 9th Research Triangle Park Rodent Pathology Symposium (2019). Session: Current Topics in Rodent Pathology. "*Nanoparticle Inhalation: Segment Specific Impacts on the Microvascular Milieu*"
87. University of Louisville, Christina Lee Brown Envirome Institute. Superfund Research Center (2019): "*Maternal Nanomaterial Inhalation During Gestation: Microvascular Impacts on the Utero-Placental Circulation and Fetus*"
88. WVU School of Medicine, Office of Research and Graduate Education (2020): Evening of Science. Programmatic Strategy Focused on Toxicology – Addressing Health Challenges in Appalachia. "*Generation and Real-Time Characterization of Xenobiotic Aerosols to Model Diverse Appalachian Inhalation Exposures*"
89. Texas A&M University. Department of Veterinary Physiology and Pharmacology, College Station, Texas (2020). "*Engineered Nanomaterial Inhalation During Pregnancy: Impacts on the Utero-Placental Microcirculation and Fetal Outcomes*"
90. Anaheim, California. Society of Toxicology Annual Meeting (2020) – changed to online/virtual (COVID 19, in person meeting cancelled): "*3D Printer Emission Inhalation Impairs Systemic Microvascular Function*." Symposium Session: "Toxicological Exposure and Risk Assessment of Emissions from 3D Printers.
91. WVU School of Medicine, Department of Physiology & Pharmacology (2020): "*State of the Department.*"
92. WVU Occupational Medicine Grand Rounds (2020): "*Masks in the COVID-19 Era: the Science that Supports the Facts & Debunks the Fiction.*"
93. WVU School of Medicine, Office of Research and Graduate Education (2020): Afternoon of Science. "*Center for Inhalation Toxicology (iTOX) – COVID Activities and Future Directions*"
94. University of Ottawa – Carleton (2021): "*Inhalation Toxicology: Impacts of Engineered Nanomaterial Inhalation During Pregnancy on the Utero-Placental Microcirculation and Fetal Outcomes*."
95. WVU School of Medicine, Office of Research and Graduate Education (2021): Afternoon of Science. "*There and Back Again: An 18 Year Journey with NIOSH Colleagues*"

96. Society for Birth Defects Research & Prevention - 61st Annual Meeting (2021) – changed to online/virtual (COVID 19, in person meeting cancelled): "*Using Animal Studies to Understand Reproductive Risks Associated with Inhalation Exposures to Particles.*" Symposium Session: "Hot Topic Symposium: Assessing Reproductive Risks from Fracking and Mountaintop Mining".
97. WVU School of Medicine, Department of Physiology & Pharmacology (2021): "*State of the Department.*"
98. WVU School of Medicine, Center for Inhalation Toxicology (2021), Work in Progress: "*Validation of a Military Burn Pit Surrogate Emission Generator.*"
99. San Diego, CA. Society of Toxicology Annual Meeting (2022): Continuing Education Course, Methodological Aspects of Vascular Toxicity. "*Methodological Principles of Microvascular Toxicology*."
100. University of North Carolina, Institute for Environmental Health Solutions (2022): "*Aerosol Generation, Characterization and Inhalation Exposures at the West Virginia University Center for Inhalation Toxicology*."
101. Louisiana State University, School of Veterinary Medicine (2022): "*Maternal Nanomaterial Inhalation During Gestation: Uterine Microvascular Consequence and Placental-Fetal Impacts*."
102.

Professional Journal Activities

Editorial Board

- 2008 - pres: *Cardiovascular Toxicology* (Associate Editor)
- 2009 - 2011: *Inhalation Toxicology*
- 2009 - 2012: *Journal of Toxicology and Environmental Health*
- 2010 - current: *Nanotoxicology*
- 2011 - 2014: *Frontiers - Pharmacology*
- 2011 - pres: *Frontiers - Vascular Physiology* (Associate Editor)
- 2013 - 2019: *Toxicology and Applied Pharmacology*
- 2013 - 2016: *Life Sciences* (Editorial Advisory Board)
- 2017 – 2020: *Reproductive Toxicology*
- 2017 – pres: *Particle and Fibre Toxicology* (Associate Editor)

Ad Hoc Reviewer

- *American Journal of Physiology:*
  - *Heart and Circulatory Physiology*
  - *Lung, Cellular and Molecular Physiology*
  - *Regulatory, Integrative and Comparative Physiology*
- *American Journal of Respiratory and Critical Care Medicine*
- *Cell Biology and Toxicology*
- *Circulation*
- *Environmental Health Perspectives*
- *Environmental Science: Nano*
- *Experimental Physiology*
- *Hypertension*
- *Journal of Applied Toxicology*
- *Journal of Vascular Pharmacology*
- *Journal of Vascular Research*
- *Life Sciences*
- *Medicine and Science in Sports and Exercise*
- *Microcirculation*
- *Nanomedicine & Nanotechnology*
- *NanoImpact*
- *Particle and Fibre Toxicology*
- *Toxicology and Applied Pharmacology*
- *Toxicological Sciences*
- *WIREs Nanomedicine and Nanobiotechnology*

Publications

Peer Reviewed Manuscripts

1. **Nurkiewicz, T.R.** and M.A. Boegehold. High dietary salt attenuates arteriolar myogenic responsiveness in normotensive and hypertensive rats. *Am. J. Physiol. Heart Circ. Physiol.* 275: H2095-H2104, 1998. PMID: 9843809
2. **Nurkiewicz, T.R.** and M.A. Boegehold. Limitation of arteriolar myogenic activity by local nitric oxide: segment-specific effect of dietary salt. *Am. J. Physiol. Heart Circ. Physiol.* 277: H1946-H1955, 1999. PMID: 10564151
3. **Nurkiewicz, T.R.** and M.A. Boegehold. Reinforcement of arteriolar myogenic activity by endogenous angiotensin II: susceptibility to dietary salt. *Am. J. Physiol. Heart Circ. Physiol.* 279: H269-H278, 2000. PMID: 10899066
4. Davis, M.J., X. Wu, **T.R. Nurkiewicz**, J. Kawasaki, G.E. Davis, M.A. Hill, and G.A. Meininger. Integrins and mechanotransduction of the vascular myogenic response. *Am. J. Physiol. Heart Circ. Physiol.* 280: H1427-H1433, 2001. PMID: 11247750
5. Davis M.J., X. Wu, **T.R. Nurkiewicz**, J. Kawasaki, P. Gui, M.A. Hill, and E. Wilson. Regulation of ion channels by protein tyrosine phosphorylation. *Am. J. Physiol. Heart Circ Physiol*. 281(5):H1835-H1862, 2001. PMID: 11668044
6. Davis M.J., X. Wu, **T.R. Nurkiewicz**, J. Kawasaki, P. Gui, M.A. Hill, and E. Wilson. Regulation of ion channels by integrins. *Cell Biochemistry and Biophysics*. 36(1):41-66, 2002. PMID: 11939371
7. **Nurkiewicz, T.R**. and M.A. Boegehold. Calcium-independent release of endothelial nitric oxide: onset during rapid juvenile growth. *Microcirculation*. 11(6): 453-462, 2004. PMID: 15371127
8. **Nurkiewicz, T.R.**, D.W. Porter, M. Barger, V. Castranova and M.A. Boegehold. Particulate matter exposure impairs systemic microvascular endothelium-dependent dilation. *Environmental Health Perspectives.* 112: 1299-1306, 2004. PMID: 15345343
9. Marvar, P.J., **T.R. Nurkiewicz** and M.A. Boegehold. Reduced arteriolar responses to skeletal muscle contraction after ingestion of a high salt diet. *Journal of Vascular Research*. 42: 226-236, 2005. PMID: 15855795
10. **Nurkiewicz, T.R.**, D.W. Porter, M. Barger, L. Millecchia, K.M.K. Rao, P.J. Marvar, A.F. Hubbs, V. Castranova and M.A. Boegehold. Systemic Microvascular Dysfunction and Inflammation After Pulmonary Particulate Matter Exposure. *Environmental Health Perspectives.* 114: 412-419, 2006. PMID: 16507465
11. **Nurkiewicz, T.R**. and M.A. Boegehold. High salt intake reduces endothelium-dependent dilation of mouse arterioles via superoxide anion generated from nitric oxide synthase. *Am. J. Physiol. Regul. Integr. Comp. Physiol*. 292: R1550-1556, 2007. PMID: 17138723
12. Hendryx, M., M.M. Ahern, and **T.R. Nurkiewicz**. Hospitalization Patterns Associated with Appalachian Coal Mining. *Journal of Toxicology and Environmental Health*. Part A, 70: 2064-2070, 2007. PMID: 18049995
13. Prisby, R.D., J. Muller-Delp, M.D. Delp and **T.R. Nurkiewicz**. Age, Gender and Hormonal Status Modulate the Vascular Toxicity of the Diesel Exhaust Extract Phenanthraquinone. *Journal of Toxicology and Environmental Health*. Part A, 71:464-470, 2008. PMID: 18306094
14. **Nurkiewicz, T.R.**, D.W. Porter, A.F. Hubbs, J.L. Cumpston, B.T. Chen, D.G. Frazer, and V. Castranova. Nanoparticle Inhalation Augments Particle-Dependent Systemic Microvascular Dysfunction. *Particle and Fibre Toxicology.* 5:1, 2008. PMID: 18269765
15. **Nurkiewicz, T.R.**, D.W. Porter, A.F. Hubbs, S. Stone, B.T. Chen, D.G. Frazer, M.A. Boegehold and V. Castranova. Pulmonary Nanoparticle Exposure Disrupts Microvascular Nitric Oxide Signaling. *Toxicological Sciences.* 110(1), 191-203, 2009. PMID: 19270016
16. LeBlanc, A.J., J.L. Cumpston, B.T. Chen, D. Frazer, V. Castranova, and **T.R. Nurkiewicz**. Nanoparticle Inhalation Impairs Endothelium-Dependent Vasodilation in Subepicardial Arterioles. *Journal of Toxicology and Environmental Health*. Part A, 72: 1576-1584, 2009. PMID: 20077232
17. LeBlanc, A.J., A.M. Moseley, B.T. Chen, D. Frazer, V. Castranova, and **T.R. Nurkiewicz**. Nanoparticle Inhalation Impairs Coronary Microvascular Reactivity via a Local Reactive Oxygen Species-Dependent Mechanism. *Cardiovascular Toxicology*. 10(1): 27-36, 2010. PMID: 20033351

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105. K. L. Garner, E. C. Bowdridge, J. A. Griffith, E. DeVallance, K. Schafner, K. J. Engels, K. Wix, W. T. Goldsmith, S. Hussain, T. P. Batchelor, and **T. R. Nurkiewicz**. Nanomaterial Inhalation Exposure Alters Angiotensin II Sensitivity: Gestational Periods of Maternal and Placental Microvascular Outcomes. *The Toxicologist*. Supplement to Toxicological Sciences. Vol. 186 (S1): #4367, p. 372. 2022.
106.

Memberships

Current

- Association of Chairs of Departments of Physiology
- American Physiological Society
  - Cardiovascular Section
  - Environmental and Exercise Physiology Section
- European Society for Microcirculation
- Society of Toxicology
  - Cardiovascular Toxicology Specialty Section
  - Nanotechnology and Advanced Materials Specialty Section
  - Inhalation and Respiratory Specialty Section
  - Reproductive Toxicology Specialty Section
  - Allegheny-Erie Regional Chapter

Past

- American Association for the Advancement of Science
- Microcirculatory Society (1999-2008, 2011-2012)
- North American Vascular Biology Organization (2003-2010)

Participation in National and International Scientific Meetings

National

- Allegheny-Erie Regional Chapter of the Society of Toxicology Annual Meeting (2010-2022).
- American Chemical Society Annual Meeting (2017).
- American Physiological Society - Conference on Endothelial Regulation of Vascular Tone (1998): Augusta, GA.
- FASEB: Experimental Biology Annual Meeting (1997-2008, 2011, 2017).
- Gordon Conference – Mechanisms of Toxicity (2008): Lewiston, ME.
- Health Effects Institute: Annual Conference (2006-2009).
- Microcirculatory Society: Annual Meeting (1997-2008, 2011).
- National Institute of Environmental Health Sciences – Environmental Protection Agency Symposium on Air Pollution and Cardiovascular Disease (2010): Seattle, WA.
- National Institute of Environmental Health Sciences - Outstanding New Environmental Scientist Grantee Meeting (2011): NIEHS Campus, Research Triangle Park, NC.
- National Institute of Environmental Health Sciences - Engineered Nanomaterials Grand Opportunity Meeting (2012): NIEHS Campus, Research Triangle Park, NC.
- National Institute of Environmental Health Sciences - Outstanding New Environmental Scientist Awardee Symposium (2014): NIEHS Campus, Research Triangle Park, NC.
- National Institute of Environmental Health Sciences – Centers for Nanotechnology Health Implications Research Consortium Meeting (2015) – RTI International. Research Triangle Park, NC.
- National Institute of Environmental Health Sciences - Outstanding New Environmental Scientist Awardee Symposium (2016): NIEHS Campus, Research Triangle Park, NC.
- Role of Air Pollutants in Cardiovascular Disease, U.S. EPA/NHLBI/NIEHS Sponsored Meeting (2006): U.S. Environmental Protection Agency, Research Triangle Park, NC.
- Society of Toxicology Annual Meeting (2008-2022).
- Symposium on Pollutants and Cardiovascular Disease (2004): Louisville, KY.
- Teratology Society (2016): Annual Meeting, San Antonio, TX.
- Quantifying Exposure to Engineered Nanomaterials (QEEN) from Manufactured Products Addressing Environmental, Health, and Safety Implications (2018): Washington, DC.

International

- 20th European Conference on Microcirculation (1998): *Maison de la Chimie,* Paris, France.
- 22nd European Conference on Microcirculation (2002): *University of Exeter*, Exeter, England.
- 35th Congress of the International Union of Physiological Sciences (2005): San Diego, CA.
- 8th International Meeting on Particles, Fibers and Nanoparticles in Lung and Cardiovascular Disease (2005): U.S. Environmental Protection Agency, Research Triangle Park, NC.
- 8th World Congress for Microcirculation (2007): Milwaukee, WI.
- 25th European Conference on Microcirculation (2008): *Budapest University of Technology and Economics*, Budapest, Hungary.
- 9th World Congress for Microcirculation (2010): *Maison de la Chimie,* Paris, France.
- Joint Meeting of the European Society for Microcirculation and the German Society of Microcirculation and Vascular Biology (2011): *Ludwig-Maximilians-University,* Munich, Germany.
- 13th International Congress on Combustion By-Products and Their Health Effects (2013): New Orleans, LA.
- Bioelectronics and Biosensing International Symposium (2014): Morgantown, West Virginia.
- 8th International Nanotoxicology Congress, *NanoTox* (2016): Boston, Massachusetts.
- 8th International Symposium on Nanotechnology, Occupational and Environmental Health (2017). Elsinore, Denmark.
- 9th International Nanotoxicology Congress, *NanoTox* (2018): Neuss Germany.

Mark Paternostro
917 Louise Ave
Morgantown, WV 26505
304-282-0176
Email mpaternostro@hsc.wvu.edu

Current Faculty Appointments:

WVU Department of Physiology & Pharmacology, Teaching Professor
2008-present

- Teaching physiology to undergraduate, graduate, and medical professional students (specific courses taught can be found at the end of the document)

Associate Chair for Education
2012-present

- Develop and oversee educational activities including peer-evaluation, teaching and learning staff developmental opportunities and curriculum development

Education and Training:

Postdoctoral Research Fellow, 1992-1994
Neurobiological and Behavioral Development, University of Virginia, Charlottesville, VA

M.S. and Ph.D., 1986-1992
University of Illinois at Urbana-Champaign, Department of Physiology Thesis: Developmental Influences of Thyroid Hormones on the Rat Olfactory Receptor Sheet

B.A., Biology, 1981-1985
Kenyon College, Gambier, Ohio

Honors and Awards:

- WVU Foundation Award for Outstanding Teaching, 2022. Recognize developing or established patterns of distinguished teaching and/or exceptional innovation in teaching methods, course and curriculum design, and instructional tools.
- Percival L. MacLachlan Basic Sciences Award as selected by the second-year medical students in recognition of excellence in teaching basic medical sciences, 2022
- WVU Distinguished Teacher Award in the M.D. Degree, Senior-level category, 2021
- WVU Health Sciences Vice President's Award for Outstanding Achievement in Teaching, 2016
- Percival L. MacLachlan Basic Sciences Award as selected by the second-year medical students in recognition of excellence in teaching basic medical sciences, 2012
- West Virginia School of Medicine Distinguished Teacher Award, 2009
- Elected to Academy of Teaching and Learning Excellence, WVU School of Medicine, 2009
- Alpha Phi Foundation Professor of the Year Award, James Madison University, 2001
- National Research Service Postdoctoral Fellowship from NIH, 1994

- NIH Neurobiological and Behavioral Development Postdoctoral Training Grant at the University of Virginia, 1992-1994
- Recipient of the NIH Systems and Integration Training Grant at the University of Illinois, 1989-1992

Association of College and University Educators (ACUE)

- Selected to be a featured faculty expert in a national program highlighting best practices in teaching. This program designed by the Association of College and University Educators (ACUE) helps college educators develop essential, research-based teaching skills shown to promote student success. Faculty who complete the online course requirements earn a certificate in Effective College Instruction endorsed by the American Council on Education and the ACUE.
- Footage from my lectures and interviews of me and students were packaged into modules as part of the program. Information can be found at the following links:
    - https://acue.org/ **(organization website)**
    - https://acue.org/course/experts-and-faculty/ **(faculty profiles)**
    - https://acue.org/module/providing-clear-directions-and-explanations/ **(sample video of my participation at 40 second mark)**

Previous Employment:

Academic Affairs Administration at the Pennsylvania College of Technology

2004-2008 *Associate Vice President Academic Services, Pennsylvania College of Technology*

Responsibilities and duties:

- Oversee college-wide academic probation-retention activities
- Provide leadership and supervise the office of the Registrar
- Provide leadership and supervise Academic Support Services
- Cost center administrator Perkins Budget
- Oversee instructional technology and distance learning
- Oversee freshmen placement testing, ensure integration with other college activities
- Provide leadership, guidance in the development of computerized placement testing
- Development and administrative oversight of the college's Honors Program

2001-2004 *Assistant Dean, School of Integrated Studies, Pennsylvania College of Technology*

Responsibilities and duties:

- Orient, schedule and advise new students; adjudicate student-faculty issues
- Coordinate and supervise student probationary processes
- Manage program recruitment and retention activities
- Coordinate program evaluations/curriculum revisions for specified academic programs
- Manage departmental operating budgets and purchasing process
- Evaluate non-probationary full-time faculty and adjunct faculty

- Supervise science and media arts facilities and equipment usage
- Develop master schedule of classes
- Develop and facilitate staff development and orientation for part-time faculty and staff

Fulltime Teaching:

1999-2001 *Assistant Professor, Biology Department, James Madison University*

Teaching duties:

- Pathophysiology taught to physician assistant majors
- Functional Anatomy using cadavers taught to occupational therapy majors
- Functional Neuroscience taught to occupational therapy majors
- Advanced Human Anatomy focusing on dissection techniques
- Introductory Human Anatomy using cadavers

1994-1999, *Assistant Professor, Natural Sciences Department, Pennsylvania College of Technology*

- Clinical Anatomy using cadavers taught to physician assistant majors
- Introductory courses in Anatomy and Physiology
- Exercise Physiology and Applied Nutrition

Recent Educational Publications:

Paternostro, Mark. (2019, March 3). 4 Ways to Lecture Beyond the Bullet Points [Blog post]. Retrieved from https://community.acue.org/blog/4-ways-to-lecture-beyond-the-bullet-points/

Paternostro, Mark (2017) Kaplan NBDE Part I Lecture Notes, reviewed and updated for currency and exam fidelity.

Paternostro, Mark (2016) Content creator for digital test bank (500 questions) to accompany Community Nutrition in Action, 7th edition by Marie Boyle; ISBN 9781305637993.

Paternostro, Mark (2015) Content creator for Student Study Guide to accompany Biology: The Dynamic Science, 3rd edition by Peter Russell et al., ISBN-10: 1133587550.

Paternostro, Mark (2014) Content creator for digital test bank (2,500 questions) to accompany Human Biology, 11th edition by Cecie Starr, ISBN 978-1-305-11210-0.

Paternostro, Mark (2014) Content creator for new online student-instructor digital platform including student study guide and instructor manual to accompany Human Biology, 11th edition by Cecie Starr, ISBN 978-1-305-11210-0.

Paternostro, Mark (2014) Content creator for physiology case studies to accompany Human Physiology from Cells to Systems, 8th edition by Laurie Sherwood, ISBN 978-1-305-27347-4.

Paternostro, Mark (2014) "Tell Me How Things Work" an essay included in Physiology for the Curious: Why Study Physiology, ISBN 978-1-925-12865-9.

Recent Educational Presentations:

Paternostro, Mark (2022) Teaching Tips for Student Success, WVU Celebrate Teaching, Learning and Research. Sponsored by the Teaching and Learning Commons.
https://celebrate.wvu.edu/sessions/2022/student-success

Paternostro, Mark (2022) Creating Effective and Engaging Medical Lectures, Transitional Year Residency Program, Ruby Memorial Hospital

Paternostro, Mark (2021) Creating Effective and Engaging Medical Lectures, Transitional Year Residency Program, Ruby Memorial Hospital

Paternostro, Mark (2019) Beyond the Bullet Points: Rethinking the Traditional Lecture, WVU Celebrate Teaching, May 2019.

Paternostro, Mark (2018) Creating Engaging, Interactive Large Group Lectures. West Virginia University teaching Scholars Summer Institute, June 2018.

Paternostro, Mark (2017) Creating Engaging, Interactive Large Group Lectures. West Virginia University Teaching Scholars Summer Institute, June 2017.

Linda S. Nield MD, Alyson Carpenter BA, Mark Paternostro PhD, Scott Cottrell Ed D, Norman D. Ferrari III (2016) Audience Response System-Generated Report Cards: Novel Tool to Monitor Performance of Admission Committee Members, AAMC annual meeting, Seattle, WA. Poster presentation.

Paternostro, Mark (2016) Creating Engaging, Interactive Large Group Lectures. West Virginia University Teaching Scholars Summer Institute, June 2016.

Paternostro, Mark (2015) Creating Engaging, Interactive Large Group Lectures. West Virginia University Teaching Scholars Summer Institute, June 2015.

Paternostro, Mark (2015) Lecture Is the Only Way...or is it? Strategies for Teaching Large Classes, Celebrate Teaching sponsored by the Office of the Provost and WVU Academic Innovation's Teaching and Learning Commons, May 2015

Paternostro, Mark (2015) Creating Engaging, Interactive Large Group Lectures. West Virginia University Teaching and Learning Commons, April 2015.

Paternostro, Mark (2015) How Life Interferes with Student Success. West Virginia University Teaching and Learning Commons, March 2015.

Hannah W. Hazard, MD; Scott Cottrell, Ed D; Mark Paternostro, PhD; Lauren Wamsley, MPH; Norman Ferrari, MD; (2014) Holistic Review, Audience Response System and Medical School Admissions Process at West Virginia University School of Medicine. AAMC annual meeting, Chicago, IL, Poster presentation.

Paternostro, Mark (2014) Aligning Learning Objectives with Assessments. WVU Graduate Academy Workshop Series. October 2014.

Paternostro, Mark (2014) Creating Engaging, Interactive Large Group Lectures. Invited speaker, Florida A&M, Department of Pharmacology and Pharmaceutical Sciences Faculty Development Workshop, August 2014.

Paternostro, Mark (2014) Creating Engaging, Interactive Large Group Lectures. West Virginia University Teaching Scholars Summer Institute, June 2014.

Paternostro, Mark (2014) How Life Interferes with Student Success. West Virginia University Teaching and Learning Commons, March 2014.

Summary of Courses Taught at WVU

Course	Topics	Didactic Hours	Student Population
PSIO 241, Elementary Physiology Course Coordinator, Sole Instructor Note: In the summer I offer this course online, asynchronous	Entire course	70 lecture hours	Undergraduate health sciences majors, enrollment 250-275 For online version, enrollment 75
PSIO 441 Mechanism of Body Functions Course Coordinator. Sole Instructor	Entire course	60 lecture hours	Undergraduate health sciences majors, enrollment 150
PSIO 541, Integrative Physiology, Course Director, Sole Instructor	Entire course	These students are part of the PSIO 441, 60 hours of lecture. I then teach and 15 additional hours of more advanced concepts	Pharm D students enrollment 60
PSIO 580, Systems Physiology, Course director, Sole Instructor	Entire course This is an asynchronous, online course	50 lecture hours of pre-recorded videos	MS students in various HSC programs, enrollment 5-10
PSIO 750, Graduate Physiology and Pharmacology I, Course Director and Primary Instructor	Pulmonary and Renal Physiology	24 hours of flipped classroom-style, small group discussions with students	Students in various HSC doctoral programs
PSIO 790, Teaching Practicum, Course Director, Sole Instructor	Entire Course	30 hours of mixed didactic, small group work	Students in various HSC doctoral programs
PSIO 820, Medical Physiology, Course Director and Primary Instructor	Cardiovascular, Fluid Balance, Renal, Pulmonary, Acid-Base and Endocrinology	43 lecture hours	Second-year medical students, enrollment 110

Rec'd 9/6/11

CURRICULUM VITAE

Dale Wayne Porter, Ph.D.

Date of Preparation: 6 September 2011

Home Address: 1271 Forman Drive, Morgantown, WV 26508

Home Telephone: 304-291-3928

Office Address: National Institute for Occupational Safety and Health
Health Effects Laboratory Division
Pathology and Physiology Research Branch
1095 Willowdale Road
Morgantown, WV 26505

Office Telephone: 304-285-6320

Office FAX Number: 304-285-6389

Office E-Mail: DPorter@cdc.gov

EDUCATION

Bachelor of Science (B.S.) in Biology (Minor in Chemistry). Allegheny College, June 1986.

Master of Science (M.S.) in Agricultural Biochemistry. West Virginia University, December 1988.

Doctor of Philosophy (Ph.D.) in Biochemical Genetics. West Virginia University, May 1992.

POST-GRADUATE TRAINING

National Research Council Research Associate. Pharmacology Division, United States Army Medical Research Institute of Chemical Defense, 3100 Ricketts Point Road, Aberdeen Proving Ground, MD 21010-5425. June 1992-March 1995. Mentor: Dr. Steven I. Baskin

National Cancer Institute Intramural Research Associate. National Cancer Institute-FCRDC, Division of Basic Sciences, Laboratory of Comparative Carcinogenesis, Bldg 538 Room 205, Frederick, MD 21702. March 1995-October 1996. Mentor: Dr. Kazimierz Kasprzak

EMPLOYMENT

National Research Council. Position: Research Associate. Pharmacology Division, United States Army Medical Research Institute of Chemical Defense, 3100 Ricketts Point Road, Aberdeen Proving

11/12-1005

Ground, MD 21010-5425. June 1992-March 1995.

National Cancer Institute. Position: Intramural Research Associate. National Cancer Institute - FCRDC, Division of Basic Sciences, Laboratory of Comparative Carcinogenesis, Bldg 538 Room 205, Frederick, MD 21702. March 1995-October 1996.

National Institute for Occupational Safety and Health. Position: Research Biologist. National Institute for Occupational Safety and Health, Health Effects Laboratory Division, Pathology and Physiology Research Branch, 1095 Willowdale Road, Morgantown, WV 26505. October 1996-present.

West Virginia University. Position: Adjunct Assistant Professor. West Virginia University, College of Agriculture, Forestry, and Consumer Sciences, Division of Animal and Veterinary Sciences, P.O. Box 6108, Morgantown, WV 26505. July 1999-present.

West Virginia University. Position: Adjunct Assistant Professor. West Virginia University, Robert C. Byrd Health Sciences Center, Department of Physiology and Pharmacology, P.O. Box 9229, Morgantown, WV 26506. May 2002-present.

HONORS AND AWARDS

Robert E. Bugbee Award presented by Allegheny College for demonstrated excellence in research in the field of Biology, 1986.

Honorable Mention, Alice Hamilton Science Award for Occupational Safety and Health, presented by the National Institute for Occupational Safety and Health, 1991.

Independent Laboratory Innovative Research Award granted by the Department of Defense, 1994.

Best Methodology Award presented by the Allegheny-Erie Regional Chapter of the National Society of Toxicology, 1998.

Special Act Award (Flock Workers Project Team) awarded by National Institute for Occupational Safety and Health, 1999.

On-The-Spot Award presented by the National Institute for Occupational Safety and Health, 1999.

Honorable Mention, Alice Hamilton Science Award for Occupational Safety and Health, presented by the National Institute for Occupational Safety and Health, 2002.

Nominated for the Charles C. Shepard Science Award by the Centers for Disease Control and Prevention, 2002.

Honorable Mention, Alice Hamilton Science Award for Occupational Safety and Health, presented

by the National Institute for Occupational Safety and Health, 2005.

Nominated for the Charles C. Shepard Science Award by the Centers for Disease Control and Prevention, 2007.

Bullard-Sherwood Award for Research-to-Practice Award by the Centers for Disease Control and Prevention, 2008

Alice Hamilton Science Award for Occupational Safety and Health, presented by the National Institute for Occupational Safety and Health, 2010.

Nominated for the Charles C. Shepard Science Award by the Centers for Disease Control and Prevention, 2010.

PROFESSIONAL ACTIVITIES

Member, National Society of Toxicology, 1997-present.

Member, Allegheny-Erie Regional Chapter of the National Society of Toxicology, 1998-present.

Member, Allegheny-Erie Regional Chapter of the National Society of Toxicology Awards Committee, 1998-2000.

Member, Allegheny-Erie Regional Chapter of the National Society of Toxicology Education Committee, 2000 - 2001.

Ad Hoc reviewer for Carcinogenesis, Archives of Environmental Contamination and Toxicology, Antioxidants & Redox Signaling, Journal of Cellular Biochemistry, Respirology, Journal of Toxicology and Environmental Health Part A, Toxicology and Applied Pharmacology, Toxicological Sciences, Toxicology Letters, FEBS Journal, Free Radical Biology & Medicine, American Journal of Industrial Medicine, Materials Science and Engineering: C Biomimetic and Supramolecular Systems, Nano Letters, Particle & Fibre Toxicology, 1998-present.

Co-chairperson, poster session at 2000 Annual Meeting of the National Society of Toxicology.

President-Elect, Allegheny-Erie Regional Chapter of the National Society of Toxicology, 2001-2002.

President, Allegheny-Erie Regional Chapter of the National Society of Toxicology, 2002-2003.

Member, National Society of Toxicology Inhalation Specialty Section Technical Committee, 2002-present.

Member, NIOSH Institutional Animal Care and Use Committee (IACUC), 2002-present.

Member, West Virginia University Systems Biology Initiative Committee (NIOSH representative), 2003-present.

Lecturer, West Virginia University, Department of Physiology and Pharmacology, Physiology 241, 2003-present.

Lecturer, West Virginia University, Department of Physiology and Pharmacology, Pharmacology 562, 2004-present.

Veteran's Administration (VA) Panelist, Merit Review of Gulf War and Deployment Health Review Panel, Washington, DC, September 14-15th, 2004.

National Institutes of Health (NIH) Panelist, Nanotechnology and Nanoscience Special Emphasis Review Panel, Bethesda, MD, July 11-12th, 2005.

Member, NIOSH 800 Number Contact List for Nanotechnology (Toxicology and Health Effects), 2005-present

Co-chairperson, poster session at 2008 Annual Meeting of the National Society of Toxicology.

Treasurer, National Society of Toxicology Inhalation and Respiratory Specialty Section, 2009-2010.

Member, Organisation for Economic Co-operation and Development (OECD), The OECD Nanosafety Team, SG4 Task Group on Guidance Notes on Sample Preparation and Dosimetry for the Safety Testing of Manufactured Nanomaterials (GNSPD), 2011-present

INVITED PRESENTATIONS

"Inhibitor Studies of the Cyanide Detoxifying Enzyme 3-Mercaptopyruvate Sulfurtransferase" presented at U.S. Army Medical Research Institute of Chemical Defense, Edgewood, MD, August 31, 1993.

"Enzyme Kinetic Studies of 3-Mercaptopyruvate Sulfurtransferase" presented at the National Cancer Institute, Frederick, MD, September 29, 1994.

"Pulmonary Responses to Long-Term Silica Exposure" presented at the National Institute for Occupational Safety and Health, Health Effects Laboratory Division, Morgantown, WV, May 1, 1997.

"An In Vivo Investigation of Short-Term Pulmonary Responses to Nylon Fibers" presented at the National Institute for Occupational Safety and Health, Division of Respiratory Disease Studies, Morgantown, WV, November 19, 1997.

"Pulmonary Responses to Inhalation of Silica" presented at National Institute for Occupational

Safety and Health, Health Effects Laboratory Division, Morgantown, WV, June 25, 1998.

"Biochemical Mediators and Molecular Mechanisms of Lung Damage and Fibrosis after Inhalation of Silica" presented at National Institute for Occupational Safety and Health, Division of Applied Research and Technology, Cincinnati, OH, August 17, 1998.

ALAT Spring Course, "Research: Beginning to End", presented at National Institute for Occupational Safety and Health, Health Effects Laboratory Division, Morgantown, WV, February 1, 2000.

"Lung Inflammation and Damage after Silica Inhalation in Rats: Is There Recovery" presented at West Virginia University, School of Medicine, Department of Physiology, Morgantown, WV, February 28, 2002.

"Lung Inflammation and Damage after Silica Inhalation in Rats: Is There Recovery" presented at West Virginia University, School of Medicine, Basic Sciences and Research Conference, Morgantown, WV, April 2, 2002.

"Silica-Induced Pulmonary Disease: New Insights" presented at National Institute for Occupational Safety and Health, Health Effects Laboratory Division, Inflammation Interest Group Seminar Series, Morgantown, WV, February 10, 2003.

"Particulate Handling in the Human Lung" presented at National Aeronautics and Space Administration (NASA) Workshop "Biological Effects of Lunar Dust", Sunnyvale, CA, March 29-31, 2005.

"Toxicity of Ultrafine Particles", presented at the 21st Annual Kentucky Governor's Safety and Health Conference and Exposition, Louisville, KY, May 11, 2005.

"Toxicity of Ultrafine Particles", presented at the Western Pennsylvania Chapter of The American Society of Safety Engineers, Indiana University of Pennsylvania, October 20, 2005.

"Overview of NIOSH Nanotoxicology Research", presented at the Michigan Regional Chapter of the Society of Toxicology, Augusta, MI, May 19, 2006.

"MWCNT Toxicity in the Lung", presented at NIOSH (Morgantown, WV) to the Japanese METI Delegation, February 29, 2009.

"Pulmonary Dose- and Time Course Responses Induced by Exposure to Multi-Walled Carbon Nanotubes", presented at US EPA, Washington, DC, November 9-10, 2009.

"Introduction to Nanotoxicology: An Emerging Field", presented at Pittsburgh AIHA Local Section, Pittsburgh, PA, April 6, 2011.

JOURNAL ARTICLES

1. **D.W. Porter**, M.A. Banks, V. Castranova and W.G. Martin. Reversed-phase high performance liquid chromatography technique for taurine quantitation. Journal of Chromatography. 454: 311-316, 1988.

2. M.A. Banks, **D.W. Porter**, W.G. Martin and V. Castranova. Effects of *in vitro* ozone exposure on peroxidative damage, membrane leakage and taurine content of rat alveolar macrophages. Toxicology and Applied Pharmacology. 105: 55-65, 1990.

3. **D.W. Porter**, W.G. Martin, P. Lee and W. Kaczmarczyk. Calcium transport in chicken leukocytes and erythrocytes. Comparative Biochemistry and Physiology. 95A: 453-457, 1990.

4. M.A. Banks, **D.W. Porter**, W.G. Martin and V. Castranova. Ozone-induced lipid peroxidation and membrane leakage in isolated rat alveolar macrophages: protective effects of taurine. Journal of Nutritional Biochemistry. 2: 308-313, 1991.

5. M.A. Banks, **D.W. Porter**, W.H. Pailes, D. Schwegler-Berry, W.G. Martin and V. Castranova. Taurine content of isolated rat alveolar type I cells. Comparative Biochemistry and Physiology. 100B: 795-799, 1991.

6. **D.W. Porter**, S.A. Walker, W.G. Martin, P. Lee and W. Kaczmarczyk. Taurine uptake in chicken leukocytes and erythrocytes. Comparative Biochemistry and Physiology. 98A: 305-309, 1991.

7. **D.W. Porter** and W.G. Martin. Taurine flux in chicken erythrocytes. Comparative Biochemistry and Physiology. 102A: 117-122, 1992.

8. **D.W. Porter** and W.G. Martin. Taurine uptake into chick B cells. Proceedings of the Society for Experimental Biology and Medicine. 199: 243-248, 1992.

9. E.U. Maduh, **D.W. Porter** and S.I. Baskin. Calcium antagonists: a role in the management of cyanide poisoning? Drug Safety. 9: 237-248, 1993.

10. **D.W Porter**, W. Kaczmarczyk and W.G. Martin. The effect of taurine on the incorporation of thymidine by chick B-cells. Comparative Biochemistry and Physiology. 106B: 251-254, 1993.

11. **D.W. Porter** and W.G. Martin. Taurine regulation of Ca^{2+} uptake and $(Ca^{2+} + Mg^{2+})$-ATPase in developing chick B-cells. Comparative Biochemistry and Physiology. 106A: 309-312, 1993.

12. X. Qin, H. Klandorf, **D.W. Porter**, S.B. Holt and W.G. Martin. Estrogen enhancement of Ca-, Mg-, and Ca-Mg-stimulated adenosine triphosphatase activity in the chick shell gland. General and Comparative Endocrinology. 89: 4-10, 1993.

13. M.A. Banks, **D.W. Porter**, W.G. Martin and J.F. Gregory. Dietary vitamin B_6 effects on the

distribution of intestinal mucosal and microbial β-glucosidase activities toward pyridoxine-5'-β-D-glucoside in the guinea pig. Journal of Nutritional Biochemistry. 5: 238-242, 1994.

14. C.R. Clark, **D.W. Porter**, J.C. Anders and C.N. Lieske. Safer sulfurtransferase studies using glyoxal. Chemical Health and Safety. 1: 36-38, 1994.

15. **D.W. Porter** and S.I. Baskin. Specificity studies of 3-mercaptopyruvate sulfurtransferase. The Journal of Biochemical Toxicology. 10: 287-292, 1995.

16. **D.W. Porter** and S.I. Baskin. The effect of three α-keto acids on 3-mercaptopyruvate sulfurtransferase activity. The Journal of Biochemical Toxicology. 11: 45-50, 1996.

17. **D.W. Porter**, E.W. Nealley and S.I. Baskin. *In vivo* detoxification of cyanide by cystathionase γ-lyase. Biochemical Pharmacology. 52: 941-944, 1996.

18. **D.W. Porter**, V.C. Nelson, M.J. Fivash Jr. and K.S. Kasprzak. Mechanistic studies of the inhibition of MutT dGTPase by the carcinogenic metal Ni(II). Chemical Research in Toxicology. 9: 1375-1381, 1996.

19. **D.W. Porter**, H. Yakushiji, Y. Nakabeppu, M. Sekiguchi, M.J. Fivash Jr. and K.S. Kasprzak. Sensitivity of Escherichia coli (MutT) and human (MTH1) 8-oxo-dGTPases to *in vitro* inhibition by the carcinogenic metals, nickel(II), copper(II), cobalt(II) and cadmium(II). Carcinogenesis. 18: 1785-1791, 1997.

20. X. Shi, D.C. Flynn, **D.W. Porter**, S.S. Leonard, V. Vallyathan and V. Castranova. Efficacy of taurine based compounds as hydroxyl radical scavengers in silica induced peroxidation. Annals of Clinical and Laboratory Science. 27: 365-374, 1997.

21. M. Sacks, J. Gordon, J. Bylander, **D. Porter**, X.L. Shi, V. Castranova, M.J. Reasor, W. Kaczmarczyk and K. VanDyke. Silica-induced pulmonary inflammation in rats: activation of NF-κB and its suppression by dexamethasone. Biophysical and Biochemical Research Communications. 253: 181-184, 1998.

22. S.I. Baskin, **D.W. Porter**, G.A. Rockwood, J.A. Romano, H.C. Patel, R.C. Kiser, C.M. Cook and A.L. Ternay. *In vitro* and *in vivo* comparison of sulfur donors as antidotes to acute cyanide intoxication. Journal of Applied Toxicology. 19: 173-183, 1999.

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V. Castranova and M.I. Luster. Neuroinflammatory responses following exposure to engineered nanomaterials. The Toxicologist. 2007. A1390.

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69. T.R. Nurkiewicz, **D.W. Porter**, A.F. Hubbs, L. Millecchia, M. Donlin, B.T. Chen, D. Frazer, V. Castranova. Nanoparticle Inhalation Attenuates Systemic Microvascular Endothelium-Dependent Nitric Oxide Production. Microcirculation, 14(4-5), IA-20, 470, 2007.

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71. J.R. Roberts, J.M. Antonini, **D.W. Porter**, V. Castranova, R.R. Mercer. Characterization of pulmonary responses following treatment of rats with fluorescently-labeled quantum dots with different surface functional groups. American Thoracic Society International Conference, Toronto, ON, May 2008. Am J Respir Crit Care Med 117, A49, 2008.

72. **D.W. Porter**, A. Holian, K. Sriram, N. Wu, M. Wolfarth, R. Hamilton and M. Buford. Engineered titanium dioxide nanowire toxicity in vitro and in vivo. The Toxicologist. 2008. 102(1): 306.

73. T.R. Nurkiewicz, **D.W. Porter**, A.F. Hubbs, B.T. Chen, D. G. Frazer, and V. Castranova. Ultrafine particulate matter inhalation attenuates microvascular endothelial nitric oxide production. The Toxicologist. 2008. 102(1): 258.

74. T. Sager, **D. Porter**, and V. Castranova. Pulmonary response to intratracheal instillation of fine and ultrafine carbon black or titanium dioxide: role of surface area. The Toxicologist. 2008. 102(1):

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75. R. Hamilton, **D.W. Porter**, M. Buford, K. Sriram, N. Wu, M. Wolfarth and A. Holian. Engineered titanium dioxide nanoparticle bioactivity and toxicity are dependent on particle length and shape. Presented at Nanotoxicology-2nd International Conference, Zurich, Switzerland. September 7-10, 2008.

76. A.F. Hubbs, R.R. Mercer, K. Sriram, V. Castranova, B.T. Chen, W. McKinney, D.G. Frazer, L. Battelli, J. Scabilloni, D. Schwegler-Berry, and **D. Porter**. Acute respiratory toxicologic pathology of inhaled multi-walled carbon nanotubes. Veterinary Pathology. 2008. 45: 786.

77. M. Wolfarth, **D.W. Porter**, A.F. Hubbs, S.S. Leonard, L.A. Battelli, M.E. Andrew and V. Castranova. Pulmonary toxicity of multi-walled carbon nanotubes. The Toxicologist. 2009. 108: 457.

78. **D.W. Porter**, M. Wolfarth, T.B Chen, W. McKinney, A.F. Hubbs, L.A. Battelli, M.E. Andrew, D.G. Frazer and V. Castranova. Pulmonary toxicity of inhaled multi-walled carbon nanotubes. The Toxicologist. 2009. 108: 457.

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80. K. Sriram, **D.W. Porter**, A.M. Jefferson, G.X.Lin, M. Wolfarth, T.B. Chen, W. McKinney, D.G. Frazer, V. Castranova. Neuroinflammation and blood-brain barrier changes following exposure to engineered nanomaterials. The Toxicologist. 2009. 108: 458.

81. A.F. Hubbs, R.R. Mercer, J.E. Coad, L.A. Battelli, P. Willard, K. Sriram, M. Wolfarth, V. Castranova, and **D.W. Porter**. Persistent pulmonary inflammation, airway mucous metaplasia and migration of multi-walled carbon nanotubes from the lung after subchronic exposure. The Toxicologist. 2009. 108: 457.

82. B.T. Chen, J.L. Cumpston, A.M. Moseley, S. Stone, D. Schwegler-Berry, **D.W. Porter**, A.F. Hubbs, D.G. Frazer, V Castranova and T Nurkiewicz. Particle-associated systemic microvascular dysfunction. Presented at the 28th Annual Conference of the American Association for Aerosol Research, October 25-30, 2009, Minneapolis, MN. Abstract session #7, abstract #7.1.27

83. R.R. Mercer, A.F Hubbs, J. Scabilloni, L. Wang, V. Castranova and **D. W. Porter**. Distribution and Persistence of Pleural Penetrations by Multi-Walled Carbon Nanotubes. Am J Respir Crit Care Med. 2010. 181(1):A3102.

84. M. Pacurari, Y. Qian, **D.W. Porter**, M. Wolfarth, L. Dajie, C. Xiao, V. Castranova and N. Guo. Gene expression signature in the mouse lung in response to multi-walled carbon nanotubes exposure. Presented at the Allegheny-Erie Regional Chapter of the Society of Toxicology Annual Meeting (Pittsburgh, PA), April 30, 2010.

85. Y. Qian, P.L. Apopa, N.L. Guo, D. Schwegler-Berry, M. Pacurari, **D. Porter**, X. Shi, V. Castranova and D.C. Flynn. Iron oxide nanoparticles induce human microvascular endothelial cell permeability through reactive oxygen species production and microtubule remodeling. Presented at the 6th Conference on Molecular Mechanisms of Metal Toxicity and Carcinogenesis, Lexington, KY, Nov 14-17, 2010.

86. M. Wolfarth, W. McKinney, T.B Chen, V. Castranova and **D.W. Porter**. Acute pulmonary responses to MWCNT inhalation. The Toxicologist. 2011. 120: 10.

87. M. Pacurari, Y. Qian, A. Hubbs, **D. Porter**, M. Wolfarth, D. Luo, Y. Wan, V. Castranova and N. Guo. Multi-wall carbon nanotube-(MWCNT)-induced gene expression in the mouse lung: Implication of carcinogenesis risk. The Toxicologist. 2011. 120: 253-254.

88. R. Mercer, A.F. Hubbs, J.F. Scabilloni, L. Rojanasakul, L.A. Battelli, V. Castranova and **D.W. Porter**. Pulmonary fibrotic response to sub-chronic multi-walled carbon nanotube exposure. The Toxicologist. 2011. 120: 11.

89. T.M. Sager, M. Wolfarth, **D. Porter**, V. Castranova, N. Wu and A. Holian. Effect of surface modification on the bioavailability and inflammatory potential of multi-walled carbon nanotubes. The Toxicologist. 2011. 120: 252.

90. **D.W. Porter**, M.G. Wolfarth, N. Wu, A. Holian, A. Hubbs, K.A. Funk and V. Castranova. Effect of engineered titanium dioxide nanoparticle shape on toxicity in vivo. The Toxicologist. 2011. 120: 312.

91. F. Yang and **D. Porter**. Efficient design of biological experiments for dose-response modeling in toxicology studies. The Toxicologist. 2011. 120: 102.

92. A. Hubbs, V. Castranova, B.T. Chen, D.G. Frazer, W. McKinney, R.R. Mercer, M.L. Kashon, L.A. Battelli, P. Willard and **D.W. Porter**. Pulmonary inflammation, epithelial hyperplasia, and lymph node translocation after multi-walled carbon nanotube inhalation. The Toxicologist. 2011. 120: 11.

93. L.A. Battelli, V. Castranova, **D.W. Porter**, S. Friend, D. Schwegler-Berry, P. Willard and A.F. Hubbs. The use of E-cadherin immunofluorescence in pulmonary toxicologic pathology studies. The Toxicologist. 2011. 120:123.

94. K. Sriram, **D.W. Porter**, J.M. Antonini, G.X. Lin and A.M. Jefferson. Neurological risks of exposure to engineered and incidental nanoparticles: Prevention through product or process modification. NORA Manufacturing Sector Conference: Partnerships to Improve Occupational Safety and Health, Cincinnati OH, Sept 7-8, 2011.

95. A.F. Hubbs, A.M. Cumpston, E.J. Zaccone, M.P. Goravanahally, J.B. Morris, R.D. Dey, W.T.

Goldsmith, M.C. Jackson, D. Frazer, M.L. Kashon, **D.W. Porter**, L.M. Sargent, V. Castranova, K. Sriram, K. Kreiss, R.P. Streicher, R.R. Mercer, L.A. Battelli, K.T. McKinstry, T. Munro, J.A. Thompson and J.S. Fedan. Pathophysiology of Popcorn Workers' Lung: Practical Implications of Animal Studies. NORA Manufacturing Sector Conference: Partnerships to Improve Occupational Safety and Health, Cincinnati OH, Sept 7-8, 2011.

96. A.F. Hubbs, R. Mercer, L. Sargent, V. Castranova, K. Sriram, L.A. Battelli, D.W. Porter. Nanoparticulate Pathology. The American College of Veterinary Pathologists 62nd Annual Meeting, Nashville, TN, December 3-7, 2011.

INTRA-MURAL PROJECTS

Source: HELD
Title: Pulmonary Toxicity of Metal Oxide Nanospheres and Nanowires
Award period: 10/01/2006-09/30/2010
Role: PI

Source: NTRC
Title: Investigations of Multi-Walled Carbon Nanotube Toxicity
Award period: 10/01/2006-09/30/2009
Role: PI

Source: NTRC
Title: Toxicological Effects of Aerosolized MWCNT
Award period: 10/01/2009-09/30/2012
Role: PI

EXTRA-MURAL PROJECTS

Porter, D.W. Co-PI with Nianqiang Wu (lead, West Virginia University), National Science Foundation, CBET-0834233; September 1, 2008 – August 31, 2011; $300,000; "Correlation among Physicochemical Properties, Photochemical Fate and Toxicity of TiO_2 Nanoparticles".

Porter, D.W. Co-PI with Andrij Holian (lead, University of Montana), National Institutes of Environmental Health Sciences, RC2 ES018742-01: June 30, 2009 – September 29, 2011; $900,000; "Bioactivity of Engineered Fiber-Shaped Nanomaterials".

Porter, D.W. Co-PI with Tim Nurkiewicz (lead, West Virginia University), National Institute of Environmental Health Sciences, 1RC1ES018274: September 25, 2009 – June 30, 2011; $1,000,000; "Microvascular Health and Nanoparticle Exposure".

Porter, D.W. Co-PI with Feng Yang (lead, West Virginia University), National Science Foundation, CBET-1065931; May 15, 2011 - April 30, 2014; $196,815; "Efficient Design of Biological Experiments for Dose-Response Modeling in Nanomaterial Toxicology Studies".

CURRICULUM VITAE

(September, 2021)

MARK J. REASOR, Ph.D.

OFFICE ADDRESS 676 Kenwood Place
Morgantown, WV 26505

Phone (304) 598-0227
Cell (304) 376-4565
e-mail mjreasor@msn.com

TITLE Professor Emeritus of Physiology and Pharmacology
West Virginia University School of Medicine
Morgantown, WV 26506

BIRTHDATE November 3, 1945; Evansville, Indiana

EDUCATION AND TRAINING

Undergraduate Purdue University, West Lafayette, Indiana, B.S.,
Biochemistry
1963-1967

Graduate
1967-1969 Duke University, Durham, North Carolina, M.A., Biochemistry

1971-1975 The Johns Hopkins University School of Hygiene and Public Health
Department of Environmental Medicine, Baltimore, Maryland
Ph.D., Biochemical Toxicology

Postdoctoral National Institute of Environmental Health Sciences, Pharmacology
1975-1976 Branch, Research Triangle Park, North Carolina

Sabbatical Visiting Scholar, Department of Medicine, University of California
1983 at San Diego, La Jolla, California

EMPLOYMENT HISTORY

Department of Pharmacology and Toxicology, Robert C. Byrd Health Sciences Center of West Virginia University, Morgantown, WV

Assistant Professor	1976-1980
Associate Professor	1980-1984
Professor	1984-2001

Department of Physiology and Pharmacology, Robert C. Byrd Health Sciences Center of West Virginia University, Morgantown, WV

Professor	2001-2011
Professor Emeritus (retired)	2012-present

AWARDS NIH Predoctoral Trainee 1967-1969; 1971-1975
National Research Service Award - Postdoctoral Fellowship

CERTIFICATION Diplomate of the American Board of Toxicology, 1981-2016

SOCIETY MEMBERSHIPS Society of Toxicology (emeritus status)
American Society for Pharmacology and Experimental Therapeutics (emeritus status)

GRANT AND CONTRACT SUPPORT

A. Extramural

1. Pharmaceutical Manufacturers Association Foundation: "The effects of chlorphentermine administration on the phagocytic and hydrolytic properties of alveolar macrophages", $10,000,

1/1/77 - 12/31/78, Principal Investigator (PI).

2. Department of Energy Contract: "The effects of fossil fuel combustion on pulmonary defense mechanisms", $40,256, 3/1/78 - 8/31/79, Co-Investigator (Co-I).

3. National Institutes of Health: "Effects of amphiphilic drugs on alveolar macrophages", $86,545, 8/1/79 - 7/31/83, PI.

4. National Institutes of Occupational Safety and Health Contract: "In vitro cytotoxicity of dusts", $3200, 6/1/82 - 5/31/83, PI.

5. Center for Alternatives to Animal Testing: "Induction of phospholipidosis in cultured cells by cationic amphiphilic drugs", $15,000, 2/1/84 - 1/31/85, PI.

6. American Heart Association: "Pulmonary Toxicity of the Antiarrhythmic Drug Amiodarone", $90,000, 7/1/86 - 6/30/89, PI.

7. National Institutes of Health: "Benzene toxicity to bone marrow precursor cells", $420,000, 9/1/87 - 8/31/90, Co-PI.

8. Environmental Protection Agency; "Perinatal immunotoxicity of benzene", $120,000, 10/1/86 - 9/30/89, Co-PI.

9. Environmental Protection Agency: "Mechanisms of benzene-induced immunotoxicity", $300,000, 7/1/86 - 6/30/89, Co-I.

10. American Heart Association, West Virginia Affiliate: "Treatment for the toxicity of the antiarrhythmic drug amiodarone", $14,988, 7/1/90 - 6/30/92, PI.

11. NIOSH, "Significance of the Induction and Presence of Foamy Alveolar Macrophages in Lung Disease", TDC - $99,000, 9/28/90 - 9/27/95, PI.

12. Procter and Gamble Pharmaceuticals, "Biological and Functional Significance of Drug-Induced Phospholipidosis", TDC - $245,000, 1/2/92 - 1/1/96, PI.

13. Procter and Gamble Pharmaceuticals, "Utilization of an in vitro Alveolar Macrophage Screening System to Study the Induction of Ultrastructural Changes by Drugs", TDC - $28,880, 7/1/94 - 12/31/95, P.I.

14. National Institutes of Health, "Interdisciplinary Network for Biomedical Research in West Virginia" - 20% time, Oct. 1, 2001 - June 30, 2004; Co-I.

15. National Institutes of Health, "Interdisciplinary Network for Biomedical Research in West Virginia: Supplemental Grant Award", 10% time, Sept. 1 - June 30, 2004; Co-I.

16. National Institutes of Health – "West Virginia IDeA Networks for Biomedical Research Excellence" (WV-INBRE). July 1, 2004– June 30, 2011, 25% effort; Co-I.

B. Intramural

1. West Virginia University School of Medicine Institutional Research Fund: "The effect of pharmacologic agents on the hydrolytic and phagocytic properties of the alveolar macrophage", $2,460, 11/1/76 - 10/31/77, PI.

2. West Virginia University Senate Research Grant: "The possible role of reactive forms of oxygen in the mechanism of drug-induced phospholipidosis", $3,500, 6/1/77 - 5/31/78, PI.

3. West Virginia University Medical Corporation: "Chemiluminescence in alveolar macrophages following induction of phospholipidosis", $2,000, 12/1/78 - 11/30/79, PI.

4. West Virginia University Medical Corporation: "Role of drug metabolism in chlorphentermine-induced pulmonary phospholipidosis", $4,225, 4/1/82 - 9/30/83, PI.

5. West Virginia University Senate Grant: "Amiodarone-induced lung toxicity", $3,490, 5/1/83 - 12/30/84, PI.

6. West Virginia University Medical Corporation: "Amiodarone-induced lung damage", $4,832, 1/1/86 - 12/31/86, PI.

PUBLICATIONS

Book Chapters

1. M.J. Reasor, S. Kacew and D.L. Thoma-Laurie. Effects of cationic amphiphilic drugs on the developing animal. In: **Toxicology and the Newborn** (S. Kacew and M.J. Reasor, eds.) Elsevier Biomedical Press, Amsterdam, pp. 67-84, 1984.

2. Mark J. Reasor. Role of the alveolar macrophage in the induction of pulmonary phospholipidosis: Pharmacologic and toxicologic considerations. In: **Current Topics in Pulmonary Pharmacology and Toxicology** (M. Hollinger, ed.), Elsevier Biomedical Press, New York, pp. 43-71, 1986.

3. Castranova, V., Antonini, J.M., Reasor, M.J,. Wu, L., and Van Dyke, K. Oxidant release from pulmonary phagocytes. In: **Silica and Silica-induced Lung Diseases: Current Concepts** (Castranova, V, Vallyathan, V, and Wallace, WE; eds.), CRC Press, Boca Raton, FL, pp. 185-195, 1996.

4. Mark J. Reasor, Cationic amphiphilic drugs. In: **Comprehensive Toxicology** (Sipes, I.G, McQueen, C. A., and Gandolfi, A. J., eds), vol. 8, (Toxicology of the Respiratory Tract, R. A. Roth, ed), Elsevier Science, Ltd, pp. 555-566, 1997.

5. Knox Van Dyke, Michael D. Taylor, Paul McConnell and Mark J. Reasor. Enhancement of luminol-dependent luminescence in dishes and tubes from from various macrophages: Rat alveolar macrophages appearantly display a new oxidative mechanism. In: **Luminescence Biotechnology: Instruments and Applications** (Van Dyke, K, Van Dyke, C, and Woodfork, C Press, Boca Raton, FL, pp 409-415, 2002.

6. Knox Van Dyke, Candace L. Ogle, and Mark J. Reasor. Antioxidant activity in grade and other fruit extracts inhibits peroxynitrite-dependent oxidation (from SIN-1) as measured by luminescence. In: **Luminescence Biotechnology: Instruments and Applications** (Van Dyke, K, Van Dyke, C, and Woodfork, K, eds), CRC Press, Boca Raton, FL, pp 435-441, 2002.

7. Knox Van Dyke, Candace L. Ogle, and Mark J. Reasor. Luciferase luminescence detects oxidative damage to plasmid DNA and its prevention by selected fruit extracts. In: **Luminescence Biotechnology: Instruments and Applications** (Van Dyke, K, Van Dyke, C, and Woodfork, K, eds), CRC Press, Boca Raton, FL, pp 459-466, 2002.

8. Mary E. Davis and Mark J. Reasor. Principles of toxicology. In: **Modern Pharmacology with Clinical Applications** (C.R. Craig and R.E Stitzel, eds.), Little, Brown and Co., Boston, 5th ed. pp. 63-71, 2004.

Review Articles

1. Mark J. Reasor. Drug-induced lipidosis and the alveolar macrophage. **Toxicology** 20: 1-33 (1981).

2. Mark J. Reasor. Phospholipidosis in the alveolar macrophage induced by cationic amphiphilic drugs. **Federation Proc.** 43: 2578-2581 (1984).

3. Sam Kacew and Mark J. Reasor. Newborn response to cationic amphiphilic drugs. **Federation Proc.** 44: 2323-2327 (1985).

4. Mark J. Reasor. A review of the biology and toxicologic implications of the induction of lysosomal lamellar bodies by drugs. **Toxicol. Appl. Pharmacol.** 97: 47-56 (1989).

5. Mark J. Reasor and Sam Kacew. Amiodarone pulmonary toxicity: Morphologic and biochemical Features. **Proc. Soc. Exp. Biol. Med.** 196: 1-7 (1991).

6. Mark R. Montgomery and Mark J. Reasor. Retrograde extrapolation of blood alcohol data: An applied approach. **J. Tox. Environ. Health** 36: 281-292 (1992).

7. Mark J. Reasor and Mark R. Montgomery. Health effects from adverse indoor air quality: An evaluative approach using toxicological principles. **Indoor Environment** 3: 118-121 (1993).

8. Mark R. Montgomery and Mark J. Reasor. A toxicological approach for evaluating cases of sick building syndrome or multiple chemical sensitivity. **J. Allergy Clin. Immunol.** 94: 371-375 (1994).

9. Mark J. Reasor and Sam Kacew. An evaluation of possible mechanisms underlying amiodarone-induced pulmonary toxicity. **Proc. Soc. Exp. Biol. Med.** 212: 297-304 (1996).

10. S. Kacew, M.J. Reasor and Z. Ruben. Cationic lipophilic drugs: Mechanisms of action, potential consequences, and reversibility. **Drug Metab. Reviews** 29: 355-368 (1997).

11. Mark J. Reasor and Sam Kacew. Drug-induced phospholipidosis: Are there functional consequences? **Exp. Biol. Med.** 226: 825-830 (2001).

12. Mark J. Reasor, Kenneth L. Hastings and Roger G. Ulrich. Drug-induced phospholipidosis: issues and future considerations. **Expert Opin. Drug Safety**. 5: 825-830 (2006)

Research Manuscripts

1. Mark J. Reasor and Julian N. Kanfer. Alterations of the sphingolipid composition in the brains of the "Quaking" mouse and the "Jimpy" mouse. **Life Sci.** 8: 1055-1060 (1969).

2. D.F. Proctor, E.F. Aharonson, M.J. Reasor and K.B. Bucklen. A method for collecting normal respiratory mucus. **Bull. Physiopath. Respir.** 9: 351-357 (1973).

3. R.L. Powell, E.F. Aharonson, D.F. Proctor, W. Schwarz, G.K. Adams and M.J. Reasor. The rheological behavior of normal tracheobronchial mucus of canines. **J. Appl. Physiol.** 37: 447-451 (1974).

4. G.K Adams, E.F. Aharonson, M.J. Reasor and D.F. Proctor. Collection of normal canine tracheobronchial secretions. **J. Appl. Physiol.** 40: 247-249 (1976).

5. G.K. Adams and M.J. Reasor. The effect of cholinergic stimulations on canine tracheobronchialsecretions. In: **Lung Cells in Disease** (A. Bouhys, ed.), Elsevier North Holland, Inc., New York, pp. 265-266 (1976).

6. Mark J. Reasor and Robert J. Rubin. Protein degradation in canine tracheobronchial secretions. **Biochem. Med.** 18: 64-70 (1977).

7. Michael A. Trush, Knox Van Dyke, Mark E. Wilson and Mark J. Reasor. Chemiluminescence resulting from an interaction between imipramine and human polymorphonuclear leukocytes. **Res. Commun. Chem. Path. Pharmacol.** 18: 645-664 (1977).

8. Mark J. Reasor, G. Kenneth, III, Donald F. Proctor and Robert J. Rubin. Tracheobronchial secretions from intact dogs. I. Protein and glycoprotein composition. **J. Appl. Physiol.** 45: 182-189 (1978).

9. Mark J. Reasor, David Cohen, Donald F. Proctor and Robert J. Rubin. Tracheobronchial secretions from intact dogs. II. Effects of cholinomimetic stimulation. **J. Appl. Physiol.** 45: 190-194 (1978).

10. Mark J. Reasor, Michael A. Trush and Elizabeth R. Walker. Changes in lysosomal properties of alveolar macrophages of rats treated with chlorphentermine. **Toxicol. Appl. Pharmacol.** 46: 261-264 (1978).

11. Mark J. Reasor, Denis Nadeau and Gary E.R. Hook. Extracellular alkaline phosphatase in the airways of the rabbit lung. **Lung** 155: 321-335 (1978).

12. Mark J. Reasor and Elizabeth R. Walker. Lysosomal stabilizing effect of chlorphentermine in the rabbit alveolar macrophage. **Gen. Pharmacol.** 10: 83-88 (1979).

13. G.E.R. Hook, D.Y. Bell, L.B. Gilmore, D. Nadeau, M.J. Reasor and F. Talley. Composition of bronchoalveolar lavage and effluents from patients with pulmonary alveolar proteinosis. **Lab. Invest.** 39: 342-358 (1978).

14. Michael A. Trush, Michael J. McNulty and Mark J. Reasor. Enhanced chemiluminescence of phagocytic cells from rats treated with chlorphentermine. **Toxicol. Letters** 3: 185-190 (1979).

15. M.A. Trush, M.J. Reasor, M.E. Wilson and K. Van Dyke. Comparison of the interaction of tricyclic antidepressants with human polymorphonuclear leukocytes as monitored by the generation of chemiluminescence. **Chemico- Biological Interactions** 28: 71-83 (1979).

16. Mark J. Reasor, Roberta A. Koshut and Vincent Castranova. Biochemical characteristics of rat alveolar macrophages with chlorphentermine induced phospholipidosis: Variations with increasing cell size. **Exp. Molec. Pathol.** 31: 297-307 (1979).

17. Mark J. Reasor, Roberta A. Koshut, Michael J. McNulty and Michael A. Trush. Chemiluminescence of rat alveolar macrophages following induction of phospholipidosis with chlorphentermine. **Toxicol. Appl. Pharmacol.** 52: 497-506 (1980).

18. V. Castranova, L. Bowman, M.J. Reasor and P.R. Miles. Effects of heavy metal ions on chemiluminescence in rat alveolar macrophages. **Toxicol. Appl. Pharmacol.** 53: 14-23 (1980).

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lung fibrosis using laser confocal microscopy. **Toxicol. Sci.** 67:295-302 (2002).

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Abstracts of Presentations at Scientific Meetings
(118 citations; these are not listed individually for sake of brevity)

Rec'd 10-15-09

CURRICULUM VITAE
Jenny R. Roberts

PERSONAL INFORMATION
National Institute for Occupational Safety and Health
Pathology and Physiology Research Branch
1095 Willowdale Rd.
Mailstop 2015
Morgantown, WV 26505
Phone: 304-285-5710 Fax: 304-285-5938
E-mail: jur6@cdc.gov

EDUCATION

High School Diploma	**The Morgan School,** Clinton, CT. June, 1991
Bachelor Degrees	**Boston University**, Boston, MA. BA in Biology with a Concentration in Marine Science, BA in Psychology. May 1996. *Magna Cum Laude*
Ph.D.	**West Virginia University**, Morgantown, WV. West Virginia University, School of Medicine. Department of Physiology and Pharmacology. May 2006.

EXPERIENCE

January, 1999 – Present	**National Institute of Occupational Safety and Health,** Research Biologist
May, 2007 – Present	**West Virginia University, School of Medicine, Department of Physiology and Pharmacology,** Adjunct Assistant Professor.
October, 1997 – December, 1998	**Harvard School of Public Health, Physiology Program, Biomedical Imaging Laboratory,** Research Assistant II.
October, 1997 – December, 1998	**Harvard Medical School, Cell Biology Department,** Research Consultant
November, 1996 – October, 1997	**Harvard School of Public Health, Physiology Program, Biomedical Imaging Laboratory,** Research Assistant I

AFFILIATIONS

Society of Toxicology	September 2002 - Present
Allegheny – Erie Society of Toxicology	March, 1999 – Present
American Thoracic Society	August 2003 – August 2008
American Physiological Society	March 2003 – March 2007
New England Society for Microscopy	November, 1996 – 1999

AWARDS

Julie Betschart Graduate Student Award, Best Presentation at a National Meeting, Department of Physiology and Pharmacology, WVU — May, 2004

09/10-1000

Julie Betschart Graduate Student Award, Best Presentation at a National Meeting, Department of Physiology and Pharmacology, WVU — May, 2005

Alice Hamilton Award, NIOSH, Honorable Mention Best Manuscript in Biological Sciences — May 2007

Society of Toxicology, Occupational and Public Health Specialty Section Best Manuscript Award — March 2008

Alice Hamilton Award, NIOSH, Honorable Mention Best Manuscript in Biological Sciences — May 2008

CURRENT POSITION DESCRIPTION

- Principle investigator of a National Occupational Research Agenda (NORA) project, conducted in conjunction with a memorandum of understanding with International Business Machine (IBM), aimed at assessing the potential toxicity of silicon nanowires to the respiratory system.
- Principle investigator of a NIOSH Nanotechnology Research Center (NTRC) proposal to investigate pulmonary toxicity associated with respiratory exposure to silver nanoparticles.
- Design and conduct respiratory biological experiments aimed at characterizing susceptibility of workers to lung infection after exposure to particulates and soluble metals.
- Collect and analyze data related to pulmonary injury due to soluble metal and particulate exposure.
- Lecture and Conduct Small Group Seminar and Problem Based Learning Groups in Physiology at West Virginia University, School of Medicine
- Lab Administrative Duties: Train new graduate students, post-doctoral fellows, and technicians; Government Purchasing and Inventory.
- Alternate member of the NIOSH Health Effects Laboratory Division (HELD) Institutional Animal Care and Use Committee (IACUC).

TEACHING EXPERIENCE

West Virginia University, School of Medicine

- PSIO 441: Human Physiology; Instructor, 3 credit hours, ~200 Students
- CCMD 730: Human Function; Small Group Facilitator, ~12 hours, ~15 Students
- CCMD 730: Problem Based Learning Facilitator, 20 hours, 6-7 Students

PUBLICATIONS (Chronologically)

Journal Articles

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Salik Hussain DVM, PhD

Tenure-Track Assistant Professor
Department of Physiology and Pharmacology
Department of Microbiology, Immunology and Cell Biology
School of Medicine, West Virginia University, Robert C Byrd Health Science Center
64 Medical Center Drive, HSC-N 3074
Morgantown, WV 20506, Phone: (304) 293-8047
E-Mail: salik.hussain@hsc.wvu.edu

EDUCATION

2010 **Ph.D.** (*European Doctorate*)– **Toxicology/Cell Biology**
Université Paris Diderot-Paris7 (Paris, France)
Très *Honorable Avec Félicitations du Jury (Highest Honors)*

2007 **M.S. (Research)** – **Cell Biology, Physiology and Pathology**
Université Paris Diderot-Paris7 (Paris, France)
Magna Cum Laude

2005 **M. Sc. (Hons)**– **Toxicological Pathology**
University of Agriculture (Faisalabad, Pakistan)
Magna Cum Laude/Silver Medal

2003 **Doctor of Veterinary Medicine (DVM)**
University of Agriculture (Faisalabad, Pakistan)
Summa Cum Laude/Silver Medal

RESEARCH EXPERIENCE

2017- cont. **Tenure-Track Assistant Professor (Physiology and Pharmacology)**
Robert C. Byrd Health Sciences Center, School of Medicine, West Virginia University, Morgantown

2014- 2017 **Research Fellow, Clinical Research Program & Inflammation, Immunity and Disease Laboratory**
National Institutes of Health/National Institute of Environmental Health Sciences, RTP, NC

2011- 2014 **Postdoctoral Fellow, Clinical Research Program**
National Institutes of Health/National Institute of Environmental Health Sciences, RTP, NC

2006-2010 **Graduate Research Student, Laboratory of Cellular and Molecular Responses to Xenobiotics**
Université Paris Diderot-Paris7 (Paris, France)

2004-2005 **Research Associate, Laboratory of Toxicological Pathology**
Department of Pathology, University of Agriculture (Faisalabad, Pakistan)

TEACHING & MENTORING EXPERIENCE

2017- cont. **Tenure-Track Assistant Professor (Physiology and Pharmacology Department, WVU)**
Robert C Byrd Health Science Center, West Virginia University, Morgantown, WV

Medical School Teaching

- Problem Based Learning (CCMD803) 2022

Graduate Teaching

- Pulmonary Pathophysiology (PSIO793D)-Course Coordinator 2021
- SPTP:Biomed. Sci. Disciplines – 002 (BMS793A) 2021
- Advanced Physiology (PSIO 750) 2020-2021
- Graduate Seminar (PSIO 744)-Course Coordinator Fall 2019/2020/2021/2022
- MAE 425 Internal Combustion Engines Fall 2020 (1 lecture)

Mentoring of Graduate Students

- Nairrita Majumder PhD Candidate Biomedical Sciences, WVU
- Md. Habibul Mazumder PhD Candidate Biomedical Sciences, WVU
- Surya Prasad Devkota PhD Candidate Biomedical Sciences, WVU
- Mena Mansy Master's Candidate Biomedical Sciences, WVU
- Beethi Sinha PhD Candidate Biomedical Sciences, WVU

Mentoring of Undergraduate Students

- Brittany Cobbs Nano REU student summer 2018
- Lily Schelling (Research Apprenticeship Program/SURE Student) 2018-2019
- Jessica Amedro (Microbiology and Immunology) 2019- 2021
- Nina Olivia Tan (Microbiology and Immunology) 2021- cont.

2011-2017 **Mentoring of Post Baccalaureate Students**
National Institutes of Health/National Institute of Environmental Health Sciences, RTP, NC
Mentored 5 students and 2 biologists

- Faris Al-Nsour (2011)
- Shamika Anderson (2011-2012)
- Stacey Sangtian (2012-2014)
- Preeti Kodavanti (2014-2015)
- Alma Solis (2017)

2007-2010 **Teaching and Research Assistant (Ingénieur d'études)**
Université Paris Diderot-Paris7 (Paris, France)

2005-2006 **Lecturer of Pathology**
University of Veterinary and Animal Sciences (Lahore, Pakistan)

2004-2005 **Research/Teaching Associate**
University of Agriculture (Faisalabad, Pakistan)

CONTINUING EDUCATION AND PROFESSIONAL DEVELOPMENT TRAININGS

2021 Mentor & Coach: Utilizing Coaching Tools to Support a Dynamic Mentoring Relationship
2017 Scientists Teaching Science (9-week intensive course on teaching methodologies and curriculum development) (NIH/STEM Education Solutions)

2017	Flow Cytometry in Human and Mouse Lung: From Experimental Design to Analysis (American Thoracic Society)
2017	Next Generation Sequencing Boot Camp (NHGRI)
2014-2015	Principals of Clinical Pharmacology (32-week Course) (NIH)
2013	Workplace Dynamics (NIH)
2012	Management Bootcamp (NIEHS)
2005	Teaching Training Certification (University of Agriculture Faisalabad)
2005	Research Methodology and Analytical Techniques (University of Agriculture Faisalabad)

HONORS AND AWARDS

2022 **Young Investigator Award**
Inhalation and Respiratory Specialty Section (IRSS) of the Society of Toxicology (USA)

2022 **Best Publication Award** *(Majumder et al. Redox Biology 2021)*
Nanoscience and Advance Materials Specialty Section (NAMSS) of the Society of Toxicology (USA)

2022 **Session Chair, SPC- Highlights Rising Stars in Nanotoxicology**
61st Annual Meeting of the Society of Toxicology, USA

2020 **Outstanding New Environmental Scientist (ONES) Award**
National Institute of Environmental Health Sciences (NIEHS/NIH)

2017 **Best Publication Award**
Society of Toxicology USA, Society of Toxicology Annual Meeting, Baltimore

2017 **Invited Poster Session Chair**
Society of Toxicology Annual Meeting, Baltimore

2016 **Hussain et al, ACS Nano Selected as Intramural Paper of the Month and Paper of the Year**
Intramural Research Program, NIEHS

2016 **Performance Bonus**
National Institute of Environmental Health Sciences (NIEHS) RTP – *(based on performance in 2015, $$$ Award)*

2016 **Travel Award**
8th International Nanotoxicology Congress, June 1-4, 2016 Boston, USA –*($$$ Award)*

2016 **Invited Poster Session Chair**
Society of Toxicology Annual Meeting, New Orleans

2015 **PMAP Performance Award**
National Institute of Environmental Health Sciences (NIEHS) RTP – *(based on performance in 2014, $$$ Award)*

2014 **Outstanding Postdoctoral Achievements Award**
Society of Toxicology USA (Nanotoxicology Specialty Section, Phoenix, AZ – *(Competitive, $$$*

Award)

2014 **Hussain *et al.,* Part. Fibre Toxicol Selected as Intramural Paper of the Month**
Intramural Research Program, NIEHS

2013 **Best Poster Presentation**
Annual NIEHS Science Day, RTP – *(Competitive, $$$ Award)*

2012 **Publication Selected among Papers of the Year 2012 by IRP (Hussain et al, ACS Nano)**
Intramural Research program, NIH

2012 **Publication Selected among Papers of the Month (Hussain et al, ACS Nano)**
Intramural Research program, NIEHS

2009 **Best Poster Presentation**
11th International Inhalation Symposium (Hannover, Germany) (*Competitive, $$$ Award)*

2006 **Overseas PhD Fellowship**
Higher education Commission of Pakistan and French Ministry of Science

1999-2005 **Merit Scholarship**
University of Agriculture (Faisalabad, Pakistan) *($$ Award; Competitive top 1%)*

2005 **Star Laureate**
XVI-STAR AWARD by UNESCO and South Asia Publications (Islamabad, Pakistan). Profile published in Star Profile 2005 Vol. II, entitled -125 Distinguished Men & Women: Leaders of the New Millennium

1998 **Presidents Talent Scholarship**
Ministry of Education (Islamabad, Pakistan) *($$ Award; Competitive Nationwide Award top 2%)*

INSTITUTIONAL SERVICE @WVU

2023- cont. Director, School of Medicine MD-PhD Program

2022- cont. Member, School of Medicine Strategic Planning Committee (DISCOVER Team)

2021-cont. Graduate Student Adviser
- Surya Prasad Devkota (Immunology and Microbial Pathogenesis)
- Mena Mansy (Cellular and Integrative Physiology, Masters)

2022-cont. Graduate Student Research Advisory Committee Member
- Krystal Hughes (Pharmaceutical and Pharmacological Sciences)
- Morris Maeve (Immunology & Microbial Pathogenesis)

2020-cont. Graduate Student Research Advisory Committee Member

2020-cont. Graduate Student Adviser
- Md Habibul Hasan Mazumder (Pharmaceutical and Pharmacological Sciences)

2019-2022 Member, Health Sciences Center Graduate Admissions Committee

2019-cont. Executive Committee Member, for the Center for Inhalation Toxicology (iTox)

2020-cont. Chair, Awards Committee for the Center for Inhalation Toxicology (iTox)

2019-cont. Chair, Work in Progress (WIP) Program, Department of Physiology and Pharmacology
2019-cont. Member, Departmental Equipment and Space Management Committee
2019 -cont. Faculty Search Committee Member Department of Physiology and Pharmacology
2019, 2021 Internal Study Section, Health Sciences Center, WVU
2019, 2021 Grant Reviewer, WV-Clinical and Translational Science Institute
2018-cont. Chair/Co-chair Physiology and Pharmacology Seminar Committee
2018-cont. Regular Member Biomedical Sciences Graduate Programs in
- Cellular and Integrative Physiology (CIP)
- Immunology and Microbial Pathogenesis (IMP)
- Pharmaceutical and Pharmacological Sciences (PPS)

2018-cont. Graduate Student Adviser
- Nairrita Mujumdar (Cellular & Integrative Physiology)

2019-cont. Graduate Student Research Advisory Committee Chair and Member
- Xena Williams (Cellular & Integrative Physiology)
- Julie Griffith (Cellular & Integrative Physiology)
- Kathryn Blethen (Pharmaceutical and Pharmacological Sciences)

2019-cont. Graduate Student Research Advisory Committee Member
- Stephanie Agba (Pharmaceutical and Pharmacological Sciences)
- Stuti Khadka (Immunology and Microbial Pathogenesis)

2019-2022. Brandon Veltri (Immunology and Microbial Pathogenesis)
Krista Garner (Cellular & Integrative Physiology)
2018 Lauryn Falcone (Cellular & Integrative Physiology MD/PhD Program)
2018 Member Strategic Planning Committee, Department of Physiology and Pharmacology

SERVICE TO SCIENTIFIC COMMUNITY

National Grant Review

2023 NIH/CSR/ Special Emphasis Panel: KUDS-A (04) member Conflict: Topics in Hepatology and Environmental Toxicology
2022 NIH/CSR/ Respiratory Integrative Biology and Translational Research (RIBT) Study Section
2022 NIH/CSR/Systemic Injury by Environmental Exposure (SIEE) Study Section
2021 NIH/CSR/ NIEHS Special Emphasis Panel: ZES1 LWJ-S (IR) 1: Mechanisms/Mediators of Environmentally Induced Inflammation and Concomitant Return to Homeostasis or Disease
2021 NIH/CSR/Lung Injury, Repair and Remodeling (LIRR) Study Section
2021 NIH/CSR/ZRG1 MDCN-B (50) PAR Panel: CounterACT – Countermeasures against Chemical Threats
2021 NIH/CSR/ZRG1 MDCN-B (54) PAR Panel: CounterACT – Countermeasures against Chemical Threats -(CounterACT) Research Centers of Excellence
2020 NIH/CSR/FDA Special Emphasis Panel- ZRG1 IFCN-E (56): Understanding Tobacco Product Toxicology and substance abuse
2020 Peer Review Medical Research Program (PRMP, DOD): Metal Toxicology Panel

President (2022-2023)

Nanotechnology and Advanced Materials (Previously known as Nanotoxicology) Specialty Section, Society of Toxicology USA

Vice President (2021-2022)

Nanotechnology and Advanced Materials (Previously known as Nanotoxicology) Specialty Section, Society of Toxicology USA

Elected Vice President (2020-2021)

Nanotechnology and Advanced Materials (Previously known as Nanotoxicology) Specialty Section, Society of Toxicology USA

Elected Counselor (2018-2020)

Nanotechnology and Advanced Materials (Previously known as Nanotoxicology) Specialty Section, Society of Toxicology USA

INVITED EXPERT in INTERNATIONAL INITITATIVES

- NanoCharacter: Development of a framework and roadmap to implement reporting of comparable nanomaterial characterization data across studies by International Life Science (ILSI) and Risk Center University of Michigan http://www.ilsi.org/NanoCharacter/Pages/Participants.aspx , 2013-Present
- A comprehensive evaluation of Nano Ceria: interactions and environmental fate, applications in biology and mechanism of toxicity. Participated in Panel 6 and co-authored a position paper. 2013-2014
- Member Society of Toxicology (SOT) Nanotoxicology Specialty Section program committee since 2014
- Invited outside expert panel member for the Center for Environmental Implications of Nanotechnology (CEINT) Annual meeting, 22-23 May 23, 2014

EDITORIAL BOARD ASSIGNMENTS

- 2022-Present **Frontiers Topic Editor**…Emerging Talents in Toxicology: Nanotoxicology 2022
- 2022-Present **Review Editor**……. Frontiers in Immunology (Molecular Innate Immunity)
- 2022-Present **Editorial Board Member**……. Particle and Fibre Toxicology
- 2021-Present **Editorial Board Member/Associate Editor**…… Advances in Redox Research
- 2019-Present **Review Editor**…… Frontiers in Toxicology (Nanotoxicology; Environmental Toxicology)
- 2012-Present **Academic Editor**……PLOS One

AD-HOC MANUSCRIPT REVIEWER ASSIGNMENT FOR SCIENTIFIC JOURNALS

• Nature Communications• Inflammation • Allergy, Asthma and Immunology Research • Scientific Reports • Particle and Fibre Toxicology • Toxicological Sciences • FEBS Journal • ACS Nano• Nanotoxicology • Toxicology Letters • Mutation Research - Genetic Toxicology and Environmental Mutagenesis • Journal of Occupational and Environmental Medicine • Toxicology • Biomaterials • Toxicology and Applied Pharmacology • Journal of Nanobiotechnology • Journal of Nanoscience and Nanotechnology • Biological Trace Element Research • Chemical Research in Toxicology • International Journal of Nanomedicine • Cell Biology and Toxicology • Journal of Biomedicine and Biotechnology • Environmental Toxicology • ACS Applied Materials & Interfaces • Journal of Applied Physiology • International Journal of Nanomedicine • Nanoscale• Cellular Physiology and Biochemistry • Particle & Particle Systems Characterization • Journal of Nanoparticle Research • Oxidative Medicine and Cellular Longevity

SOCIETIES AND LICENCES

2022-Present	President, Nanoscience and Advanced Materials Specialty Section, Society of Toxicology, USA
2022-Present	Member Society for Redox Biology and Medicine
2021-2022	Vice President, Nanoscience and Advanced Materials Specialty Section, Society of Toxicology, USA
2020-2021	Elected Vice President, Nanoscience and Advanced Materials Specialty Section, Society of Toxicology, USA
2018-Present	Elected Counselor, Nanotoxicology Specialty Section, Society of Toxicology, USA
2018-Present	American Thoracic Society (ATS), Full member
2013-Present	Society of Toxicology, USA (Full member)
2013-Present	Member Nanoscience and Advanced Materials (formerly Nanotoxicology) Specialty Section (SOT)
2013-Present	Member Inhalation and Respiratory Toxicology Specialty Section (SOT)
2011-Present	Laboratory Animal Care and Use Certification (NIEHS, WVU)
2003-Present	Pakistan Veterinary Medical Council (Life Member)
2003-Present	License in Practice of Veterinary Medicine and Surgery (Pakistan)

INVITED TALKS/ORAL PRESENTATIONS

2022	Interactive Pulmonary outcomes after ultrafine carbon and ozone mixed inhalation exposure. Duke University, Durham NC, October 14, 2022
2022	Interactive Pulmonary Outcomes after Ultrafine Carbon and Ozone Mixed Inhalation Exposure. International Particle Toxicology Conference, Santa Fe, New Mexico USA August 28-31, 2022
2022	Interactive Pulmonary outcomes after ultrafine carbon and ozone mixed inhalation exposure. National Institute for Occupational Safety and Health (NIOSH), August 2022
2022	Mechanistic Understanding of Susceptibility in Particle Toxicology: From Nanomaterials to Air Pollution, Rutgers University, New Jersey, May 2022
2021	Ozone Inhalation during Sensitization Primes for a Greater Allergic Inflammation and Lung Function Decline American Thoracic Society Annual Meeting, May 14-19, 2021
2021	Oxidant-Induced Epithelial Alarmin Pathway Mediates Lung Function Decline after Ultrafine Carbon Black and Ozone Inhalation Co-exposure. Society of Toxicology Annual Meeting March 12-16, 2021
2021	"Role of Nod-Like Receptor 1 (NLRX1) in COVID-19 Pathogenesis" presented at "Covid-Focused Research - Thinking Forward Together II" April 28, 2021, at West Virginia University
2020	Inhalation Co-exposures and Pulmonary Disease Susceptibility. Evening of Sciences January 29, 2020, on Programmatic Strategy Focused on Toxicology – Addressing Health Challenges in Appalachia, Evansdale Campus, West Virginia University
2017	Mechanistic insights into the human susceptibility to nanomaterials. Open Tox USA. July 12-13, Durham NC, USA

2016 Differential susceptibility in humans and rodent models of nanomaterial toxicity. 8th International Nanotoxicology Congress, June 1-4, 2016 Boston, USA

2016 Decreased Uptake and Enhanced Mitochondrial Protection Underlie Reduced Toxicity of Nanoceria in Human Monocyte-Derived Macrophages. 8th International Nanotoxicology Congress, June 1-4, 2016 Boston, USA

2016 Is environmental pollution inevitable in developing countries? NIEHS 1st Annual Global Environmental Health Day, June 29, 2016

2013 Mechanistic insights into the toxicity of multi-walled carbon nanotubes and cerium dioxide nanoparticles in primary human bronchial epithelial cells. 52nd Annual Meeting of the Society of Toxicology (SOT), March 10-14, 2013 San Antonio, Texas, USA

2013 Understanding the human health impact of nanomaterials. National Toxicology Program Laboratory seminar series, NIEHS, April 23rd 2013

2011 Environmental health hazards of nanomaterials. American Thoracic Society (ATS) Conference May 13-18, 2011. Denver, Colorado, USA.

2010 *In vitro* toxicity of nanoparticles on respiratory epithelial cells: impact of physico-chemical characteristics and oxidative stress. 1st Scientific Meeting of the Institute of Medicament, Toxicology, Chemistry Environment. April 8th 2010 University Paris Descartes Paris France.

2009 Molecular pathways of cell death induction by carbon black and titanium dioxide nanoparticles. 12th Young Researchers and Life Science Meeting 27-29 April 2009 Institute Jacques Monod Paris France

2008 Mechanisms of nanoparticle induced effects: A cellular and molecular approach 11th Young Researchers and Life Science Meeting 23-25 April 2008 Institute Curie Paris France.

RESEARCH PROJECTS (FUNDING/RESEARCH + REPORT WRITING)

Current Funding

2020-2025 **R01 ES031253 Impact of Particle and Ozone Inhalation Co-Exposure on Alveolar Epithelial Regeneration**
Status: Awarded May 2020
NIH/NIEHS Outstanding New Environmental Scientist (ONES), Career Development Award
Role: Principal Investigator (50% Effort)

2020-2025 **Cell & Molecular Biology and Biomedical Engineering Training Program (CBPT)**
T32- NIGMS (GM133369)
Role: Preceptor

2022-2026 **Pre-doctoral Training in Systems Toxicology (SysTox)**
NIH/NIEHS T32 (ES032920)
Training Grant Director: Timothy Nurkiewicz
Role: Pulmonary Function Core Director and Training Preceptor

Pending Funding

2023-2028 **NLRX1 in ozone induced pulmonary inflammation and Injury**
NIH/NIEHS R01
Role: PI (30 % Effort)

2022-2026 **Impact of environmental exposures on gastric inflammation, injury, and carcinogenesis**
NIH/NIEHS R01
PI: Jon Busada
Role: Co-PI (10 % Effort)

2022-2026 **Influence of particulate matter on fetal mitochondrial programming**
NIH/NIEHS R01
PI: John Hollander
Role: Co-PI (5 % Effort)

Completed Funding

2020-2022 **An association of NLRX1 expression and single nucleotide polymorphism with susceptibility and severity of COVID-19**
U54 GM104942 (Hodder)
(Hussain-Pilot PI)

2018-2019 **Occupational and environmental co-exposures: prospects of novel lung pathologies and susceptibilities**
U54 GM104942 (Hodder) (Hussain-Pilot PI)
Principal Investigator: Salik Hussain PhD

2011-2016 **NANOHEALTH AND SAFETY INITIATIVE**
Funding Source: National nanotechnology Initiative (NNI)
Principal Investigator: Stavros Garantziotis MD

2007-2010 **NANOTEST** (Alternative testing strategies for the assessment of the toxicological profile of nanoparticles used in medical diagnostics) Project Contract n°201335
Principal Investigator: Prof. F. Marano
Funding Agency: European Union, FP7

2006-2009 **NANODETECT** (Synthesis, Detection and Toxicology of Metallic Nanoparticles) (SEST-2006).
Principal Investigator: Prof. P. Beauvillain
Funding Agency: Agence Nationale de la Recherche (ANR)/ French National Research Agency

2005-2009 **NANOTOX** (Toxicology of nanoparticles: influence de la taille, influence of size, chemical composition and surface reactivity in their pulmonary and renal effects) (0599-5 SET 024-01).
Principal Investigator: Prof. F. Marano.
Funding Agency: Agence Nationale de la Recherche (ANR)/ French National Research Agency

2006-2009 **Higher Education Commission of Pakistan and French Ministry of Science and Technology PhD Fellowship Award**
Awardee: Salik Hussain

INVITED BOOK CHAPTERS

E.C. Bowdridge, E. DeVallance, K.L. Garner, J.A. Griffith, P.A. Stapleton, **S. Hussain**, T.R. Nurkiewicz, Cardiovascular System (Chapter 2030) **Encyclopedia of Toxicology**, ed: P. Wexler 4th Edition, 2022

Hussain S. "Measurement of Nanoparticle Induced Mitochondrial membrane potential Alterations" in **Methods in Molecular Biology Series Nanotoxicity: Methods and Protocol**s eds: Qunwei Zhang in Press 2018

Hussain S, et al. 2014 "Intracellular signal modulation by nanomaterials" in **Nanomaterial: Impacts on Cell Biology and Medicine**. Eds: David Capco and Yongsheng Chen. Springer Nature USA.

Baeza-Squiban A., Boland S., **Hussain S.,** and Marano F. 2010 Health Effects of Nanoparticles. In ***Systems Toxicology: from omics technology to nanotechnology.*** **Eds:** Saura C. Sahu and Daniel A. Casciano. John Wiley and Sons Ltd. ISBN: 978-0-470-68401-6

BIBLIOGRAPHY

Peer-Reviewed Scientific Publications

TOTAL PUBLICATIONS-41, **Total Citations >13,990 H-index- 24, i10-index 34**(UPDATED Jan 2023)
https://scholar.google.com/citations?user=wzO8aTMAAAAJ&hl=en

1. Dunigan-Russell K, Yaeger MJ, Hodge M, Kilburg-Basnyat B, Reece SK, Birukova A, Guttenberg MA, Novak C, Chung S, Ehrmann BM, Diane Wallace E, Tokarz D, Majumder N, Li X, Christman JW, Shannahan J, Ballinger M, **Hussain S**, Shaikh SM, Tighe RM, Gowdy KM. Scavenger receptor BI attenuates oxidized phospholipid induced pulmonary inflammation *Toxicol Appl Pharmacol*. 2023 Jan 18:116381. doi: 10.1016/j.taap.2023.116381.

2. Majumder N., Kodali V, Murugesan V, Goldsmith T, Amedro J, Erdely E, Kelley EE, Nurkiewicz TR, **Hussain S**. Aerosol physico-chemical determinants of carbon black and ozone inhalation co-exposure induced pulmonary toxicity. *Toxicol. Sci.* 2023. 191 (1). 61-78.

3. Majumder N, Deepak V, Hadique S, Aesoph D, Velayutham M, Ye Q, Mazumder MH, Lewis SE, Kodali V, Roohollahi A, Guo NL, Hu M, Khramtsov VV, Johnson RJ, Wen S, Kelley EE, **Hussain S.** Redox Imbalance in COVID-19 Pathophysiology 2022 *Redox Biol.* 56; 102465

4. Kodali V, Afshari A, Meighan T, McKinney W, Mazumder Md Habibul Hasan, Majumder Nairrita, Cumpston JL, Leonard HD, Cumpston JB, Friend S, Leonard SS, Erdely A, Zeidler-Erdely PC, **Hussain S**, Lee EG, Antonini JM. In vivo and in vitro toxicity of a stainless-steel aerosol generated during thermal spray coating. Arch Toxicol. 2022 Aug 19. doi: 10.1007/s00204-022-03362-7. PMID: 35984461

5. Trembley JH, So SW, Nixon JP, Bowdridge EC, Garner KL, Griffith J, Engles KJ, Batchelor TP, Goldsmith WT, Tomáška JM**, Hussain S**, Nurkiewicz TR, Butterick TA. Whole-body inhalation of nano-sized carbon black: a surrogate model of military burn pit exposure. BMC Res Notes. 2022 Aug 11;15(1):275.

6. JA Griffith, KL Garner, E DeVallance, EC Bowdridge, WT Goldsmith, K Vix, **S Hussain**, TR Nurkiewicz. Impact of Nanoparticle Inhalation during Gestation on Cyclooxygenase Metabolites. 2022. *Toxicol. Sci*. 188(2):219-233

7. Bowdridge EC, DeVallance E, Garner KL, Griffith J, Schafner K, Seaman M, Engels K, Wix K, Batchelor TP, Goldsmith WT, **Hussain S**, and Nurkiewicz TR. Maternal engineered nanomaterial inhalation during gestation drives redox dysregulation and vascular dysfunction across generations**.** 2022. *Part Fibre Toxicol*. 19:18.

8. Hathaway QA, Majumder N, Kunovac A, Xie S, Pinti MV, Harkema JR, Nurkiewicz T, Hollander JM, **Hussain S**, Transcriptomics of Single Dose and Repeated Carbon Black and Ozone Inhalation Co-exposure Highlight Progressive Pulmonary Mitochondrial Dysfunction. 2021. *Part Fibre Toxicol*. 2021, 18:44.

9. Majumder N, Velayutham M, Bitounis D, Kodali VK, Md. Habib-ul Hasan Mazumder, Amedro J, Khramtsov VA, Erdely A, Nurkiewicz TR, Demokritou P, Kelley EE, **Hussain S.** Oxidized carbon black nanoparticles induce endothelial damage through C-X-C chemokine receptor 3-mediated pathway, *Redox Biol.* 2021 4; 47:102161 *Publication of the Year Award by NAMSS/SOT*

10. Majumder N, Goldsmith WT, Kodali VK, Velayutham M, Friend SA, Khramtsov VA, Nurkiewicz TR, Erdely A, Zeidler-Erdely PC, Castranova V, Harkema JR, Kelley EE, **Hussain S**. Oxidant-induced epithelial alarmin pathway mediates lung inflammation and functional decline following ultrafine carbon and ozone inhalation co-exposure, 2021. *Redox Biol*. 46:102092.

11. Kolinsky DJ,..,**Hussain S**,.., Zughaier SM, Guidelines for the use and interpretation of assays for monitoring autophagy (4th edition) Autophagy. 2021 17(1):1-382.

12. Taylor-Just AJ, Ihrie MA, Duke KS, Lee HY, You DJ, **Hussain S**, Kodali VK, Ziemann C, Creutzenberg O, Vulponi A, Turcu F, Potara M, Todea M, Van den Brule S, Lison D, Bonner JC. The pulmonary toxicity of carboxylated or aminated multi-walled carbon nanotubes in mice is determined by the prior purification method. Part Fiber Toxicol. 17 (1):60 2020 PMID;33243293

13. **Hussain S**, Johnson CG, Sciurba J, Cyphert JM, Stober VP, Rice AB, Bulek K, Liu C, Aloor J, Gowdy K, Foster WM, Hollingsworth JW, Fessler MB, Li X, Tighe RM, Garantziotis S. 2019 TLR5 participates in TLR4 signaling and biases towards MyD88 activation in environmental lung injury. Elife. 2020 Jan 28;9. pii: e50458

14. Whitehead GS, **Hussain S**, Fannin R, Innes CL, Schurman SH, Cook DN, Garantziotis S. 2019 TLR5 activation through flagellin promotes airway inflammation in asthma. Lung. 2020 Apr;198(2):289-298

15. Mohammadinejad R, Moosavi MA, Tavakol S, Vardard DO, Hosseini V, Rahmati M, Dinig M, **Hussain S**, Mandegary A, Klionskyj D. Necrotic, apoptotic and autophagic cell fates triggered by nanoparticles Autophagy. 2019 15:4-33.

16. Snyder R, **Hussain S**, Randell SH, Tucker CJ and Garantziotis S. Impaired ciliogenesis in differentiating human bronchial epithelia exposed to multi-walled carbon nanotubes. *Part Fibre Toxicol*. 2017, 13; 14(1):44.

17. Hilton MG, Taylor AJ, **Hussain S**, Dandley EC, Griffith EH, Garantziotis S, Parson GN, Bonner JC and Bereman MS. Mapping Differential Cellular Protein Response of Mouse Alveolar Epithelial Cells to Multi-Walled Carbon Nanotubes as a Function of Atomic Layer Deposition Coating. *Nanotoxicology* 2017 11(3):313-326

18. **Hussain S,** Ji Z, Taylor AJ, Miller-DeGraff L, George M, Tucker J, Chang CH, Li R, Bonner JC, Garantziotis S. Multi-walled Carbon Nanotube Functionalization with High Molecular Weight Hyaluronan Significantly Reduces Pulmonary Injury. *ACS Nano* 2016. 10(8):7675-88.

19. **Hussain S**, Kodavanti PP, Marshburn JD, Janoshazi A, Marinakos SM, George M, Rice A, Wiesner MR and Garantziotis S. Decreased Uptake and Enhanced Mitochondrial Protection Underlie Reduced Toxicity of Nanoceria in Human Macrophages Compared to Monocytes. 2016. *J. Biomed. Nanotechnol.* 2016. 12, 2139–2150

20. Kolinsky DJ,..,**Hussain S**,.., Zughaier SM, Guidelines for the use and interpretation of assays for monitoring autophagy (3rd edition) *Autophagy* 2016;12(1):1-222.

21. Guadagnini R, Moreau K, **Hussain S**, Marano F, Boland S. Interaction of nanoparticles used in medical applications with lung epithelial cells: cytotoxicity, oxidative stress and inflammatory response. *Nanotoxicology* 2015, 9 S1:25-32

22. **Hussain S**, Sangtian S, Anderson SM, Snyder RJ, Marshburn JD, Rice AB, Bonner J, Garantziotis S. Inflammasome Activation in Airway Epithelial Cells after Multi-Walled Carbon Nanotube Exposure Mediates a Profibrotic Response in Lung Fibroblasts. *Part Fibre Toxicol*. 2014, 11:28.

23. **Hussain S**, Garantziotis S, Rodrigues-Lima F, Dupret JM, Baeza-Squiban A, Boland S. Intracellular signal modulation by nanomaterials. *Adv Exp Med Biol.* 2014, *811:111-34.*

24. Snyder R, **Hussain S,** Rice A, Garantziotis S. Multi-Walled Carbon Nanotubes Induce Altered Morphology and Loss of Barrier Function in Human Bronchial Epithelia at Non-Cytotoxic Doses. *Int. J. Nanomedicine* 2014, 9:4093-105

25. Boland S, **Hussain S**, Baeza-Squiban A, "Carbon Black and Titanium Dioxide Nanoparticles Induce Distinct Molecular Mechanisms of Toxicity" *Wiley Interdiscip Rev Nanomed Nanobiotechnol*. 2014, 6(6):641-52

26. Yokel RA, **Hussain S,** Garantziotis S, Demokritou P, Castranova V and Cassee F. The Yin: An adverse health perspective of nanoceria: uptake, distribution, accumulation, and the mechanisms of its toxicity. *Environ. Sci.: Nano* 2014, 1(5):406-428.

27. Taylor AJ, McClure C, Shipley-Philips JK, Thompson EA, **Hussain S**, Garantziotis S, Parsons GN, Bonner JC. Atomic Layer Deposition Coating of Carbon Nanotubes with Aluminum Oxide Alters Pro-Fibrogenic Cytokine Expression by Human Mononuclear Phagocytes In vitro and Reduces Lung Fibrosis in Mice In vivo PLOS One 2014. 9(9):e106870

28. **Hussain S** and Garantziotis S. Interplay between apoptotic and autophagy pathways after exposure to cerium dioxide nanoparticles in human monocytes. *Autophagy*. 2013. 9(1):101-103.

29. **Hussain S**, Vanoirbeek J, Boland S, Haenen S, Marano F, Nemery B, Hoet PHM. Local lung inflammation leads to targeting of distinct organs by gold nanoparticles. *BioMed Res Int* (formerly Journal of Biomedicine and Biotechnology) 2013:923475

30. **Hussain S**, Al-Nsour F, Rice A, Marshburn J, Ji Z, Zink I, Walker N, Garantziotis S. Cerium dioxide nanoparticles induce cell death in human peripheral blood monocytes through apoptosis and autophagy. *ACS Nano*. 2012. 6(7):5820-5829.

31. **Hussain S**, Vanoirbeek J, Boland S, Marano F, Nemery B, Hoet PHM. Nano-titanium dioxide modulates the dermal sensitization potency of DNCB. *Part Fibre Toxicol*. 2012. 9:15

32. **Hussain S**, Al-Nsour F, Rice AB, Marshburn J, Ji Z, Zink JI, Yingling B, Walker NJ, Garantziotis S. Cerium dioxide nanoparticles do not modulate the lipopolysaccharide-induced inflammatory response of human monocytes. *Int. J. Nanomedicine* 2012. 2; 7:1387-97

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40. **Hussain S**, Boland S, Baeza-Squiban A, Hamel R, Thomassen LCJ, Martens JA, Billon-Galland MA, Fleury-Feith J, Moisan F, Pairon JC, Marano F. Oxidative stress and proinflammatory effects of carbon black and titanium dioxide nanoparticles: Role of particle surface area and internalized amount. *Toxicology* 2009. 260, 142–149.

41. **Hussain S**, Khan MZ, Khan A, Javed I, Asi MR. Toxico-pathological effects in rats induced by concurrent exposure to aflatoxin and cypermethrin. *Toxicon* 2009. 53, 33–41.

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43. Majumder N, Mazumder MH, Olapeju O, Amin MS, Brundage K, Velayutham M, Vanoirbeek J, Kelley EE, **Hussain S**. Ozone and house dust mite allergen co-exposure cause adverse asthmatic phenotype in a mouse model [Under Review]

44. Sakamachi Y, Solis A, Johnson CG, Xiaoling M, **Hussain S**, O'Dwyer DN, Mehta S, Trempus CS, Thomas SY, Li JL, Karmaus P, McGrath J, Gibson K, Gleiberman A, Walts A, Invernizzi R, Molyneaux PL, Yang I, Zhang Y, Kaminski N, Schwartz DA, Gudkov A, Garantziotis S. Toll-Like-Receptor 5 protects against pulmonary fibrosis by reducing lung dysbiosis (in revision Sci Transl Medicine)**.**

45. Md Habibul Hasan Mazumder, Jasleen Gandhi, Ian Cumming, Sydney Stradtman, Nairrita Majumder, Quincy A. Hathaway, Jonathan Shannahan, Michael Hu, Robert M Tighe, Salik Hussain. Lung and Gut Microbial Dysbiosis and Inflammation after Inhalation Co-exposure to Ultrafine Carbon Black and Ozone [Under Review]

POSTER PRESENTATIONS/ABSTRACTS in Journal Special Issues (SELECTED)

1. **S. Hussain**, N. Majumder, V. Deepak, M. Velayutham, M. Mazumder, A. Roohollahi, S. Wen, V. Khramtsov, E. Kelley, S. Hadique. Biochemical Predictors for Covid-19 Disease Course and Mortality *Am J Respir Crit Care Med* 2022;205:A4576

2. V. Deepak, N. Majumder, A. Roohollahi, H. Mazumder, S. Xie, S. Wen, S. Hadique, **S. Hussain**. Potential role of a single nucleotide polymorphism of nod-like receptor-x1 in covid-19 susceptibility. *Chest*, 2022 https://doi.org/10.1016/j.chest.2021.12.140

3. N. Majumder, M. Velayutham, V. Kodali, D. Bitounis, M. Mazumder, A. Erdely, T. Nurkiewicz, P. Demokritou, and **S. Hussain**. Macrophage-Endothelial Cell Cross Talk in Ozone-Oxidized Carbon Black Nanoparticle Exposure. The Society of Toxicology 61st Annual Meeting, San Diego, CA March 27-31, 2022. *The Toxicologist 3691*, page 225.

4. M. H. Mazumder, N. Majumder, T. Goldsmith, Z. Xie, Q. Hathaway, T. R. Nurkiewicz, J. Shannahan, and **S. Hussain**. Lung and Gut Microbial Dysbiosis and Inflammation after Inhalation Co-exposure to Ultrafine Carbon Black and Ozone. The Society of Toxicology 61st Annual Meeting, San Diego, CA March 27-31, 2022. *The Toxicologist 3509*, page 186.

5. M. Velayutham, N. Majumder, E. Kelley, V Khramtsov, **S. Hussain**. Ozone and Ultrafine Carbon Interaction Generated Oxidants Play Important Role in Pulmonary Inflammation in Mice. *Free Radical Biology and Medicine* 180:s76. doi: 10.1016/j.freeradbiomed.2021.12.178

6. **S. Hussain**, N. Majumder, L. Shelling, G. William, M. Mazumder. Ozone Inhalation During Sensitization Primes for a Greater Allergic Inflammation and Lung Function Decline. *Am J Respir Crit Care Med* 2021;203:A3179.

7. N Majumder, M Mazumder, VK Kodali, WT Goldsmith, M. Velayutham, E. DeVallance, Garner, J Griffith, Bowdridge, Nurkiewicz TR, Erdely A, Kelley EE, **S Hussain**. Oxidant-Induced Epithelial Alarmin Pathway Mediates Lung Function Decline after Ultrafine Carbon Black and Ozone Inhalation Co-exposure. 2021 The Society of Toxicology 60th Annual Meeting (Online). *The Toxicologist 3043*, page 299.

8. QA Hathaway, N Majumder, A Kunovac, Z Xie, MV Pinti, JR Harkema, T Nurkiewicz, JM Hollander, and **S Hussain**, Modelling the Pulmonary Transcriptome in a Dose and Substrate-Dependent Manner: Carbon Black and Ozone Co-Exposure. The Society of Toxicology 60th Annual Meeting (Online). *The Toxicologist 3047*, page 300.

9. E DeVallance, EC Bowdridge, KL Garner, JA Griffith, Batchelor TP, **S Hussain**, Kelley EE, TR Nurkiewicz. Alarmin IL33 is Vasoconstrictive and Acutely Disrupts Endothelial-Dependent Dilation. 2021 The Society of Toxicology 60th Annual Meeting (Online). *The Toxicologist 2225*, page 124.

10. KL Garner, EC Bowdridge, JA Griffith, E DeVallance, Batchelor TP, KJ Engels, K Vix, WT Goldsmith, **S Hussain**, TP Batchelor, TR Nurkiewicz. Nanomaterial Inhalation during Gestational Windows Alters Maternal Angiotensin II Microvascular Sensitivity and Fetal Outcomes. 2021 The Society of Toxicology 60th Annual Meeting (Online). *The Toxicologist 2226*, page 124.

11. JA Griffith, KL Garner, E DeVallance, EC Bowdridge, **S Hussain**, WT Goldsmith, K Vix, TR Nurkiewicz. Impact of Nanoparticle Inhalation during Gestation on Cyclooxygenase Metabolites. 2021 The Society of Toxicology 60th Annual Meeting (Online). *The Toxicologist 2712*, page 243.

12. EC Bowdridge, KL Garner, JA Griffith, ER DeVallance, **S Hussain**, TP Batchelor, K Vix, KJ Engels, WT Goldsmith, TP Batchelor, TR Nurkiewicz. Maternal Gestation Engineered Nanomaterial Exposure Impairs Vascular Reactivity, Estrogen, and Fertility in F1 Females. 2021 The Society of Toxicology 60th Annual Meeting (Online). *The Toxicologist 2713*, page 245.

13. Majumder N, Williams XM, Goldsmith T, Ross MA, Hubczak J, Kodali VK, Nurkiewicz TR, Erdely A, Kelley EE, **Hussain S**. Inhalation Co-Exposure to Ultrafine Carbon and Ozone Leads to Significant Pulmonary and Systemic

Oxidative Stress. 2020 The Society of Toxicology 59th Annual Meeting (Online). *The Toxicologist 2552*, page 367.

14. Williams X, Burrage E, Lewis S, Chantler P, **Hussain S,** Kelly E. Xanthine Oxidase-Induced Vascular Dysfunction in Inhalation Toxicology. *Free Radic Biol Med* Volume 159, Supplement 1, 2020, Page S84 doi: https://doi.org/10.1016/j.freeradbiomed.2020.10.218

15. **S. Hussain**, S. Xie, A. Abukabda, W.T. Goldsmith, J.S. Mustafa, T. Nurkiewicz, V. Castranova. Ultrafine Particle and Ozone Co-Exposure Significantly Aggravates Lung Inflammation and Systemic Vascular Responses. American Thoracic Society (ATS) Conference May 17-22, 2019, Dallas, TX *Am J Respir Crit Care Med* 2019; 199: A1174

    This abstract was also presented at International Society of Aerosol Medicine Meeting at the same conference

16. A. Solis, Y. Sakamachi, C. Johnson, M. Xiaoling, **S. Hussain**, C. Trempus, A.B. Rice, E.K. Silverman, Y. Zhang, F. Sciurba, A. Walts, I. Yang, D.A. Schwartz, S. Garantziotis. Microbiome Protects Against Pulmonary Fibrosis Through TLR5 Activation. American Thoracic Society (ATS) Conference May 17-22, 2019 Dallas, TX *Am J Respir Crit Care Med* 2019;199:A7027

17. S. Xie, W. T. Goldsmith, A. B. Abukabda, K. L. Garner, E. C. Bowdridge, T. P. Batchelor, J. Mustafa, V. Castranova, T. R. Nurkiewicz, and **S. Hussain**. Carbon Black and Ozone Co-exposure Present Novel Prospects of Disease Susceptibility. 2019 The Society of Toxicology 58th Annual Meeting, Baltimore, MD, USA. *The Toxicologist 2040*, page 246.

18. E. C. Bowdridge, A. B. Abukabda, K. L. Garner, C McBride, T. P. Batchelor, and **S. Hussain**, W. Goldsmith, T. R. Nurkiewicz. Gestational ENM Inhalation Compromises Placental Efficiency. 2019 The Society of Toxicology 58th Annual Meeting, Baltimore, MD, USA. *The Toxicologist 1505*, page 121.

19. A. B. Abukabda, E. C. Bowdridge, K. L. Garner, C McBride, T. P. Batchelor, W.T. Goldsmith, and **S. Hussain**, T. R. Nurkiewicz. Gestational Inhalation Exposure to Titanium Dioxide Nanoparticles Increases Maternal-Fetal Vascular Resistance. 2019 The Society of Toxicology 58th Annual Meeting, Baltimore, MD, USA. *The Toxicologist 2069*, page 253.

20. K. L. Garner, A. B. Abukabda, E. C. Bowdridge, T. P. Batchelor, **S. Hussain**, W.T. Goldsmith, and T. R. Nurkiewicz. Influence of Maternal Engineered Nanomaterial Inhalation on Uterine Adrenergic and Myogenic Microvascular Responses. 2019 The Society of Toxicology 58th Annual Meeting, Baltimore, MD, USA. *The Toxicologist 2070*, page 253.

21. **Hussain S**, Johnson CG, Xiaoling M, Trempus C, Rice A, Gudkov A, Yang IV, Schwartz DA, Zhang Y, Garantziotis S. Tlr5 Protects from Pulmonary Fibrosis by Promoting Epithelial Survival After Injury: Interaction with the Microbiome American Thoracic Society (ATS) Conference May 18-23, 2018 San Diego, CA *Am J Respir Crit Care Med* 2018;197:A1061

22. **Hussain S,** Taylor AJ, Miller-DeGraff L, George M, Rice A, Bonner JC, Garantziotis S. Roll of Toll-Like receptor 5 in Multi-walled Carbon Nanotube –Induced Lung injury March 11-15, 2018, The Society of Toxicology 57th Annual Meeting, San Antonio, Texas, USA.

23. **Hussain S,** Ji Z, Taylor AJ, Miller-DeGraff L, George M, Marshburn JD, Snyder R, Rice A, Bonner JC, Garantziotis Pristine and Carboxylic Acid Functionalized Multi-Walled Carbon Nanotubes Induce Pulmonary Injury

Through Distinct Mechanisms. March 12-16, 2017, The Society of Toxicology 56th Annual Meeting, Baltimore, Maryland, USA.

24. **Hussain S**, Kodavanti PP, Marshburn JD, Janoshazi A, Marinakos SM, George Margaret, Rice A, Wiesner MR and Garantziotis S. Decreased Uptake and Enhanced Mitochondrial Protection Underlie Reduced Toxicity of Nanoceria in Human Monocyte-Derived Macrophages 8th International Nanotoxicology Congress, June 1-4, 2016 Boston, USA

25. **Hussain S,** Ji Z, Taylor AJ, Miller-DeGraff L, George M, Marshburn JD, Snyder R, Rice A, Bonner JC, Garantziotis Hyaluronan functionalization reduces lung inflammatory and fibrotic responses of multi-walled carbon nanotubes. March 13-17, 2016, The Society of Toxicology 55th Annual Meeting, New Orleans, LA, USA. *The Toxicologist* 3498, page 586.

26. **Hussain S**, Sangtian S, Snyder R, Marshburn J, Rice A and Garantziotis S. Human Bronchial Epithelia Exposure to Multi-Walled Carbon Nanotubes Induces Inflammasome-Dependent Pyroptosis and a Profibrotic Response. American Thoracic Society (ATS) Conference May 16-21, 2015 San Diego, CA. *Am J Respir Crit Care Med* 189; A3806

27. **Hussain S,** Sangtian S, Rice A, George M, Snyder R. Garantziotis S. Modulation of pre-existing inflammation in peripheral blood monocytes from healthy and diabetic subjects after nanomaterial exposures. American Thoracic Society (ATS) Conference May 16-21, 2015 San Diego,CA. *Am J Respir Crit Care Med* 189; A3807

28. Snyder RJ, **Hussain S**, Sangtian S, Rice A, Garantziotis S. Prevention of Terminal Differentiation in Primary Human Bronchial Epithelial Cells Exposed to Multi-Walled Carbon Nanotubes. American Thoracic Society (ATS) Conference May 16-21, 2015 San Diego, CA. *Am J Respir Crit Care Med* 189: A3805

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30. **Hussain S,** Snyder R, Sangtian S, Anderson A, Marshburn J, Rice A, Walker N, Garantziotis S. Multi-walled carbon nanotubes induce pyroptosis and inflammasome activation in primary human bronchial epithelial cells. American Thoracic Society (ATS) Conference May 17-22 Philadelphia, PA. *Am J Respir Crit Care Med* 187; A2457

31. Snyder RJ, **Hussain S**, Wine r, Roberts J, Walker N, Brown J, Garantziotis S. Loss of Epithelial Monolayer Integrity Following Exposure of Primary Human Airway Cells to Multi-Walled Carbon Nanotubes American Thoracic Society (ATS) Conference May 17-22 Philadelphia, PA. *Am J Respir Crit Care Med 187; A2462*

32. Marshburn JD, Rice AB, George MD, Anderson S, Walker NJ, Garantziotis S, **Hussain S**. Environmentally Relevant Concentrations of Ceria Nanoparticles Fail to Elicit A Toxic Response in Primary Human Monocyte-Derived Macrophages and Sputum Macrophages. American Thoracic Society (ATS) Conference May 17-22 Philadelphia, PA. *Am J Respir Crit Care Med* 187; A2464

33. Marshburn JD, Rice AB, George MD, Anderson S, Walker NJ, Garantziotis S, **Hussain S**. 2013. The Effects of Ceria Nanoparticles on Primary Human Monocyte-Derived Macrophages and Bronchial Macrophages. March 10-14 Society of Toxicology (SOT) annual Meeting 2013, San Antonio, TX, USA. *The Toxicologist 1751A*

34. **Hussain S**, Al-Nsour F, Rice A, Marshburn J, Ji Z, Zink I, Walker N, Garantziotis S. 2012. Cerium dioxide nanoparticles induce cell death in human peripheral blood monocytes through apoptosis and autophagy. American Thoracic Society (ATS) Conference May 18-23 San Francisco, California, USA. *Am J Respir Crit Care Med* 185; A1193

35. **Hussain S**, Al-Nsour F, Rice A, Marshburn J, Ji Z, Zink I, Walker N, Garantziotis S. 2012. Cerium dioxide nanoparticles do not modulate the lipopolysaccharide-induced inflammatory response of human monocytes. American Thoracic Society (ATS) Conference May 18-23 San Francisco, California, USA. *Am J Respir Crit Care*

Med 185; A1185

36. **Hussain S**, Val S, Baeza A, Ioana F, Andreau K, Marano F and Boland S. Biological responses induced in bronchial epithelial cells by carbon black and titanium dioxide nanoparticles: similar outcomes but distinct molecular pathways. 4th NanoImpactNet Conference 27 Feb-2 March 2012 Dublin Ireland.
37. **Hussain S**, Vanoirbeek JAJ and Hoet PHM. Nano-titanium dioxide modulates the dermal sensitization potency of DNCB. March 6-10 SOT annual Meeting 2011, Washington DC USA. *The Toxicologist 362A*
38. **Hussain S**, Guadagnini R, Baeza-Squiban A, Marano F and Boland S. Distinct Pathways but similar outcome: Relative significance of physicochemical characteristics and nanoparticle type in diverse biological responses. 3rd Nanotoxicology Conference 2-4 June 2010 Edinburgh UK.
39. **Hussain S**, Vanoirbeek JAJ, Luyts K, De Vooght V, Verbeken E, Boland S, Marano F, Nemery B, Hoet PHM. Modulation of an asthmatic response by nanoparticles in a mouse model of chemical–induced asthma. 49th Annual Meeting of Society of Toxicology and ToxExpo 7-11 March 2010 Salt Lake City Utah USA. *The Toxicologist*
40. **Hussain S**, Ioana Ferecatu, Caroline Borot, Karine Andreau, Armelle Baeza-Squiban, Francelyne Marano and Sonja Boland. Role of nanoparticle chemical composition in apoptotic effects. 2nd NanoImpactNet Conference 9-12 March 2010 Lausanne, Switzerland.
41. **Hussain S**, Hamel R, Andreau K, Baeza A, Marano F and Boland S. Multifaceted cell death pathways activation by nanoparticles: prominent role of oxidative stress in carbon black and lysosomal destabilization in titanium dioxide cell death. The EMBO meeting August 29th - September 1st 2009 Amsterdam, Netherland
42. **Hussain S**, Val S, Boland S, Baeza A and Marano F "Comparison of the effects of carbon black and titanium dioxide nanoparticles on human bronchial epithelial cells" 11-14 June 11th International Inhalation Symposium 11-14 June 2008 Hanover, Germany *** Best Research Presentation/Poster Award**
43. **Hussain S**, Boland S, Baeza A and Marano F "Role of Oxidative Stress in Toxicological Effects of Nanoparticles" ESF-EMBO Symposium "Probing Interactions Between Nanoparticles/Biomaterials and Biological Systems - Alternative Approaches to Bio- and Nano-Safety" 3-8 November 2007 Sant Feliu de Guixols Spain
44. **Hussain S**. "In Vitro Toxicity of Nanoparticles on Respiratory Epithelial Cells: Impact of Physico-Chemical Characteristics and Oxidative Stress" Congrès de la SPTC Université de Rennes, France. 1, 27-28 September 2007.
46. Lung and Gut Microbial Dysbiosis and Inflammation after Inhalation Co-exposure to Ultrafine Carbon Black and Ozone

Roseane Ma Maia Santos
116 Corkrean Way, Morgantown, WV 26508
Phone (304) 381-2666; Cell (912) 308-6070
www.linkedin.com/pub/roseane-santos/14/663/812
www.researchgate.net/profile/Roseane_Santos3/info
http://facultyrow.com/profile/RoseaneMariaMaiaSantos
santosroseane1@gmail.com

EDUCATION

1999-2004
Doctor of Philosophy in Pharmaceutical Sciences, School of Pharmacy and Pharmaceutical Sciences, State University of New York at Buffalo (SUNY), Buffalo, New York
Thesis: Genomic Effects of Interferon-beta in Multiple Sclerosis Patients Advisor: Murali Ramanathan, Ph.D.

1989-1991
Master of Science in Hospital Pharmacy, Universidade Federal do Rio de Janeiro (UFRJ), Rio de Janeiro, Brazil
Thesis: Estudos Farmacocineticos das Xantinas na Populacao Brasileira Advisor: Darcy Roberto Lima, MD, PhD

1978-1979
Bachelor of Science in Pharmacy and Biochemistry
Universidade Federal do Rio de Janeiro (UFRJ), Rio de Janeiro, Brazil

1973-1978
Bachelor of Science in Pharmacy
Universidade Federal do Rio de Janeiro (UFRJ), Rio de Janeiro, Brazil

CERTIFICATION

2009 Foreign Pharmacy Graduate Examination Committee Certificate National Association of Boards of Pharmacy (NABP)
2008, 2013, 2016 Certified NIH Principal Investigator, NIH Office of Human Subjects Research

PROFESSIONAL HISTORY

2019 – Present
Associate Professor, Department of Microbiology, Immunology and Pharmacology, Arkansas College of Osteopathic Medicine (ARCOM-ACHE), Fort Smith, AR 72916

2014- 2019

Associate Professor, Department of Pharmaceutical Sciences Pharm D Program South University School of Pharmacy, Savannah, GA

2013- 2019

Associate Professor, Department of Pharmaceutical Sciences
Anesthesiologist Assistant Program South University School of Pharmacy, Savannah, GA

2007-2014

Assistant Professor, Department of Pharmaceutical Sciences
South University School of Pharmacy, Savannah, GA

2004-2007

Assistant Professor, Department of Pharmaceutical Sciences Nova Southeastern University College of Pharmacy, Ft Lauderdale, FL

1999-2004

Research Assistant, Department of Pharmaceutical Sciences State University of New York at Buffalo (SUNNY), Buffalo, New York

1994-1999

Assistant Professor, Departamento de Ciencias Biologicas, Universidade do Rio de Janeiro (UNI-RIO), Rio de Janeiro, Brazil

1994

Director of Hospital Pharmacy , Hospital Universitario Clementino Fraga Filho (UFRJ), Rio, Brazil

1983-1994

Hospital Pharmacist, Hospital Universitario Clementino Fraga Filho (UFRJ), Rio, Brazil

1986-1991

Clinical Pharmacokineticist, Instituto de Farmacologia Clinica, Rio de Janeiro, Brazil

1981-1982

Officer of Drug Regulatory Affairs , Divisao Nacional de Medicamentos (DIMED), Ministerio da Saude, Brasilia, Brazil

1980-1981

Technical Assistant and Sales Personnel Trainer, Don Baxter Industria Quimica, Rio de Janeiro, Brazil

1978-1980

Clinical Laboratory Associate, Laboratorio de Analises Clinicas – Bioanalises, Rio de Janeiro, Brazil

TEACHING EXPERIENCE

2021- Present

Teaching Associate Professor, Department of Physiology and Pharmacology. Lectures of General and Applied Pharmacology to courses at the level of graduate programs at School of Medicine and School of Dentistry.

Scheduled teaching:

PCOL 820 Medical Pharmacology 2 2021-2022 – School of Medicine
PCOL 760 Pharmacology and Therapeutics 2021 – School of Dentistry
PCOL 763 Applied Pharmacology 2021 – School of Dentistry
PCOL 549 Applied Pharmacology Spring 2022 – Master of Health Sciences
PCOL 593A Intro to Pharmacology for Physician Assistant Spring 2022 –

Directed Student Learning

Research Apprenticeship Program
Office of Undergraduate Research, WVU
Fall 2022-Spring 2023
Taylor Brown, West Virginia University, Biomedical Engineering,
Society of Women Engineers Girls Stem Day Co-Chair
Undergraduate Research Apprentice
Alexandria Moran, Biochemistry, sophomore, Davis and Eberly College, West Virginia University

2019 – Present Arkansas College of Osteopathic Medicine, Associate Professor of Pharmacology, Department of Microbiology, Immunology and Pharmacology.
Lectures on Foundation of Pharmacology, Drug discovery and regulation, Pharmacokinetics, Pharmacodynamics, Pharmacogenomics, Anticoagulants, Anti-cancer drugs, Diuretics, Endocrine System Drugs, Central Nervous System Drugs, GI Tract Drugs.

2007- 2019 South University School of Pharmacy Pharm D Program (3-year)
1) Pharmacology courses (Integrated Sequences):
Renal (Renal Pathophysiology, Electrolyte Disorders Pharmacology, Immunosuppressants Pharmacology) , Gastrointestinal (G.I. Overview; Gastric Acid Pharmacology; Prokinetics, Antiemetics); Inflammation (NSAIDs and DMARDs– Pharmacology; Arthritis Osteoarthritis and Rheumatoid arthritis– Pathophysiology; Gout – Pathophysiology and Pharmacology; Asthma - Pathophysiology and Pharmacology); Oncology (Antimitotic agents; Anthracyclines & topoisomerase inhibitors; Monoclonal antibody technology and pharmacology)
2) Biochemistry I & II: Chemical Constituents of Life – Water, pH and Ionic Equilibria Thermodynamics and High Energy Biomolecules (ATP), Overview of Metabolism – Vitamins and Co-factors, Structure and Properties of Amino Acids and Proteins, Glycogen anabolism and catabolism; Pentose Monophosphate Shunt
3) Molecular Biology: Structure and Function of DNA: replication, recombination, mutation and repair, RNA Polymerases, products of Gene Transcription, Promoters, Transcription Factors, RNA processing, Protein Synthesis: Ribosomes (rRNA), m-RNA, t-RNA and the Genetic Code , Biotechnology: Recombinant DNA Technology I – Restriction Enzymes Biotechnology: Recombinant DNA Technology II – Amplification of Genetic Information in Small Samples (PCR); Forensic and Diagnostic Uses; Biotechnology: Recombinant DNA Technology III – Gene Libraries and Expression

Vectors; Biotechnology: Recombinant DNA Technology IV– Recombinant Protein Therapeutics Introduction to Bioinformatics, Databases used in Molecular biology; Molecular Biology of Cancer; Pharmacogenetics and Pharmacogenomics: genetic variations in drug metabolism; Pharmacogenomics I : genetic variations in drug target; Pharmacogenomics II: genetic variations in drug responses; Molecular biology methods in Pharmacogenomics: Real-time PCR and Microarrays Genomic effects of Interferon beta in Multiple Sclerosis patients

4) Electives: Special Projects in Pharmaceutical Sciences, Drug Design & Development South University Anesthesiology Assistant Program

1) General Pharmacology I:

Pharmacodynamics I, Pharmacodynamics II, Pharmacokinetics, Autonomic Nervous System I

Autonomic Nervous System II, Cholinergic Pharmacology I, Cholinergic Pharmacology II Adrenergic Pharmacology I, Adrenergic Pharmacology II, Treatment of Angina Pectoris Diuretics, RAAS Modulators, Treatment of Hypertension, Treatment of Hyperlipidemia Anticoagulants & Thrombolytics, Treatment of Cardiac Arrhythmia

2) General Pharmacology II;

Local Anesthetics, Skeletal Muscle Relaxants, General Anesthetics

Opioids, Antiemetics/Drugs of Abuse, Sedative Hypnotics, Treatment of Seizure Disorders, Treatment of Anxiety and Depression, Treatment of Psychosis and Mania Treatment of Alzheimer's Disease, Treatment of Parkinson's Disease, Anti-inflammatory Agents, Treatment of Asthma, Antibiotics I and II, Antifungals, Antivirals, Treatment of Diabetes, Chemotherapy of Cancer

2004-2007 Nova Southeastern University College of Pharmacy Pharm D Program (4-year) Undergraduate courses: Pharmacokinetics Basic and Clinical, Traditional, Post-Baccalaureate, International

Elective course: Pharmacogenomic approach for the diagnosis and treatment of Multiple Sclerosis

1999-2004 State University of New York at Buffalo (SUNY), Research Assistant

1994-1999 Centro de Ciencias Fisiologicas e Biologicas, Nursing and Nutritionist Programs Universidade do Rio de Janeiro (UNI-RIO), Rio de Janeiro, Brazil

Undergraduate courses: Pharmacology of Autonomic System, Pharmacodynamics and Pharmacokinetics, Diuretics, Anesthetics, Analgesics, Antiarrhythmics, Anticonvulsants, Anti- thrombolytic and GI disorders

1983-1984 School of Pharmacy and University Hospital, Rio, Brazil, Clinical Pharmacy

HONORS AND AWARDS

2016 Guest Speaker, 26th International Conference on Coffee Science November 12-19, Kunming/ Mangshi, China

2016 Keynote speaker, Honorable Guest, 4th International Conference on Clinical Pharmacy November 7-9, Las Vegas, NV, USA

2015 Keynote speaker, Honorable Guest and Co-Chair of Biomedical Sciences 3rd International Conference on Clinical Pharmacy December 7-9, Atlanta, GA, USA

2015 Keynote speaker, Honorable Guest of International Forum on Coffee and its Health 3rd International Conference on Clinical Pharmacy December 7-9, Atlanta, GA, USA

2015 Especial Recognition of Research on Coffee and Health,
23rd ENCAFE, Associacao Brasileira das Industrias de Cafe, Ilheus, Brazil.

2014 Keynote speaker, Co-Chair of Biomedical Sciences
2nd International Summit on Clinical Pharmacy December 2-3, San Francisco, CA, USA

2014 Keynote speaker, Honorable Guest of International Forum on Coffee and its Health 2nd International Summit on Clinical Pharmacy December 2-3, San Francisco, CA, USA

2013 Keynote speaker, Honorable Guest and Co-Chair of Biomedical Sciences International Summit on Clinical Pharmacy and Dispensing. November 18-20 at San Antonio, TX

2012 Especial Recognition of Research on Coffee and Health,
20th ENCAFE, Associacao Brasileira Das Industrias de Café, Salvador, Brazil

2004 Best Student, Resident Fellow Paper Award, American College of Clinical Pharmacy (ACCP) 2003 Fellowship from PFIZER, Graduate student, Doctoral Candidate at State University of New York at Buffalo

1999 Fellowship from CAPES, Ministry of Education, Brazil, 4-year Scholarship Doctoral Program, State University of New York at Buffalo

SCHOLARSHIP OF SERVICE

2019 Interprofessional Education (IPE) Taskforce Committee, Assistant Chair
Curriculum Mapping, member
Faculty Search Committee
2018 Condensed Self-Study Report of South University, Accreditation Council for Pharmacy Education – Standards 1-4 sub-group
Promotions Committee
2017 Faculty Development Committee

Program Assessment Committee
Promotions Committee
2016 Faculty Development Committee
Program Assessment Committee
Promotions Committee
2015 Faculty Development Committee
Admissions Committee
Promotions Committee
Events Committee
2014 Professional Outreach and Continuing Pharmacy Education Committee
Events Committee
Honors and Awards Committee
2013 Professional Outreach and Continuing Pharmacy Education Committee
Events Committee
Honors and Awards Committee
2012 American Association of Colleges of Pharmacy (AACP) Paul Dawson Biotechnology Award - Judge
2011 Condensed Self-Study Report of South University, Accreditation Council for Pharmacy Education – Standards 1-15 sub-group
Professional Outreach Committee
Honors and Awards Committee
Georgia Tech-Savannah Regional Science & Engineering Fair- Judge
2010 Admissions Committee, member
Professional Outreach Committee
Honors and Awards Committee
2009 Science and Engineering Regional Fair – Judge
Admissions Committee, member
2008 Admissions Committee, member
Faculty Advisory Council, Chair
Faculty Development Committee, Member
2007 Admissions Committee, member
Substance of Abuse Committee, Chair
Faculty Advisory Council, Chair
Faculty Development Committee, Member

PUBLICATIONS

BOOKS

2016 Santos R.M. and Lima D.R. *An Unashamed Defense of Coffee: 101 reasons to Drink Coffee without Guilt*, Translation to Korean language
2015 Lima D.R. and Santos R.M. *MANUAL de FARMACOLOGIA CLÍNICA, TERAPÊUTICA E*

TOXICOLOGIA, Expansao Editorial, Porto Alegre, Brazil
2009 Santos R.M. and Lima D.R. *An Unashamed Defense of Coffee: 101 reasons to Drink Coffee without Guilt,* XLibris (Random House), USA
2007 Santos R.M. and Lima D. *Coffee, the Revolutionary Drink for Pleasure and Health* XLibris (Random House), USA
CHAPTERS
2015 Santos R.M. and Lima D.R. *Coffee Health Effects from Early Fetus Development through Childhood and Adolescence*, in Translational Toxicology: Defining a New Therapeutic Discipline, Ed. Hughes, C & Waters, M., part III, chapter 11: 321-337, 2016, Humana Press (Springer).
2005 Santos RM, Schentag JJ. *Bacterial killing Vs. Bacterial resistance: Antibiotic Therapy* Editor: Silva CH, in Microbilogia Medica Humana, Ed. Medico e Cientifica Ltda., MEDSI, Rio de Janeiro, Brazil.

PEER REVIEWER (samples)
2019 Manuscript ID: SREP-19-06144A. Title: Genetic Polymorphisms in ADORA2A and CYP1A2 Influence Caffeine's Effect on Postprandial Glycaemia, Scientific Reports, a Nature Research journal, June 2019.
2019 Manuscript ID: BJN-RSMA-19-0480. Title: Coffee consumption, general and abdominal obesity in adults: a systematic review and meta-analysis. British Journal of Nutrition, June 2019
2018 Manuscript ID: MOJBB-18-RA228. Title: Effect of intervention of increasing knowledge and Awareness of human papilloma virus (HPV) infection and HPV vaccination among graduate students in a private university, Kedah State, Malaysia. MOJ Bioequivalence and Bioavailability, July 2018.
2017 Manuscript ID: HERMED-D-17-00999. Title: The lack of association of coffee consumption with the prevalence of self-reported Type 2 diabetes mellitus in a Mexican population, Journal of Herbal Medicine,
2017 Manuscript ID: JFDS-2017-0561-R1. Title: Caffeine may reduce perceived sweet taste in humans, Authors: Choo Ezen, Picket Benjamin, Dando Robin, Journal of Food and Science, 2017
2017 Manuscript ID: EJTCM-D-17-00140 Title: Effects of Coffee Consumption on glucose metabolism: a systematic review of clinical trials. Journal of Traditional and Complementary Medicine, Authors: Caio E. G. Reis, José G. Dórea, ; Teresa H. M. da Costa, 2017
2017 Manuscript ID: molecules-170894, Title: Chlorogenic Acid: Recent Advances on its Dual Role as Food Additive and Nutraceutical against the Metabolic Syndrome, Authors: Jesús Santana-Gálvez, Luis Cisneros-Zevallos, Daniel A., Velázquez *, Molecules, MDPI, Barcelona, Spain, 2017.

2016 NUAM-D-16_00071 Assessment of CYP1A2 enzyme activity in relation to type-2 diabetes and habitual caffeine intake, Urry E, Jetter A and Landolt HP, Nutrition and Metabolism Journal 2016.
2014 Manuscript for review ID ECPS-14-RA-009: Research article (ECPS) E- Cronicon Pharmaceutical Sciences December 2014 "Analgesic and Anti- inflammatory activity of Andrographis pniculata and andrographolide in diabetic rodents".
2014 Manuscript for review | Ms No: 8134891927| Research article |JPTDR | Herbert Publications May 2014 "A novel application of Wutou (Aconitum carmichaeli) and Banxia (Pinellia ternat) aqueous extract on wound healing of rats."
2014 Manuscript for review | Ms No: 3224417376| Research article |JPTDR | Herbert Publications, February 2014 "Callicarpa macrophylla : A REVIEW"
2012 Manuscript for review | Ms No: JFS-201-1159| Research article |JFS | IFT Scientific Journal , September 2012. "A comparative study of volatile constituents of Southeast Asian Coffea Arabica, Coffea liberica and Coffea robusta green beans and their antioxidant activities"
2011 Manuscript for review | Ms No: JFS-2011-1208| Research article |JFS | IFT Scientific Journal, October 2011 "Flaking Increases the Anti-Inflammatory Activity and Melanoidin Extractability of Coffee" 2006 Book review: Alexander, David Attwood. Physicochemical Principles of Pharmacy, 4thedition, 2006 Pharmaceutical Press, London, UK, 512, pp. in American Journal of Pharmaceutical Education, 70 (5): 22.

EDITORIAL REVIEW BOARD

MEMBER
American Journal of Pharmacy Education (AJPE) Journal of Drug Metabolism and Toxicology (JDMT)
Journal of Food and Science (JFS)
Journal of Pharmaceutical Technology and Drug Research (JPTDR)
Georgia Pharmacist Association Journal
Herbert Open Access Journal of Biology
Austin Journal of Pharmacology and Therapeutics (AJPT)
HSOA Journal of Addiction and Neuropharmacology
Journal of Pharmacology and Alternative Medicine Therapeutics
Elsevier Nutrition and Metabolism (Allied Academies)
MDPI Journals – Nutrients, Beverages, Foods, Molecules

ABSTRACT REVIEWER

2017 Athens Institute for Research and Education Annual Meeting (ATINER) 2011 Annual American Association of Pharmaceutical Scientists (AAPS) 2010 Annual American Association of Pharmaceutical Scientists (AAPS)
2010 Biomedical Informatics and Cybernetics International Symposium

PROFESSIONAL AFFILIATIONS

American Association of Colleges Pharmacy (AACP)
American Association of Pharmaceutical Scientists (AAPS)
Associacao Brasileira das Industrias de Café (ABIC)
International Women in Coffee Association (IWCA)

CONSULTING

2016- Present Dr. Coffee Research and Consultancy LLC, Savannah, GA, USA; http:// www.drcoffeerc.com
2012-2013 Baggio Coffees, Sao Paulo, Brazil, http://www.baggiocoffee.com.br
2009-2010 HealthWise Gourmet Coffee, New York, NY, USA, http://www.healthwisecoffee.com
2007-2009 Associacao Brasileira das Industrias de Café, Brazil, http://www.abic.com.br

JOURNAL ARTICLES

1. **Santos RM**. Preliminary studies on genetic profiling of coffee and caffeine consumption, Beverages 2019, 5, 41; doi:10.3390/beverages5030041
2. Ortiz-Rivera J and **Santos RM**. Comparison of the quality of the DNA extracted from buccal swabs using single-step and multi-step procedures. SDRP Journal of Earth Sciences & Environmental Studies 2(4), 2018.
3. **Santos RMM** and Lima DRA. Coffee Consumption, Obesity and Reduced Risk of Type-2 Diabetes. .Journal of Integrated OMICS, 7(2): 1-34, 2017
4. Quintanilha JCF, De Souza VM, Visacri MB, Amaral LS, **Santos RMM**, Zambrano T, Salazar LA and Moriel P. Involvement of Cytochrome P450 in cisplatin treatment: implications for toxicity (Review) Cancer Chemother Pharmacol. DOI 10.107/s00280-017-3358-x, 2017.
5. **Santos RM** and Lima DRA. Coffee Consumption – A Genetic Approach. SM J Food Nutr Disord, 1(2): 1018, 2017.
6. **Santos RM** and Lima DRA. Coffee Consumption, Obesity and Type 2 Diabetes: a Mini-review. (Review Article). Eur J Nutr, 55:1345-1358, 2016.
7. **Santos RM**, Cotta K, Jiang S and Lima DRA. Does CYP1A2 Genotype Influence Coffee Consumption? Austin J Pharmacol Ther, 3(1): 1-5, 2015.
8. **Santos RM**, Hunter T and Lima DR. Coffee, Depression, Alcoholism and Drug Abuse – Mini- review. Austin J Pharmacol Ther, 2(1): 6, Jan 2014.
9. **Santos RM**, Hunter T, Wright N and Lima DR. Caffeine and Chlorogenic Acids in Coffee and Effects on Selected Neurodegenerative Diseases (Review article). J Pharm Sci Innov, 2(4): 9-17, 2013.
10. **Santos Maia, Roseane**. Our 'Black-Box' Cup of Coffee: What is inside? Res Pharmaceutica, 1(1): 60-63, Oct.-Dec. 2010.

11. Weinstock-Guttman B, Hong J, **Santos M**, Tamano-Blanco M, Badgett D, Patrick K, Baier M, Feichter J, Gallagher E, Garg N and Ramanathan M. Interferon-beta Modulates Bone-Associate Cytokines and Osteoclast Precursor Activity in Multiple Sclerosis Patients. Multiple Sclerosis, 12(5): 541-550, Oct. 2006.

12. **Santos R**, Weinstock-Guttman B, Tamaño-Blanco M, Badgett D, Pachner A, Zivadinov R, Justinger T, Munschauer III F and Ramanathan M. Dynamics of Interferon- Modulated mRNA

13. Biomarkers in Multiple Sclerosis Patients with Anti-Interferon- Neutralizing Antibodies, Journal of Neuroimmunology: 176 (1-2): 125-33. Jul. 2006.

14. Weinstock-Guttman B, Badgett D, Patrick K, Hartrich L, **Santos R**, Hall D, Baier M, Fleitcher J,

15. Ramanathan M. Genomics Effects of IFN- in Multiple Sclerosis Patients. Journal of Immunology, 171 (5): 2694-2702, 2003.

16. **Santos RM**. How much does a new drug costs? Jovem medico,5(3): 200-203, 2000

17. **Santos RM**. Clinical pharmacokinetics; basics, clinical importance, needed course in medical curriculum. Jovem Medico, 4(3): 179-182, 1999.

18. Cimini VT, DaSilva KRP, **Santos RM**, Lima,DR. Clinical neuropharmacology of Antiepileptics, Part Revista Brasileira de Neurologia, 33(3): 141-145, 1997.

19. Cimini VT, **Santos RM**, Lima DR. Clinical neuropharmacology of Antiepileptics, Part II. Revista Brasileira de Neurologia, 33(6): 261-267, 1997.

20. **Santos RM,** DaSilva AM, Lima DR. Studies of bioavailability of acetyl salicylic acid formulations. Revista Brasileira de Medicina, 52(3): 227-230, 1995.

21. **Santos R.M.,** Vieira S.A. & Lima D.R. (Letter) Effects of coffee in alcoholics. Annals of Internal Medicine, 115 (6): 499, 1991.

22. Lima D.R., **Santos R.M**., Werneck E. & Andrade G.N. Effect of orally administered misoprostol and cimetidine on the steady-state pharmacokinetics of diazepaand nor-diazepam in human volunteers. European Journal of Drug Metabolism and Pharmacokinetics, 16(3):161-170, 1991.

23. **Santos R.M**., Oliveira D. & Lima D.R. Smoking & Drug Addition & Opioid peptides & coffee intake (Letter) Yonago Acta Medica, 33(1): 79-82, 1990.

24. **Santos R.M**. & Lima D.R. Coffee as a medicinal plant and vitamin source for smokers. Italian Journal of Chest Diseases, 43(1): 56-59, 1989.

ABSTRACTS AND ORAL PRESENTATIONS

1. **2022** 5th Annual Fall Undergraduate Research Symposium, Mountainlair, Morgantown, WVU, December 3rd 2022. The Effects of Coffee Consumption on Alzheimer's Disease, Taylor Brown and Roseane Santos.

2. **2021** 28Th Biannual Conference of The Association for Science and Information on Coffee (ASIC) 28 June-01 July 2021, Montpellier, France. Coffee Consumption and Health Effects Studies in the Post Genomic Era: a brief review.
3. **2018** 27th Biannual Conference of The Association for Science and Information on Coffee (ASIC) 15-20 September 2018, Portland, Oregon, Genotypogram of Coffee and Caffeine Consumption and Related Genetic Traits, ORAL PRESENTATION on 09/17/2018 at Oregon Convention Center, Portland, Oregon (https://www.asicportland.org)
4. **2017** III International Symposium on Profiling, 4-7 September 2017, Lisbon, Portugal, Oral Presentation, Coffee Consumption, Obesity and Risk of type-2 Diabetes, September 4th 2017.
5. **2017** III International Symposium on Profiling, 4-7 September 2017, Lisbon, Portugal, Poster Presentation, Evaluation of a probable regulatory network between CYP1A1-CYP1A2 fragment and AHR on Coffee Consumption, September 5th 2017.
6. **2017** 3rd Annual International Conference on Public Health, 19-22 June 2017, Athens, Greece. Panel on Nutraceuticals, Functional Food and Genomics, Academic Member Responsible.
7. **2016** 26th International Conference on Coffee Sciences, Evaluation of a potential association between CYP 1A2 caffeine metabolism and coffee consumption in healthy volunteers. The Association for Science and Information on Coffee (ASIC) 2016, November 12-19, Kunming- Mangshai, China.
8. **2016** 4th International Conference on Clinical Pharmacy, November 7-9, Atlanta, GA. Evaluation of a probable regulatory network between CYP1A1- CYP1A2 fragment and AHR on Coffee Consumption. 4th International Conference on Clinical Pharmacy November 5-8, Las Vegas, NV.
9. **2016** SANTOS, Roseane MM, Elrod S, Wolff R, Hunter T and Lima DR. Survey among students about relationships between regular coffee intake, weight, mood, alcohol consumption and academic performance. 2016 Annual Conference and Exhibition of the International Society for Nutraceuticals and Functional Food (ISNFF), October 8-12, Orlando, FL
10. **2015** SANTOS, Roseane M. M., LIMA, Darcy R.A. COFFEE CONSUMPTION: A GENETIC APPROACH. Keynote speaker. 3rd International Conference on Clinical Pharmacy, December 7-9, Atlanta, GA.
11. **2015**SANTOS, Roseane M. M., LIMA, Darcy R.A. What is inside your cup of coffee? 3 rd International Conference on Clinical Pharmacy, December 7-9, Atlanta, GA.
12. **2015**SANTOS, Roseane M. M., LIMA, Darcy R.A. Coffee Consumption, Weight, Mood, Alcohol Intake and Academic Performance. 3rd International Conference on Clinical Pharmacy, December 7-9, Atlanta, GA.
13. **2014** SANTOS, Roseane M. M., LIMA, Darcy R.A. Coffee and Obesity. Keynote

speaker. 2nd International Summit on Clinical Pharmacy and Dispensing. December 2-4 San Francisco, California, 2014.

14. **2014** SANTOS, Roseane M. M. COTTA, Karyn I., JIANG, Shi-Wen, LIMA, Darcy R.A. Does Caffeine's Metabolization Phenotype Can Influence Coffee Drinking Habit? 2nd International Summit on Clinical Pharmacy December 2-4 San Francisco, CA.
15. **2014** SANTOS, Roseane M. M., LIMA, Darcy R.A. Coffee effects from pregnancy through early childhood. 2nd International Summit on Clinical Pharmacy December 2-4 at San Francisco, California.
16. **2014** SANTOS, Roseane M. M., LIMA, Darcy R.A. Coffee and Obesity. Allied health professions seminar . August 6, 2014 , South University School of Pharmacy, Savannah GA. 15.
17. **2013** R M Santos. Coffee and Depression: the chemistry of pleasure and reward (Keynote speaker) International Summit on Clinical Pharmacy and Dispensing. November 18-20 at San Antonio, Texas, 2013.
18. **2013** R M Santos. Engaging PharmD Students in Research Projects (poster, oral presentation) International Summit on Clinical Pharmacy and Dispensing. November 18-20 at San Antonio, Texas, 2013.
19. **2012** R M Santos. Café e Saude. Round table. 20th ENCAFE, Associacao Brasileira de Café, Salvador, Bahia, Brazil.
20. **2012** R M Santos and D R Lima. 1st IDOR Coffee and Brain Symposium. Institute D'OR for Research and Education, Rio de Janeiro, Brazil.
21. **2010** R M Santos, M Grenon, P Adair, O Santoso, M Smith and DR. Lima. Bio-Evaluation of Chlorogenic Acids in Natural Products. Poster presentation. 2010 AACP Annual Meeting, Seattle, WA.
22. **2008** R. M. Santos, L. Thaovy, J. K. Porter, J. E. Wynn and D. R. Lima. Evaluation of the impact of regular coffee consumption and alcohol intake on depressive feelings among students. 2008 AACP Annual Meeting, Chicago, IL.
23. **2006** R. Santos, B. Weinstock-Guttman, D. Badgett and M. Ramanathan. Gene Expression in Lymphocytes of Multiple Sclerosis Patients During and After Relapses as Potential Biomarkers.
24. **2006** AACP Annual Meeting, San Diego, CA. 2006 R. Santos, B. Weinstock-Guttman, D. Badgett and M. Ramanathan. Gene Expression in Lymphocytes of Multiple Sclerosis Patients During Relapse, Recovery and Remission Phases as Potential Disease Biomarkers. Poster presentation. 2006 AAPS National Biotechnology Conference, Boston, MA.
25. **2005** Murali Ramanathan, Roseane Santos, Robert Zivadinov, Miriam Tamano-Blanco, Theresa Justinger, Frederick Munschauer and Bianca Weinstock-Guttman. Pharmacodynamics of Interferon-beta Induced mRNA Biomarkers in Multiple Sclerosis Patients with Neutralizing Antibodies. Abstract. 58th Annual Meeting of American Academy of Neurology.

26. **2005** Ramanathan, R. Santos, R. Santos, F. Munschauer, T. Justinger, K. Patrick, and B. Weinstock- Guttman. Pharmacodynamics of Interferon-Modulated mRNAs in Multiple Sclerosis Patients with in Anti-Interferon-B Neutralizing Antibodies. Poster Presentation. American Academy of Neurology, April 12, 2005, P05.126, Miami Beach, FL.
27. **2005** B. Weinstock-Guttman, R. M. Santos, R. Bakshi, M. Tamaño-Blanco,M. Umhauer, D Badgett, J. Feichter, and Murali Ramanathan. Gene Expression Patterns in Lymphocytes during Relapse, Recovery and Remission Phases of Multiple Sclerosis. American Academy of Neurology, April 12, 2005, P03.134, Miami Beach, FL.
28. **2004** Santos RM, Weinstock-Guttman B, Ramanathan M. Dynamic effects of interferon- on multiple sclerosis patients differing in anti-IFN neutralizing antibody status. 25th Annual Meeting of American College of Clinical Pharmacy, Dallas, TX. Winner of Best Student, Resident, Fellow Paper Award.
29. **2004** Santos RM, Weinstock-Guttman B, Ramanathan M. Effects of Neutralizing Antibody Status on Interferon- beta Pharmacodynamics in Multiple Sclerosis Patients. Pharmaceutical Sciences Day University at Buffalo. School of Medicine and Biomedical Sciences.
30. **2004** Santos RM, Weinstock-Guttman B, Ramanathan M. Effects of Neutralizing Antibody Status on Interferon- beta Pharmacodynamics in Multiple Sclerosis Patients. SIgma Xi Annual Research Day, University at Buffalo.
31. **2003** Santos RM, Badgett D, Weinstock-Guttman B, Ramanathan M. Genomic effects of interferon- -1a treatment in multiple sclerosis patients: real-time quantitative PCR measurements. Buffalo Drug Research Symposium, University at Buffalo.

PATENTS

UNITED STATES PATENT & TRADEMARK OFFICE Provisional Patent Application, Santos, Roseane M. Title: Genotypogram, Field of invention: Molecular Biology
Abstract: a new format to display genotype correlation between associated traits, **September 2018**.

GRANTS

2016 School of Pharmacy Excellence in Pharmaceutical Research Award (SERPRA)
Evaluation of Potential Regulatory Network between CYP1A1-CYP1A2 Genomic Fragment and AHR on Coffee Consumption. Santos, Roseane (Principal Investigator), Darcy Lima and Collaborator: Karyn Cotta, PhD
Period: March 2016-February 2017 (US$ 5,000)

Identification of Coffee Consumption Biomarkers and Pharmacokinetic Studies of Chlorogenic Acid Contents from Roasted Coffee Beverages after Daily Intake in Healthy Volunteers. Santos, Roseane Ph.D.; Lima, Darcy MD, PhD & Moll, Jorge MD, PhD.
Principal Investigator: Roseane Maria M. Santos, Ph.D.
Agencies: Institute D'OR of Research and Education (IDOR), Rio de Janeiro, Brazil Núcleo Estratégico do SENAI (NES), Sistema FIEB I, Brazil (www.fieb.org.br)
Café Baggio, Araras, Sao Paulo, Brazil (www.baggiocoffees.com.br)
Estudo Multicentrico do Consumo de Café associado ao uso de bebidas alcoolicas e sintomas de depressao Principal Investigator: Roseane Maria M. Santos, Ph.D; Tracy Hunter, Ph.D, Rx; Robert Wolf, Ph.D.
Agency: South University School of Pharmacy in collaboration with IDOR (Brazil)
Determination of healthy compounds present in brewed coffee as baseline assessment for correlation between disease prevention and coffee consumption.
Principal Investigator: Roseane Maria M. Santos, Ph.D.
Agency: South University School of Pharmacy Period: July 2007 to present ($10,000)
Coffee Consumption, CYP1A2 Genotype, and Caffeine Metabolism
Principal Investigator: Roseane Maria M. Santos, Ph.D. Co- investigator: Karyn Cotta, Ph.D.
Agency: South University School of Pharmacy Period: July 2012 to present ($10,000)
Evaluation of regular coffee consumption compared with alcohol intake and depressive feelings among students –Survey
Principal Investigator: Roseane Maria M. Santos, Ph.D. Agency: South University School of Pharmacy
Period: May, 2008 to 2010 ($5,000)

CURRICULUM VITAE

Name:	**Bernard G. Schreurs**
PLACE OF BIRTH:	Venlo, The Netherlands
CITIZENSHIP:	US
EDUCATION:	B.Sc. (Hons) 1978, University of New South Wales, Sydney, Australia
	M.A. 1981, University of Iowa
	Ph.D. 1985, University of Iowa

PROFESSIONAL EXPERIENCE:

2008-present	Director, West Virginia Alzheimer's Disease Registry
2007-present	Professor, Behavioral Medicine and Psychiatry West Virginia University School of Medicine
2005-present	Professor, Rockefeller Neuroscience Institute, Professor, Department of Neuroscience, West Virginia University School of Medicine
2000-2005	Associate Professor, Blanchette Rockefeller Neurosciences Institute, Associate Professor, Department of Physiology and Pharmacology, West Virginia University School of Medicine
1994-2000	Chief, Behavioral Neuroscience Unit Laboratory of Adaptive Systems (LAS) NINDS, NIH
1987-1994	Staff/Senior Staff Fellow Section on Neural Systems NINDS, NIH

TEACHING EXPERIENCE:

1981-1982	Lectured in General Psychology, assisted in Elementary Psychology, and Probability and Statistics University of Iowa
1985-1986	Lectured and tutored in Learning and Behavior University of New South Wales
1986-1987	Co-instructor in Behavioral Pharmacology University of Iowa
1988-2000	Instructor in conditioning theory, intracellular electrophysiology and behavioral techniques National Institutes of Health
2001-present	Problem-based learning facilitator West Virginia University School of Medicine
2002-present	Lecturer: Medical Pharmacology (MS2) and Graduate Physiology and Pharmacology West Virginia University School of Medicine

2003-present	Lecturer: Fundamental Neuroscience I (NBAN770); Fundamental Neuroscience II (NBAN772); Foundations of Biomedical Sciences (BMS777); West Virginia University School of Medicine
2003-present	Course Designer and Instructor: BMS720 - Scientific Writing Course for journals and grants West Virginia University

AWARDS AND HONORS:

1978	Honors in Psychology
1981	Sigma Chi Honor Society
1993	NIH Merit Award
1996	NATO Travel Grant to Spain
2005	Dean's Award for Excellence
2019	Benedum Distinguished Scholar

PROFESSIONAL SOCIETY MEMBERSHIPS:	Society for Neuroscience Pavlovian Society
REFEREE ACTIVITIES:	Member BRLE Study Section, NIH CSR Member NLM Study Section, NIH CSR Ad Hoc grant reviewer for NIMH, NIAAA, EPA, and NSF. Consulting Editor: Behavioral Neuroscience

GRANT SUPPORT

NIMH R01: *Conditioning-specific reflex modification*
Period of support: 8/02 – 7/06, Principal Investigator

NIA R01: *Cholesterol and copper affect learning and memory*
Period of support: 8/04 – 5/16, Principal Investigator

NIMH R01: *An animal model for developing treatments of PTSD core features*
Period of support: 2/09 – 12/12, Principal Investigator

NINDS R21: *Plasticity in deep cerebellar nuclei*
Period of support: 5/09 – 4/12, Principal Investigator

NIMH R01: *Developing treatments for hyperarousal in a model system.*
Period of support: 4/13 – 2/19, Principal Investigator

NINDS R21: *Learning-specific synaptic and membrane changes in deep cerebellar nuclei*
Period of support: 7/15 – 6/18, Principal Investigator

NIA R56: *Modeling sex differences in Alzheimer's Disease cognition and pathology*
Period of support: 4/18 – 1/21, Co-Principal Investigator

NICHD R01: *Susceptibility and Resilience to Adverse Childhood Experiences: A Role for Perineuronal Nets*
Period of support: 9/20 – 7/25, Principal Investigator

NIA R25: *Appalachian Gerontology Experiences-Advancing Diversity in Aging Research (AGE-ADAR)*
Period of Support: 5/20 – 2/25, Co-Investigator

NIA R24: *Dietary manipulations in rabbits induce the cellular, neuropathological, and cognitive hallmarks of late-onset Alzheimer's Disease*
Period of Support: 8/21 – 8/25, Principal Investigator

NIA R01: *Impact of sex differences on molecular determinants of AD risk and responsiveness to treatment*
Period of Support: 9/21 – 8/26, Principal Investigator

PUBLICATIONS

1. Kehoe, E.J., **Schreurs, B.G.**, & Amodei, N. (1981). Blocking acquisition of the rabbit's nictitating membrane response to serial conditioned stimuli. Learning & Motivation, 12, 92-108.

2. **Schreurs, B.G.**, & Gormezano, I. (1982). Nictitating membrane reflex of the frog: Effects of paraorbital shock and temperature. Behavioral & Neural Biology, 35, 70-75.

3. **Schreurs, B.G.**, & Westbrook, R.F. (1982). The effects of changes in the CS-US interval during compound conditioning upon an otherwise blocked element. Quarterly Journal of Experimental Psychology, 34B, 19-30.

4. **Schreurs, B.G.**, & Gormezano, I. (1982). Classical conditioning of the rabbit's nictitating membrane response to CS compounds: Effects of prior single stimulus conditioning. Bulletin of the Psychonomic Society, 19, 365-368.

5. Marshall-Goodell, B., **Schreurs, B.G.**, & Gormezano, I. (1982). Ruler vs. the Apple II/FIRST system analysis of analog signals in classical conditioning. Behavioral Research Methods & Instrumentation, 14, 519-525.

6. **Schreurs, B.G.**, Gormezano, I., & Harvey, J.A. (1983). Apple II/FIRST system control of electrical brain stimulation in the rabbit. Behavioral Research Methods & Instrumentation, 15, 167-170.

7. Kehoe, E.J., & **Schreurs, B.G.** (1986a). Compound-component differentiation as a function of CS-US interval and CS duration in the rabbit's nictitating membrane response. Animal Learning & Behavior, 14, 144-154.

8. Kehoe, E.J., & **Schreurs, B.G.** (1986b). Compound conditioning of the rabbit nictitating membrane response: Test trial manipulations. Bulletin of the Psychonomic Society, 24, 79-81.

9. **Schreurs, B.G.**, Jha, B., & Gormezano, I. (1986). Classical conditioning of the rabbit's nictitating membrane response to a piezoceramic vibrotactile CS. Behavioral Research Methods, Instrumentation & Computers, 18, 359-362.

10. **Schreurs, B.G.**, & Kehoe, E.J. (1987). Cross-modal transfer as a function of initial training level in classical conditioning of the rabbit. Animal Learning & Behavior, 15, 47-54.

11. **Schreurs, B.G.** (1987). Parameters and sites of brainstem stimulation capable of eliciting the rabbit nictitating membrane response. Behavioural Brain Research, 25, 155-160.

12. Kehoe, E.J., **Schreurs, B.G.**, & Graham, P. (1987). Temporal primacy overrides prior training in serial compound conditioning of the rabbit's nictitating membrane response. Animal Learning & Behavior, 15, 455-464.

13. **Schreurs, B.G.** (1988). Spinal trigeminal nucleus stimulation supports classical conditioning of the rabbit's nictitating membrane response. Behavioral Neuroscience, 102, 163-172.

14. **Schreurs, B.G.** (1989). Classical conditioning of model systems: A behavioral review. Psychobiology, 17, 145-155.

15. Kehoe, E.J., Graham-Clarke, P., & **Schreurs, B.G.** (1989). Temporal patterning of the rabbit's nictitating membrane response to compound and component stimuli under mixed CS-US intervals. Behavioral Neuroscience, 103, 283-295.

16. Alkon, D.L., Ikeno, H., Dworkin, J., McPhie, D.L., Olds, J.L., Lederhendler, I., Matzel, L., **Schreurs, B.G.**, Kuzirian, A., & Collin, C. (1990). Focussing of neuronal branches: An anatomic correlate of Pavlovian memory. Proceedings of the National Academy of Sciences, USA, 87, 1611-1614.

17. Matzel, L. D., **Schreurs, B. G.**, Lederhendler, I. I., & Alkon, D. L. (1990). Acquisition of a CS-US association in Hermissenda: Synergystic effects of contiguity and the forward ISI. Behavioral Neuroscience, 104, 597-606.

18. Matzel, L.D., **Schreurs, B.G.**, & Alkon, D.L. (1990). Pavlovian conditioning of distinct components of Hermissenda's responses to rotation. Behavioral & Neural Biology, 54, 131-145.

19. **Schreurs, B.G.**, & Alkon, D.L. (1990). US-US conditioning of the rabbit's nictitating membrane response: Emergence of a conditioned response without alpha conditioning. Psychobiology, 18, 312-320.

20. **Schreurs, B.G.**, Sanchez-Andres, J.V., & Alkon, D.L. (1991). Learning-specific differences in Purkinje-cell dendrites of lobule HVI (lobulus simplex): intracellular recording in a rabbit cerebellar slice. Brain Research, 548, 18-22.

21. Scharenberg, A.M., Olds, J.L., **Schreurs, B.G.**, Craig, A.M., & Alkon, D.L. (1991). Protein kinase C redistribution within CA3 stratum oriens during acquisition of NM conditioning in the rabbit. Proceedings of the National Academy of Sciences, USA, 88, 6637-6641.

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My Bibliography:
http://www.ncbi.nlm.nih.gov/sites/myncbi/bernard.schreurs.1/bibliography/40455177/public/?sort=date&direction=descending

Curriculum Vitae of Vincent Setola

Vincent Setola, PhD

Date: 09/30/2020

Home Address: 1017 Valley View Ave A4II, Morgantown, WV 26505

Office Address: 108 Biomedical Road, Room 119, Morgantown, WV 26506

Phone: (304) 293-1512

FAX: (304) 293-3850

E-mail: vssetola@hsc.wvu.edu

Current Position: Assistant Professor

Education

MS (Cell Mol. Biol. Physiol.)	Sorbonne Université Paris VI	1997-1999
PhD (Biochemistry)	Case Western Reserve University	2000-2005

Postgraduate/Postdoctoral Training

Postdoctoral Fellow	Sorbonne Université Paris VI	2005-2007

Current Academic Positions and Appointments

Assistant Professor, Dept. of Neuroscience (primary), Dept. of Behavioral Medicine and Psychiatry (secondary)	July 2015-Present

Previous Academic Appointments

Research Assistant Professor, Dept. of Physiology and Pharmacology, West Virginia University School of Medicine	2013-2015
Research Assistant Professor, Dept. of Pharmacology University of North Carolina, Chapel Hill School of Medicine	2008-2012

Other Appointments

Associate Scientific Director, National Institute of Mental Health Psychoactive Drug Screening Program	2008-2012

Awards and Honors

American Heart Association Graduate Fellowship	2003-2005
European Union Marie Curie Incoming International Research Fellowship	2005-2007

Professional Societies

American Society for Pharmacological and Experimental Therapeutics	2012-Present
Association for Chemoreception Science	2017-2018

Institutional Committees

Member, thesis committee	Bryan Gall	2013-2017
Member, thesis committee	Joshua Gross	2014-2019
Member, thesis committee	Adam Schroer	2014-2018
Member, thesis committee	Shane Kaski	2016-2019
Member, thesis committee	Allison White	2019-Present
Member, thesis committee	Jacob Bumgarner	2019-Present

Editorial Boards

Neuroscience Section	*Nature Scientific Reports*	2011-Present

Ad hoc Reviewer

Pharmacology & Therapeutics, *Journal of Biological Chemistry*

Reviews and Study Sections

Reviewer ZHD1 DSR-Z(50)	NIH/NICHD	July 2019

Grants and Contracts (PI unless otherwise stated)

Current Grants and Contracts

U18DA052497-01 $222,568 (Direct + Indirect)	NIH/NIDA	2020-2021
1R01DA048153-01A (Co-I) $569,990	NIH/NIDA	2021-2025

Previously Funded Grants and Contracts

Pilot Award/WVCTSI ("COAT clinic genetic study")/$50,000	2016-2017
Pilot Award/WVCTSI ("NAS study")(Co-I)/$50,000	2016-2017
Pilot Award/WVCTSI ("Bari-Aware study")(Co-I)/$50,000	2016-2017

Undergraduate Medical Education

PCOL549, Sedatives and Hypnotics, senior undergraduates/ MS students	2013-Present

Graduate Medical Education

PCOL801, Journal club facilitator, 2nd year medical students	2015-Present
PCOL801, Lecturer (Antipsychotics), 2nd year medical students	2015-Present

Graduate Student Education

NBAN770, Fundamentals of Neuroscience 1	2018-Present
NBAN772, Fundamentals of Neuroscience 2	2018-Present
PSYC650, Neuroscience Methods	2014
PSYC693, Principles of Neuroscience	2015-Present
PSYC724, Advanced Neuroscience	2018-Present

Health Professions Education

PCOL760, Opioid analgesics, 2nd year dental students	2013-Present
Didactic to PGY2 psychiatry residents, Anxiolytics	2013-Present
Didactic to PGY2 psychiatry residents, Antipsychotic	2013-Present

Invited Lectures and Presentations: International

Neuropsychopharmacology: Receptor-Ligand Interactions. Sorbonne Université Paris VI, Jan. 2018
Neuropsychopharmacology: Receptor-Ligand Interactions. Sorbonne Université Paris VI, Jan. 2017
Neuropsychopharmacology: GPCR Pharmacology. Université de Toulouse (France) Sept. 2016
RGS12 and its possible role in schizophrenia. Université de Toulouse (France) Sept. 2016
Neuropsychopharmacology: Receptor-Ligand Interactions. Sorbonne Université Paris VI Jan. 2016
Neuropsychopharmacology: Psychiatric Genetics. Sorbonne Université Paris VI Jan. 2016

Invited Lectures and Presentations: Domestic and Institutional

RGS12 as a modulator of dopamine and serotonin transport. Indiana University School of Medicine. Scheduled in 2020—postponed due to COVID-19
A Pharmacological Strategy for Rescuing Opioids and Preventing Opioid Use Disorder. Columbia University School of Medicine/New York State Psychiatric Institute. Dec. 2019
G protein signaling: What every psychiatrist should know. Chestnut Ridge Center Grand Rounds (Psychiatry) Aug. 2015

Publications

Recent Abstracts Presented

1: White AN, Gross JD, Kaski SW, Trexler KR, Rodriguiz RM, Schroer AB, Wix KA, Wetsel WC, Kinsey SG, Siderovski DP, **Setola V**. Regulator of G protein Signaling 12 modulates the expression and function of the serotonin transporter (SERT). Poster Presentation. Society for Neuroscience. Chicago, IL. October 2019.

2: Kaski SW, Gross JD, Trexler KR, Wix K, Harland AA, Prisinzano TE, Aubé J, Kinsey SG, Kenakin TP, Siderovski DP, **Setola V**. Preclinical testing of nalfurafine as a potential adjuvant to reduce the addictive potential of the mu opioid receptor-targeting analgesic morphine. Poster Presentation. The Opioid Crisis and the Future of Addiction and Pain Therapeutics: Opportunities, Tools, and Technologies. NIH/NCATS, Bethesda, MD. February 2019.

3: Gross JD, Kaski SW, Schroer AB, Siderovski DP, **Setola V**. RGS12 modulates dopamine transporter (DAT) function in ventral striatum via a kappa-opioid receptor (KOR)-dependent mechanism. Poster Presentation. Society for Neuroscience. San Diego, CA. November 2018.

4: Kaski S, Gross J, Schroer A, Wix K, Siderovski DP, **Setola V**. Evidence for the role of biased signaling at the kappa opioid receptor in reducing conditioned place preference to morphine. Poster Presentation. Society for Neuroscience. San Diego, CA. November 2018.

5: Gross J, Kaski SW, **Setola V**, Siderovski DP. Regulator of G Protein Signaling-12 (RGS12) modulates the dopamine transporter in ventral striatum via differential regulation of kappa opioid receptor signaling. Oral Presentation. FAU Brain Institute. Jupiter, FL. September 2018.

6: Gross JD, Kaski SW, Schroer AB, Siderovski DP, **Setola V**. RGS12 modulates dopamine transporter function in ventral striatum via a kappa-opioid receptor-dependent mechanism. Poster Presentation. Gordon Research Conference: Membrane Transport Proteins. Newry, ME. June 2018.

7: Schroer, AB, Gross, JD, Kaski, SW, Wix, K, Siderovski, DP, Vandenbeuch, A, **Setola, V**. Development of full sweet, umami, and bitter taste responsiveness requires Regulator of G protein Signaling-21 (RGS21). Poster Presentation. Association for Chemosensory Sciences. Bonita Springs, FL. April 2018.

8: Gross JD, Kaski SW, Schroer AB, Wix K, Siderovski DP, **Setola V**. RGS12 modulates the dopamine transporter in ventral striatum and locomotor responses to psychostimulant drugs of abuse. Poster Presentation. Society for Neuroscience. Washington DC. November 2017.

9: Schroer AB, Siderovski DP, Vandenbeuch A, **Setola V**. Regulator of G Protein Signaling-21 (RGS21): a novel modulator of the mammalian taste system. Fellows Oral Presentation. WVU Neuroscience Retreat. Tucker County, WV. July 2017.

10: Schroer AB, Siderovski DP, Vandenbeuch A, **Setola V**. Regulator of G Protein Signaling-21 (RGS21): a novel mediator of tastant response. Oral Presentation. Julie Betschart Symposium. Morgantown, WV. April 2017.

11: Schroer AB, Gross JD, Kaski SW, **Setola V**, Siderovski, DP. 'Regulator of G Protein Signaling-21' (RGS21) in taste sensation. Poster Presentation. WVU Van Liere Research Day. Morgantown, WV. March 2017.

12: Gross J, Kaski S, Schroer A, Wix K, Siderovski DP, **Setola V**. Regulator of G Protein Signaling-12 (RGS12) modulates ventral striatal dopamine function and behavioral responses to psychostimulant drugs-of-abuse. Oral presentation. WVU Van Liere Research Day. Morgantown, WV. March 2017.

13: Schroer AB. Mohamed JS, **Setola V**, Oestreich, E, Siderovski, DP. 'Regulator of G Protein Signaling-12' (RGS12) in skeletal muscle regeneration. Poster Presentation. Society for Muscle Biology. Pacific Grove, CA. June 2016.

14: Gross J, Schroer A, Wix K, Siderovski DP, **Setola V**. Regulator of G Protein Signaling-12 (RGS12) in the action of amphetamine and related drugs of abuse. Poster Presentation. Society for Neuroscience. San Diego, CA. November 2016.

15: Gross J, Schroer A, Wix K, Kaski S, Siderovski DP, **Setola V**. Regulator of G Protein Signaling-12 (RGS12) modulates the action of amphetamine and amphetamine-related psychostimulants. Poster Presentation. WVU Neuroscience Retreat. Wheeling, WV. July 2016.

16: Gross J, Schroer A, Gall B, **Setola V**, Siderovski D. The Role of Regulator of G Protein Signaling-12 (RGS12) in Schizophrenia-related Behaviors and Pathophysiology. Poster Presentation. WVU Van Liere Research Day. Morgantown, WV. March 2016.

17: Schroer AB, Mohamed JS, **Setola V**, Oestreich, E, Siderovski, DP. 'Regulator of G Protein Signaling-12' (RGS12) in muscle stem cell-mediated skeletal muscle regeneration. Oral Presentation. WVU Van Liere Research Day. Morgantown, WV. March 2016.

18: Gross J, **Setola V**, Wix K, Siderovski D. Mouse Brain Expression and Function of Regulator of G ProteinSignaling-12 (RGS12) in Sensorimotor Gating and Locomotive Behaviors. Poster Presentation. Society for Neuroscience. Chicago, IL. October 2015.

19: Schroer AB, Mohamed JS, **Setola V**, Oestreich E, Siderovski DP. 'Regulator of G Protein Signaling-12' (RGS12) in skeletal muscle repair. Poster Presentation. Great Lakes GPCR Retreat. Hockley Valley, Ontario, Canada. October 2015.

Original Published Peer-Reviewed Articles

1: White AN, Gross JD, Kaski SW, Trexler KR, Wix KA, Wetsel WC, Kinsey SG, Siderovski DP, **Setola V**. Genetic deletion of Rgs12 in mice affects serotonin transporter expression and function in vivo and ex vivo. J Psychopharmacol. 2020 Aug 25:269881120944160. doi: 10.1177/0269881120944160. Epub ahead of print. PMID: 32842837.

2: Kaski SW, White AN, Gross JD, Trexler KR, Wix K, Harland AA, Prisinzano TE, Aubé J, Kinsey SG, Kenakin T, Siderovski DP, **Setola V**. Preclinical Testing of Nalfurafine as an Opioid-sparing Adjuvant that Potentiates Analgesia by the Mu Opioid Receptor-targeting Agonist Morphine. J Pharmacol Exp Ther. 2019 Nov;371(2):487-499. doi: 10.1124/jpet.118.255661. Epub 2019 Sep 6. PMID: 31492823; PMCID: PMC6863463.

3: Schroer AB, Mohamed JS, Willard MD, **Setola V**, Oestreich E, Siderovski DP. A role for Regulator of G protein Signaling-12 (RGS12) in the balance between myoblast proliferation and differentiation. PLoS One. 2019 Aug 13;14(8):e0216167. doi: 10.1371/journal.pone.0216167. PMID: 31408461; PMCID: PMC6691989.

4: Gross JD, Kaski SW, Schmidt KT, Cogan ES, Boyt KM, Wix K, Schroer AB, McElligott ZA, Siderovski DP, **Setola V**. Role of RGS12 in the differential regulation of kappa opioid receptor-dependent signaling and behavior. Neuropsychopharmacology. 2019 Sep;44(10):1728-1741. doi: 10.1038/s41386-019-0423-7. Epub 2019 May 29. PMID: 31141817; PMCID: PMC6785087.

5: Purnell PR, Addicks BL, Zalzal HG, Shapiro S, Wen S, Ramadan HH, **Setola V**, Siderovski DP. Single Nucleotide Polymorphisms in Chemosensory Pathway Genes GNB3, TAS2R19, and TAS2R38 Are Associated with Chronic Rhinosinusitis. Int Arch Allergy Immunol. 2019;180(1):72-78. doi: 10.1159/000499875. Epub 2019 May 28. PMID: 31137020; PMCID: PMC6715503.

6: Kaski SW, Brooks S, Wen S, Haut MW, Siderovski DP, Berry JH, Lander LR, **Setola V**. Four single nucleotide polymorphisms in genes involved in neuronal signaling are associated with Opioid Use Disorder in West Virginia. J Opioid Manag. 2019 Mar-Apr;15(2):103-109. doi: 10.5055/jom.2019.0491. PMID: 31057342; PMCID: PMC6497075.

7: Schroer AB, Gross JD, Kaski SW, Wix K, Siderovski DP, Vandenbeuch A, **Setola V**. Development of Full Sweet, Umami, and Bitter Taste Responsiveness Requires Regulator of G protein Signaling-21 (RGS21). Chem Senses. 2018 May 23;43(5):367-378. doi: 10.1093/chemse/bjy024. PMID: 29701767; PMCID: PMC6276893.

8: Roth BL, Gibbons S, Arunotayanun W, Huang XP, **Setola V**, Treble R, Iversen L. Correction: The Ketamine Analogue Methoxetamine and 3- and 4-Methoxy Analogues of Phencyclidine Are High Affinity and Selective Ligands for the Glutamate NMDA Receptor. PLoS One. 2018 Mar 22;13(3):e0194984. doi: 10.1371/journal.pone.0194984. Erratum for: PLoS One. 2013;8(3):e59334. PMID: 29566092; PMCID: PMC5864080.

9: Gross JD, Kaski SW, Schroer AB, Wix KA, Siderovski DP, **Setola V**. Regulator of G protein signaling-12 modulates the dopamine transporter in ventral striatum and locomotor responses to psychostimulants. J Psychopharmacol. 2018 Feb;32(2):191-203. doi: 10.1177/0269881117742100. Epub 2018 Jan 24. PMID: 29364035; PMCID: PMC5942192.

10: Gall BJ, Schroer AB, Gross JD, **Setola V**, Siderovski DP. Reduction of GPSM3 expression akin to the arthritis-protective SNP rs204989 differentially affects migration in a neutrophil model. Genes Immun. 2016 Sep;17(6):321-7. doi: 10.1038/gene.2016.26. Epub 2016 Jun 16. PMID: 27307211; PMCID: PMC5009006.

11: Nicolson SC, Li C, Hirsch ML, **Setola V**, Samulski RJ. Identification and Validation of Small Molecules That Enhance Recombinant Adeno-associated Virus Transduction following High-Throughput Screens. J Virol. 2016 Jul 27;90(16):7019-7031. doi: 10.1128/JVI.02953-15. PMID: 27147738; PMCID: PMC4984620.

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13: Guipponi M, Santoni FA, **Setola V**, Gehrig C, Rotharmel M, Cuenca M, Guillin O, Dikeos D, Georgantopoulos G, Papadimitriou G, Curtis L, Méary A, Schürhoff F, Jamain S, Avramopoulos D, Leboyer M, Rujescu D, Pulver A, Campion D, Siderovski DP, Antonarakis SE. Correction: Exome Sequencing in 53 Sporadic Cases of Schizophrenia Identifies 18 Putative Candidate Genes. PLoS One. 2015 Oct 21;10(10):e0141630. doi: 10.1371/journal.pone.0141630. Erratum for: PLoS One. 2014;9(11):e112745. PMID: 26488584; PMCID: PMC4619442.

14: Guipponi M, Santoni FA, **Setola V**, Gehrig C, Rotharmel M, Cuenca M, Guillin O, Dikeos D, Georgantopoulos G, Papadimitriou G, Curtis L, Méary A, Schürhoff F, Jamain S, Avramopoulos D, Leboyer M, Rujescu D, Pulver A, Campion D, Siderovski DP, Antonarakis SE. Exome sequencing in 53 sporadic cases of schizophrenia identifies 18 putative candidate genes. PLoS One. 2014 Nov 24;9(11):e112745. doi: 10.1371/journal.pone.0112745. Erratum in: PLoS One. 2015;10(10):e0141630. PMID: 25420024; PMCID: PMC4242613.

15: Polepally PR, Huben K, Vardy E, **Setola V**, Mosier PD, Roth BL, Zjawiony JK. Michael acceptor approach to the design of new salvinorin A-based high affinity ligands for the kappa-opioid receptor. Eur J Med Chem. 2014 Oct 6;85:818-29. doi: 10.1016/j.ejmech.2014.07.077. Epub 2014 Aug 23. PMID: 25193297; PMCID: PMC4162805.

16: Sampson D, Bricker B, Zhu XY, Peprah K, Lamango NS, **Setola V**, Roth BL, Ablordeppey SY. Further evaluation of the tropane analogs of haloperidol. Bioorg Med Chem Lett. 2014 Sep 1;24(17):4294-7. doi: 10.1016/j.bmcl.2014.07.018. Epub 2014 Jul 14. PMID: 25070422; PMCID: PMC4146722.

17: Sampson D, Zhu XY, Eyunni SV, Etukala JR, Ofori E, Bricker B, Lamango NS, **Setola V**, Roth BL, Ablordeppey SY. Identification of a new selective dopamine D4 receptor ligand. Bioorg Med Chem. 2014 Jun 15;22(12):3105-14. doi: 10.1016/j.bmc.2014.04.026. Epub 2014 Apr 20. PMID: 24800940; PMCID: PMC4096627.

18: Belmer A, Doly S, **Setola V**, Banas SM, Moutkine I, Boutourlinsky K, Kenakin T, Maroteaux L. Role of the N-terminal region in G protein-coupled receptor functions: negative modulation revealed by 5-HT2B receptor polymorphisms. Mol Pharmacol. 2014 Jan;85(1):127-38. doi: 10.1124/mol.113.089086. Epub 2013 Oct 30. PMID: 24174497.

19: Kimple AJ, Garland AL, Cohen SP, **Setola V**, Willard FS, Zielinski T, Lowery RG, Tarran R, Siderovski DP. RGS21, a regulator of taste and mucociliary clearance? Laryngoscope. 2014 Mar;124(3):E56-63. doi: 10.1002/lary.24326. Epub 2013 Oct 2. PMID: 23908053;

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21: Arunotayanun W, Dalley JW, Huang XP, **Setola V**, Treble R, Iversen L, Roth BL, Gibbons S. An analysis of the synthetic tryptamines AMT and 5-MeO-DALT: emerging 'Novel Psychoactive Drugs'. Bioorg Med Chem Lett. 2013 Jun 1;23(11):3411-5. doi: 10.1016/j.bmcl.2013.03.066. Epub 2013 Mar 28. PMID: 23602445.

22: Roth BL, Gibbons S, Arunotayanun W, Huang XP, **Setola V**, Treble R, Iversen L. The ketamine analogue methoxetamine and 3- and 4-methoxy analogues of phencyclidine are high affinity and selective ligands for the glutamate NMDA receptor. PLoS One. 2013;8(3):e59334. doi: 10.1371/journal.pone.0059334. Epub 2013 Mar 19. Erratum in: PLoS One. 2018 Mar 22;13(3):e0194984. PMID: 23527166; PMCID: PMC3602154.

23: Kokel D, Cheung CY, Mills R, Coutinho-Budd J, Huang L, **Setola V**, Sprague J, Jin S, Jin YN, Huang XP, Bruni G, Woolf CJ, Roth BL, Hamblin MR, Zylka MJ, Milan DJ, Peterson RT. Photochemical activation of TRPA1 channels in neurons and animals. Nat Chem Biol. 2013 Apr;9(4):257-63. doi: 10.1038/nchembio.1183. Epub 2013 Feb 10. PMID: 23396078; PMCID: PMC3604056.

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25: Besnard J, Ruda GF, **Setola V**, Abecassis K, Rodriguiz RM, Huang XP, Norval S, Sassano MF, Shin AI, Webster LA, Simeons FR, Stojanovski L, Prat A, Seidah NG, Constam DB, Bickerton GR, Read KD, Wetsel WC, Gilbert IH, Roth BL, Hopkins AL. Automated design of ligands to polypharmacological profiles. Nature. 2012 Dec 13;492(7428):215-20. doi: 10.1038/nature11691. PMID: 23235874; PMCID: PMC3653568.

26: Hutcheson JD, Ryzhova LM, **Setola V**, Merryman WD. 5-HT(2B) antagonism arrests non-canonical TGF-β1-induced valvular myofibroblast differentiation. J Mol Cell Cardiol. 2012 Nov;53(5):707-14. doi: 10.1016/j.yjmcc.2012.08.012. Epub 2012 Aug 23. PMID: 22940605; PMCID: PMC3472096.

27: Chen X, Sassano MF, Zheng L, **Setola V**, Chen M, Bai X, Frye SV, Wetsel WC, Roth BL, Jin J. Structure-functional selectivity relationship studies of β-arrestin-biased dopamine D□ receptor agonists. J Med Chem. 2012 Aug 23;55(16):7141-53. doi: 10.1021/jm300603y. Epub 2012 Aug 13. PMID: 22845053; PMCID: PMC3443605.

28: Mangin F, Dilly S, Joly B, Scuvée-Moreau J, Evans J, **Setola V**, Roth BL, Liégeois JF. Moderate chemical modifications of WAY-100635 improve the selectivity for 5-HT1A versus D4 receptors. Bioorg Med Chem Lett. 2012 Jul 15;22(14):4550-4. doi: 10.1016/j.bmcl.2012.05.119. Epub 2012 Jun 7. PMID: 22738628.

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Shoichet BK. Identifying mechanism-of-action targets for drugs and probes. Proc Natl Acad Sci U S A. 2012 Jul 10;109(28):11178-83. doi: 10.1073/pnas.1204524109. Epub 2012 Jun 18. PMID: 22711801; PMCID: PMC3396511. *Equal contribution

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35: Peprah K, Zhu XY, Eyunni SV, Etukala JR, **Setola V**, Roth BL, Ablordeppey SY. Structure-activity relationship studies of SYA 013, a homopiperazine analog of haloperidol. Bioorg Med Chem. 2012 Mar 1;20(5):1671-8. doi: 10.1016/j.bmc.2012.01.022. Epub 2012 Jan 21. PMID: 22336245; PMCID: PMC3356581.

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G, Caron MG. Deficient serotonin neurotransmission and depression-like serotonin biomarker alterations in tryptophan hydroxylase 2 (Tph2) loss-of- function mice. Mol Psychiatry. 2012 Jul;17(7):694-704. doi: 10.1038/mp.2011.50. Epub 2011 May 3. PMID: 21537332; PMCID: PMC3536482.

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45: Yadav PN, Abbas AI, Farrell MS, **Setola V**, Sciaky N, Huang XP, Kroeze WK, Crawford LK, Piel DA, Keiser MJ, Irwin JJ, Shoichet BK, Deneris ES, Gingrich J, Beck SG, Roth BL. The presynaptic component of the serotonergic system is required for clozapine's efficacy. Neuropsychopharmacology. 2011 Feb;36(3):638-51. doi: 10.1038/npp.2010.195. Epub 2010 Nov 3. PMID: 21048700; PMCID: PMC3055689.

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selectivity by regulator of G-protein signaling 2 (RGS2). J Biol Chem. 2009 Jul 17;284(29):19402-11. doi: 10.1074/jbc.M109.024711. Epub 2009 May 28. PMID: 19478087; PMCID: PMC2740565.

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54: Sikazwe DM, Nkansah NT, Altundas R, Zhu XY, Roth BL, **Setola V**, Ablordeppey SY. Synthesis and evaluation of ligands for D2-like receptors: the role of common pharmacophoric groups. Bioorg Med Chem. 2009 Feb 15;17(4):1716-23. doi: 10.1016/j.bmc.2008.12.054. Epub 2008 Dec 31. PMID: 19155177; PMCID: PMC2719767.

55: Jaffré F, Bonnin P, Callebert J, Debbabi H, **Setola V**, Doly S, Monassier L, Mettauer B, Blaxall BC, Launay JM, Maroteaux L. Serotonin and angiotensin receptors in cardiac fibroblasts coregulate adrenergic-dependent cardiac hypertrophy. Circ Res. 2009 Jan 2;104(1):113-23. doi: 10.1161/CIRCRESAHA.108.180976. Epub 2008 Nov 20. PMID: 19023134.

56: Doly S, Valjent E, **Setola V**, Callebert J, Hervé D, Launay JM, Maroteaux L. Serotonin 5-HT2B receptors are required for 3,4-methylenedioxymethamphetamine- induced hyperlocomotion and 5-HT release in vivo and in vitro. J Neurosci. 2008 Mar 12;28(11):2933-40. doi: 10.1523/JNEUROSCI.5723-07.2008. PMID: 18337424; PMCID: PMC6670669.

57: Janoshazi A, Deraet M, Callebert J, **Setola V**, Guenther S, Saubamea B, Manivet P, Launay JM, Maroteaux L. Modified receptor internalization upon coexpression of 5-HT1B receptor and 5-HT2B receptors. Mol Pharmacol. 2007 Jun;71(6):1463-74. doi: 10.1124/mol.106.032656. Epub 2007 Feb 26. PMID: 17325130.

58: Davies MA, **Setola V**, Strachan RT, Sheffler DJ, Salay E, Hufeisen SJ, Roth BL. Pharmacologic analysis of non-synonymous coding h5-HT2A SNPs reveals alterations in atypical antipsychotic and agonist efficacies. Pharmacogenomics J. 2006 Jan-Feb;6(1):42-51. doi: 10.1038/sj.tpj.6500342. PMID: 16314884.

59: Pullagurla M, Siripurapu U, Kolanos R, Bondarev ML, Dukat M, **Setola V**, Roth BL, Glennon RA. Binding of amine-substituted N1-benzenesulfonylindoles at human 5-HT6 serotonin receptors. Bioorg Med Chem Lett. 2005 Dec 1;15(23):5298-302. doi: 10.1016/j.bmcl.2005.08.059. Epub 2005 Sep 23. PMID: 16183286.

60: Abate C, Kolanos R, Dukat M, **Setola V**, Roth BL, Glennon RA. Interaction of chiral MS-245 analogs at h5-HT6 receptors. Bioorg Med Chem Lett. 2005 Aug 1;15(15):3510-3. doi: 10.1016/j.bmcl.2005.05.092. PMID: 15990303.

61: **Setola V**, Dukat M, Glennon RA, Roth BL. Molecular determinants for the interaction of the valvulopathic anorexigen norfenfluramine with the 5-HT2B receptor. Mol Pharmacol. 2005 Jul;68(1):20-33. doi: 10.1124/mol.104.009266. Epub 2005 Apr 14. PMID: 15831837.

62: Kolanos R, Siripurapu U, Pullagurla M, Riaz M, **Setola V**, Roth BL, Dukat M, Glennon RA. Binding of isotryptamines and indenes at h5-HT6 serotonin receptors. Bioorg Med Chem Lett. 2005 Apr 15;15(8):1987-91. doi: 10.1016/j.bmcl.2005.02.070. PMID: 15808453.

63: Lee M, Rangisetty JB, Pullagurla MR, Dukat M, **Setola V**, Roth BL, Glennon RA. 1-(1-Naphthyl)piperazine as a novel template for 5-HT6 serotonin receptor ligands. Bioorg Med Chem Lett. 2005 Mar 15;15(6):1707-11. doi: 10.1016/j.bmcl.2005.01.031. PMID: 15745826.

64: Chang-Fong J, Rangisetty JB, Dukat M, **Setola V**, Raffay T, Roth B, Glennon RA. 1,2,3,4-tetrahydrocarbazoles as 5-HT6 serotonin receptor ligands. Bioorg Med Chem Lett. 2004 Apr 19;14(8):1961-4. doi: 10.1016/j.bmcl.2004.01.071. PMID: 15050637.

65: Pullagurla MR, Dukat M, **Setola V**, Roth B, Glennon RA. N1-benzenesulfonylgramine and N1-benzenesulfonylskatole: novel 5-HT6 receptor ligand templates. Bioorg Med Chem Lett. 2003 Oct 6;13(19):3355-9. doi: 10.1016/s0960-894x(03)00612-7. PMID: 12951125.

66: **Setola V**, Hufeisen SJ, Grande-Allen KJ, Vesely I, Glennon RA, Blough B, Rothman RB, Roth BL. 3,4-methylenedioxymethamphetamine (MDMA, "Ecstasy") induces fenfluramine-like proliferative actions on human cardiac valvular interstitial cells in vitro. Mol Pharmacol. 2003 Jun;63(6):1223-9. doi: 10.1124/mol.63.6.1223. PMID: 12761331.

67: Leavitt M, **Setola V**, Fishman PH. Protein kinase C-mediated down-regulation of beta(2)-adrenergic receptor and gene expression in rat C6 glioma cells. J Neurochem. 2001 May;77(3):823-9. doi: 10.1046/j.1471-4159.2001.00279.x. PMID: 11331411.

68: Nguyen T, Shapiro DA, George SR, **Setola V**, Lee DK, Cheng R, Rauser L, Lee SP, Lynch KR, Roth BL, O'Dowd BF. Discovery of a novel member of the histamine receptor family. Mol Pharmacol. 2001 Mar;59(3):427-33. doi: 10.1124/mol.59.3.427. PMID: 11179435.

Book Chapters

1: Zhou Y*, Freeman K*, **Setola V***, Cao D*, Kaski S, Kreek MJ, Liu-Chen LY. Preclinical Studies on Nalfurafine (TRK-820), a Clinically Used KOR Agonist. Handb Exp Pharmacol. 2021 Apr 9. doi: 10.1007/164_2021_443. PMID: 33834267. *Equal contribution

2: **Setola V**, Roth BL. The Emergence of 5-HT2B Receptors as Targets to Avoid in Designing and Refining Pharmaceuticals. The Receptors: The Serotonin Receptors: From Molecular Pharmacology to Human Therapeutics. Ed. BL Roth. Ed. Totowa, NJ: Humana Press Inc., 2006. 419-438.

Review Articles

1: Hutcheson JD, **Setola V**, Roth BL, Merryman WD. Serotonin receptors and heart valve disease—it was meant 2B. Pharmacol Ther. 2011 Nov;132(2):146-57.

2: **Setola V**. Receptorome screening: a powerful, facile approach to better understand and engineer drugs. Drug News Perspect. 2009 Oct;22(8):459-66.

3: **Setola V**, Roth BL. Screening the receptorome reveals molecular targets responsible for drug-induced side effects: focus on 'fen-phen'. Expert Opin Drug Metab Toxicol. 2005 Oct;1(3):377-87.

4: **Setola V**, Roth BL. Why mice are neither miniature humans nor small rats: a cautionary tale involving 5-hydroxytryptamine-6 serotonin receptor species variants. Mol Pharmacol. 2003 Dec;64(6):1277-8.

11/29/08

11-29-08

CURRICULUM VITAE

Lauralee Sherwood

BORN: November 26, 1942
Shepherd, Michigan

MARRIED: Harold Peter Marshall; Extension Professor, W.V.U.; married June 15, 1965

CHILDREN: 2 daughters; Melinda, February 9, 1969
Allison, December 14, 1973
3 grandchildren: Lindsay, September 1, 1994
Emily, July 12, 1998
Alexander, April 8, 2005

EDUCATION: B.S., Michigan State University, 1964
D.V.M., Michigan State University, 1966

AWARDS AND HONORS:
Veterinary Public Health Award
Phi Zeta Veterinary Honorary
Borden Veterinary Award
Phi Kappa Phi Award
Women's Veterinary Medical Association Award
Catherine Patton Memorial Award
Mortar Board National Honor Society
West Virginia University Outstanding Teacher Award, 1972-1973
West Virginia University Outstanding Teacher Award, 1975-1976
Amoco Foundation Outstanding Teacher Award, 1975-76
Who's Who in American Women, listed in 12th and 13th editions
Directory of Distinguished Americans, 1st edition
WCLG Outstanding Working Woman Award
Mary Catherine Buswell Award, 1983
Mountain Honorary, 1983
Who's Who in West Virginia, listed 1983
Golden Key National Honor Society Outstanding Faculty Award, 1984
Who's Who in Frontiers of Science and Technology, 2nd edition
Gamma Sigma Delta Teaching Award of Merit, 84-85
Dental Hygiene Honor Society, 1993
Who's Who Among American Teachers, listed 1996
American Printers Association Award of Excellence, 1997
Distinguished Membership in National Society of Collegiate Scholars, 2000
Who's Who Among America's Teachers, listed 2000
Dean's Award for Excellence in Education, 2001
Bookbuilders West Award in School Publishing, 2005
Greek Faculty of the month, March 2006

SOCIETIES:

American Physiological Society, Associate Member
American Veterinary Medical Association
Women's Veterinary Medical Association
West Virginia Veterinary Medical Association
American Association for the Advancement of Science
National Women's Studies Association
American Heart Association/Board of Directors, West Virginia Affiliate
Human Anatomy and Physiology Society

EXPERIENCE:

Professor in Physiology, West Virginia University, Morgantown, WV (1989-present)

Associate Professor in Physiology, West Virginia University, Morgantown, WV (1975-1989).

Assistant Professor in Physiology and Biophysics, West Virginia University, Morgantown, WV (1970-1975)

Instructor in Physiology and Biophysics and in Preventive Medicine and Public Health (dual appointment), West Virginia University, Morgantown, WV (1967-1970)

Research Assistant (including teaching and research), Department of Physiology and Biophysics, West Virginia University, Morgantown, WV (1966-1967)

Teaching (last ten years)

Course Responsibilities

1998-99	Fall Semester	Physiology 241 (course coordinator) (enrollment – 208)
		Physiology 241 (self-study course for long-distance learners pursuing a masters degree in nursing)
		Physiology 490
		Problem Based Learning Facilitator
	Spring Semester	Physiology 141
1999-2000	Fall Semester	Physiology 241 (course coordinator) (enrollment – 204)
		Physiology 490
		Problem Based Learning Facilitator
	Spring Semester	Physiology 141
2000-01	Fall Semester	Physiology 241 (course coordinator) (enrollment – 196)
		Physiology 490

		Problem Based Learning Facilitator
	Spring Semester	Physiology 141 Problem Based Learning Alternate Facilitator
2001-02	Fall Semester	Physiology 441 (course coordinator) (enrollment –206) Physiology 790 Problem Based Learning Alternate Facilitator
	Spring Semester	Physiology 241 Problem Based Learning Facilitator
2002-03	Fall Semester	Physiology 441 (course coordinator) (enrollment – 191) Physiology 743 (lecture component combined with Physiology 441) (enrollment – 90) Physiology 743 Small Group Facilitator Physiology 790 MS I Problem Based Learning Alternate Facilitator
	Spring Semester	Physiology 241 Problem Based Learning Facilitator
2003-04	Fall Semester	Physiology 441 (course coordinator) (enrollment – 221) Physiology 743 (lecture component combined with Physiology 441) (enrollment – 45) Physiology 790 MS I Problem Based Learning Alternate Facilitator
	Spring Semester	Physiology 241 MSI Problem Based Learning Facilitator
2004-05	Fall Semester	Physiology 441 (course coordinator) (enrollment - 220) Physiology 743 (lecture component combined with Physiology 441) (enrollment – 50) Physiology 790 MSI Problem Based Learning Alternate Facilitator
	Spring Semester	Physiology 241 MSI Problem Based Learning Facilitator
2005-06	Fall Semester	Physiology 441 (course coordinator) (enrollment – 258) Physiology 743 (lecture component combined with Physiology 441) (enrollment – 51) Physiology 790

	Spring Semester	Physiology 241
2006-2007	Fall Semester	Physiology 441 (course coordinator) (enrollment – 240) Physiology 743 (lecture component combined with Physiology 441) (enrollment – 50) Physiology 790
	Spring Semester	Physiology 241
2007-2008	Fall Semester	Physiology 441 (course coordinator_ (enrollment – 148) Physiology 743 (lecture component combined with Physiology 441) (dental section – 50; pharmacy section – 85) Physiology 790
	Spring Semester	Physiology 241
2008-2009	Fall Semester	Physiology 441

Graduate Committees - completed

Andrea Ward	MS, Animal Physiology 1972
Rachel Yeater	Ph.D., Exercise Physiology 1976
Gay Israel	Ed.D., Exercise Physiology 1976
Joseph Kaczmarcyzk	MS, Physiology 1977
Robert Braine	Ed.D., Exercise Physiology 1977
Les Miller	Ed.D., Technology Education 1978
Rita Carman	Ed.D., Exercise Physiology 1978
Mary Trotto	Ed.D., Exercise Physiology 1978
Deryl Rowe	Ed.D., Exercise Physiology 1979
Mary Kay White	Ed.D., Exercise Physiology 1981
Janet Paige Bonsall	Ed.D., Technology Education 1981
Thomas Adams	Ed.D., Exercise Physiology 1981
Charles Meacci	Ed.D., Exercise Physiology 1982
Debra Weber	MS, Exercise Physiology 1982
John Boyd	Ed.D., Exercise Physiology 1983
Beth Rosenberg	Ed.D., Exercise Physiology 1983
James Warner	MS, Exercise Physiology 1983
Yasuo Kimura	Ed.D., Exercise Physiology 1983
Mary Ann Hiser	MS, Nursing 1983
Gay Bindocci	Ed.D., Technology Education 1983
Robert Boyd	Ed.D., Exercise Physiology 1984
Christopher Reid	MS, Exercise Physiology 1984
Regina Hopewell	MS, Exercise Physiology 1985
James Warner	Ed.D., Exercise Physiology 1986
Payson Daugherty	Ed.D., Exercise Physiology 1987
Regina Hopewell	Ed.D., Exercise Physiology 1990
Lois Veltum	Ph.D., Psychology 1991
Jennifer Abel	Ph.D., Psychology 1991
Kareem Batarseh	Ph.D., Engineering 1992

Ronald Gault	Ed.D., Exercise Physiology 1993
Karen Knestrick	MSN, Nursing 1995
James Davig	Ph.D., Psychology 1999

Committees

State level committees

West Virginia Board of Directors, American Heart Association, 83-91
Nominating and Awards Committee, West Virginia Chapter of American Heart Association, 83-91

University level committees

Senate Teacher Evaluation Committee, 73-76
American Association of University Professors, Committee W Chairperson, 73-77; Executive Board 75-76; Secretary-treasurer, 76-77
University Affirmative Action Committee, 76-87, chair, 84-85
Women's Professional Development Committee, 76-77
Caucus on Women's Concerns, 76-77
University Council for Women's Concerns, Chairwoman, 77-81
Planning Committee, September Festival of Women, 78
University Outstanding Teachers Award Committee, 78
Regional Veterinary Medical School Committee, 78-79
Senate Ad Hoc Committee on Teacher Evaluation, 78-79
Planning Committee for Workshops on Women and Work, 80
Ad Hoc Committee on Interdepartmental Major in Natural Science, 81
Faculty Hearing Panel, 82-heard two cases; chaired one
Planning Committee, FDA Consumer Exchange Conference
Co-Chair for Focus on Women and Health: Taking Care and Taking Charge, 82
Ad Hoc Committee on Day Care, 83
Ad Hoc Committee on Expenditure of $250,000 Contributed by Athletic Program
Program Change Policies and procedures Task Force, 84-85
Program Change Document Drafting Subcommittee, 84
Senate Liaison to the Center for Extension and Continuing Education Promotion and Tenure Council, 84-85
Senate Liaison to Committee on Membership and Constituencies, 84-85
Task Force on Affirmative Action, 87-90
Centenary Commencement Planning Committee 88-91
Child Care Planning and Advising Committee 89-90
Book Store Advisory Committee 89-90, Chairperson 90-91
Committee on Bookstore Operations, 90-91
University Financial Exigency Committee, 90-91, 94-95
Self-Study Task Force for North Central Accreditation, 92-94
Faculty Hearing Panel, 92-93, 97-98, 98-00
Self-Study Committee on NCAA Accreditation, Fiscal Integrity Subcommittee, 93-94
Financial Exigency Committee, 96-01
Senate Student Instruction Committee, 98-02
Faculty Senate, 81-86, 90-94, 99-05, 06-09
Mortar Board Faculty Advisor, 74-77, 82-85, 93-97, 99-00
WVU Foundation and Bucklew Scholars Selection Committee, 99 - 00

Task Force to Develop Undergraduate Mission Statement, 00
Faculty Senate Executive Committee, 83-85, 00-01
Senate Membership and Constituencies Committee, Chairperson, 91-93, 00-01, 02-03
Assessment Council, 02-03
Student Instruction Committee, Chairperson, 02-03, member, 06-07, 07-09
Undergraduate Assessment Subcommittee, 02-03
University-wide Promotion and Tenure Committee, 83-85, chair 84-85; 00-01; 04-05
Senate Committee on Committees, 81-83, Chair, 82-84; 02-04, Chair 03-04; 05-06
Consultant to Faculty Welfare Committee regarding Program Change Document, 2005
Senate Faculty Welfare Committee, 06-08

College level committees

Dental Hygiene Subcommittee on Biological and Clinical Sciences, Chairwoman, 71-72
Faculty interviewer for Medical Admissions Committee, 72, 73, 74, 75, 77, 78, 79
Medical Center Student Advisory Committee, 73-74
School of Nursing Committee to Coordinate Sophomore Level Courses, 72-73
School of Medicine Promotions and Tenure Committee, 73-74, 74-75, 81-82, 82-83
School of Medicine Student Liaison Committee, 74-77
School of Medicine Outstanding Teacher Awards Committee, 75-81, chairperson 76-78
Physical Therapy Admissions Committee, 78-83
Ad Hoc Committee on Basic Science Curriculum for Non-Medical Students, chairperson, 78-79
Medical Technology Student Disciplinary Committee 89-present
Medical Technology Admissions Committee, 90-99
Physical Therapy Curriculum Committee, 93
Health Science Center Classroom Advisory Committee, 1994-97
Health Science Center Classroom Scheduling Subcommittee, Chairperson, 1996
Health Science Center Technological Teaching Support Subcommittee, Co-chairperson, 1996
Health Science Center Educational Resources Management Committee, Chair, 1997
School of Medicine Community Centered Committee, 1997
Educational Resources Management Unit Implementation Task Force, Chair, 1998
Dental Hygiene Curriculum Reform Committee 00
Exercise Physiology Academic Standards Committee, 2001-present
School of Medicine Distinguished Teacher Committee, 2001-2006
Dental Hygiene Curriculum Committee, 70-present
Medical Technology Academic and Professional Standards Committee, 1973- present
School of Medicine Academic and Professional Standards Committee, 2006-2007

Departmental level committees

Physiology and Biophysics Committee to develop guidelines for doctoral program, 1972
Preventive Medicine Curriculum Committee and Electives Committee, 68-70
Physiology Departmental Social Committee, chairperson, 73-78
Departmental Promotion and Tenure Committee, 76-77
Departmental Librarian, 78-83
Departmental Sexual Harassment Liaison, 92-present
Departmental Affirmative Action Representative, 94-present
Departmental Office Management Committee, 97
Departmental Budget Review Committee, 00-present
Interview Committee for new Department Office Manager, 03

Search Committees

Department of Physiology Faculty Recruitment Committee, 72-75
Search Committee for Assistant to the President for Equal Employment Opportunity and Affirmative Action, 78
Search Committee for Coordinator of Women's Studies, 80
Presidential Search and Screening Committee, 81
Search Committee for Special Assistant to the President for Social Justice, 87
Search Committee for faculty member in Exercise Physiology, 94
Search Committee for new faculty member in Physiology and Pharmacology and the Center for Advanced Imaging, Ex-Officio member as Affirmative Action representative, 03
Search Committee for four faculty members in Cardiovascular Research Center, Ex-Officio as Affirmative Action Representative, 04 - 05
Search Committee for two Assistant Deans for Graduate Studies and Research, Ex-Officio as Affirmative Action Representative, 04 - 05
Search Committee for faculty member in Medical Technology, 05
Search Committee for faculty members in Cardiovascular Research Center, Ex-Officio as Affirmative Action Representative, 06-08
Search Committee for physiology teaching faculty member in Physiology and Pharmacology, Chairperson, 08

Presentations, seminars, guest lectures

Biological Implications of Technology on Man in interdisciplinary graduate seminar (IA383) on Man, Society, and Technology, 73-80, biannually

Animals' Relationship to Human Health, in-Ag 11, yearly since 73

Health Effects of Air Pollution in Biology 2. TV taped in 1970; repeated each semester until 78

Health Effects of Environmental Pollution in Social Sciences 2, 70 and 71

Rabies Prophylaxis Seminar to Pediatrics staff, 69

Zoonotic Dermatophytes in Infectious Disease seminar, 69

Meat Hygiene seminar to University food handlers, 69

Rabies Prevention, 1969 West Virginia Rural Health Conference, Jackson's Mill

Respiratory Effects of Air Pollution in TB and Respiratory Disease Conference, 70
Area Scientific Speakers Program; presented programs on zoonoses at Kennedy Youth Center and area schools as requested, 70

Departmental colloquium, Zoonoses of Laboratory Animals, 74

Telelecture; pathophysiology course on Body Fluids and Electrolyte Balance, School of Nursing, 74

Postgraduate Conference on Myofunctional Therapy for Dental Hygienists, 74

Women in Non-traditional Roles, Women's Business and Professional Organization, 74

Panel member on Population Control in MDS course, Human Sexuality, 75

Panel member in sociology course on Alternative Life Styles, 75

Panel member in Trends in Nursing, 76

Region VI Coronary Care continuing education program at Fairmont State College; lecture on Anatomy and Physiology of the Heart, 76

Guest speaker at Samothrace on Combining Career and Family, 76

Careers in the Health Sciences, Boreman Hall, 78

Guest lecture for Mu Tau, Med Tech honorary, Combining Career and Family, 79

Guest on WBOY, WWVU, WAJR, WCLG discussing September Festival of Women and newly established Council for Women's Concerns, 78

Lecturer in University Hospital In-service training program, The Physiology of Stress, twice a year, 79-85

Guest speaker at LKS Pharmacy honorary banquet, Combining Career and Family, 79

Regional Medical Service Paramedic Training Program and Coronary Care Continuing Education Program, Respiratory and Cardiovascular Physiology (25 contact hours), 76-85

Luncheon speaker at Morgantown Rotary Club, Biological Implications of Technology on Man, 80

Guest speaker at North Elementary School, Physiology of the Eye, 80

Stress Workshop, Workshops on Women and Work, 81

How to Take Care of Pets, North Elementary School, 81, 84

Guest on WYEP, WCLG, WAJR, WWVU regarding conference, Focus on Women and Health: Taking Care and Taking Charge, 82

Presentation to American Association of University Women, Women and Health, 82
Cardiovascular Anatomy and Physiology, Fairmont General Hospital Coronary Care Inservice program, 82

Stress Workshop, University Hospital In-service program, three times a year since 81

Cardiac Arrhythmia Workshop, University Hospital In-service program, twice a year, 82-94

Panelist on Promotion and Tenure, Center for Extension and Continuing Education Annual Conference, 84

Women in Science, Women's Studies 240; Methods and Perspectives in Women's Studies, 1985.

Faculty Development Seminar; Teaching large classes: Making every minute and every student count, 89

Guest lecture in Women's Studies 240; Individual Experiences and Institutional Structures, 89, 90

Guest lecture in Animal Physiology; Gas exchange, 89; Acid-Base Balance, 90-present

Other service and scholarly activities

Assisted Dr. Stan Bauman and Dr. Scott Pore in a survey of the incidence of systemic mycoses among local domestic animals, 67

Assisted Dr. Herbert Eckert in the initial planning stages of his inhalation studies in mice, 67

Supervised student research on the incidence of pathogenic bacterial contamination in eggs from the WVU poultry farm, 68

Conducted an evaluation of the state meat hygiene program, 69

Participated with Dr. Robert Nolan and Dr. Marilyn Jarvis-Eckert in the development of research proposals for potential contracts and/or traineeships for Preventive Medicine, 70

Participated in preventive medicine faculty evaluation of the medical student field study in Clay-Battelle as related to community and curriculum goals, 70

Prepared for and participated in dental hygiene and physical therapy accreditation visits, 70

Developed 1969 4-H State Health Program entitled, Rabies Control

Provided a series of public meetings on rabies control during rabies quarantine, 72

Served as informal rabies consultant for Monongalia County Health Department since 67

Served as a member of the training staff led by Dr. Herman Turndorf in the Cardiopulmonary Resuscitation Training Program,; sponsored by the WV Heart Association for emergency personnel throughout the state, 72

Delivered a series of telectures on Safe Food for the WV State Nutrition Program, 71

Prepared booklet on Careers in Veterinary Medicine for 4-H; also participated in Career Day at Jackson's Mill, 71

Obtained Senate Research Grant to investigate "Regulation of water and electrolyte composition of skeletal muscle of fetal and neonatal dogs", 74

Organized faculty women's reception, 75

St. Francis High School Career Day, 75

Presentations to local kindergartners on "How Your Body Works", 75-80 annually

Organized program for regional veterinary medical association considering the relationship between veterinary medicine and pharmacy, 77

Hosted Ruth Bader Ginsberg and Sharon Rockefeller as guest speakers for September Festival of Women, 78

Assisted in preparation of materials concerning zoonoses for rural health education program, 79

Represented the physiology department in a recruitment program sponsored by the Graduate School, entitled "You and Your Future: Life After Your Undergraduate Degree", 79

Helped compile and get published the Women's Resource Guide, a directory of services available to women in the university and Morgantown community, 80

Served on the editorial board for Toward the Second Decade, Greenwood Academic Press, 81

WWVU Telethon Operator, 81

Organized Harrison County Gifted Children Field Trip to WVU Medical Center, 82

Co-chaired a national multidisciplinary conference, Focus on Women and Health: Taking Care and Taking Charge, held at WVU September 30-October 2, 1982. This conference which featured 95 speakers from 20 states brought over 600 people from across the country to participate in the 3 days of presentations, films, health screening, a concert, a run-walk. Planning and implementation of the conference involved organizing and managing 30 subcommittees and several hundred volunteers. $37,000 was generated from internal and external sources to fund the conference, 82

Delivered Keynote Address at Physical Therapy Convocation, 1993

Delivered physiology module for the tri-state review for the Dental Hygiene National Board Exam, 96, 97, 98, 99, 00

Presented video for 35-year recognition for Marta Henderson, a Medical Technology faculty member, at the School of Medicine Faculty Awards program at the request of the Dean's Office

Presented a module on the heart for national distribution on public radio as part of health awareness programming

Prepared for and participated in Physical Therapy accreditation site visit, 2001

Participated, along with Peter Marshall, Extension Professor, in the First Impressions program for the WVU Center for Extension. This involved a day and half visit to Parkersburg, WV with a specific agenda of items to be investigated, followed by a report on the positive aspects and areas for improvement for the community as viewed from the perspective of a first-time visitor, 2001

Collaborative Research Endeavors

Co-investigator on a 20-year longitudinal multidisciplinary study which is examining the age-related changes in the musculoskeletal and cardiovascular systems of women from premenopause into post-menopause, 83

Co-investigator on an NIH study to establish a canine model for studying osteoporosis, 83

Co-investigator on a Biomedical Research grant to establish a porcine model for studying osteoporosis, 87-89

Published Papers and Presentations

Sherwood, Lauralee, Schmidt, Donald A., Brent, Irene J., and Howard, Donald L. Canine Hemophilia Due to Antihemophilic Factor Deficiency: A Case Report. MSU Veterinarian, East Lansing, Michigan, 1966.

Sherwood, Lauralee. Rabies Control, West Virginia 4-H Health Program, Cooperative Extension Service, Morgantown, WV, 1968.

Sherwood, Lauralee. Rabies Prevention. West Virginia Medical Journal, Charleston, West Virginia, 1969.

Sherwood, Lauralee. Biological Implications of Technology on Man. A monograph on Man; Society; Technology; West Virginia University, Morgantown, West Virginia, 1976.

Sherwood, Lauralee. Human Physiology, Series A Workbook and Series B Workbook, West Virginia University, Morgantown, West Virginia, 1977 and 1979.

White, Mary Kay, Yeater, Rachel A., Martin, Bruce R., Rosenberg, Beth, Sherwood, Lauralee, Weber, Kenneth, Della-Giustina, Daniel E. Effects of Aerobic Dancing and Walking on Cardiovascular Function and Muscular Strength in Postmenopausal Women. Journal of Sports Medicine and Physical Fitness, Vol. 24 - No. 2, pp. 159-166, June, 1984.

Warner, James G., Yeater, Rachel A., Sherwood, Lauralee. A Comparison of Four Hydrostatic Weighing Methods Using College-age Females. Presentation and abstract proceedings of the Mid-Atlantic Regional Meeting of the American College of Sports Medicine, Ithaca, New York, Feb, 1984.

Rosenberg, Beth S., White, Mary Kay, Sherwood, Lauralee, Butcher, Roy. Menstrual Cycle Effects on Cardiovascular Responses to Submaximal Exercise in Trained and Untrained Females. Presentation and Abstract for the American Alliance for Health, Physical Education, Recreation and Dance National Conference, Anaheim, California, March, 1984.

Rosenberg, Beth S., White, Mary K., Barnes, Carolyn E., Sherwood, Lauralee. Menstrual Cycle Effects on Anaerobic Power, Muscular Strength and Muscular Endurance in Trained and Untrained Females. Poster session and abstract for the American Alliance for Health, Physical Education, Recreation and Dance National Conference, Anaheim, California, March, 1984.

Rosenberg, Beth S., White, Mary K., Weber, Kenneth C., Sherwood, Lauralee, Butcher, Roy. Menstrual Cycle Effects on Maximal Performance in Trained and Untrained Females. Presentation and abstract for the National Meeting of the American College of Sports Medicine, San Diego, California, May, 1984.

Warner, James G., Yeater, Rachel A., Sherwood, Lauralee. A Hydrostatic Weighing Method Using Total Lung Capacity and a Small Tank. Presentation and abstract proceedings of the National Meeting of the American College of Sports Medicine, San Diego, California, May, 1984.

Martin, R.B., Butcher, R.L., Sherwood, L.L., Buckendahl, P., Boyd, R.D., Farris, D., Sharkey, N., Dannucci, G. Effects of Ovariectomy in Beagle Dogs. Bone. April, 1987.

Warner, James G., Yeater, Rachel A., Sherwood, Lauralee. A hydrostatic Weighing Method Using Total Lung Capacity. British Journal of Sports Medicine. March, 1986.

Textbook Publication

Sherwood, Lauralee. Human Physiology: From Cells to Systems. West Publishing Company, 1989.

Sherwood, Lauralee, Harley, John. Instructors Manual to accompany Human Physiology: From Cells to Systems. West Publishing Company, 1989.

Sherwood, Lauralee. Learning Resource Manual to accompany Human Physiology: From Cells to Systems. West Publishing Company, 1989.

Sherwood, Lauralee. Fundamentals of Physiology: A Human Perspective. West Publishing Company, 1991.

Sherwood, Lauralee. Instructors Manual to accompany Fundamentals of Physiology: A Human Perspective. West Publishing Company, 1991.

Gaines, Ronald, Sherwood, Lauralee. Learning Resource Manual to accompany Fundamentals of Physiology: A Human Perspective. West Publishing Company, 1991.

Sherwood, Lauralee. Human Physiology: From Cells to Systems, Second Edition, West Publishing Company, 1993

Sherwood, Lauralee. Instructors Manual to accompany Human Physiology: From Cells to Systems, Second Edition, 1993

Sherwood, Lauralee. Fundamentals of Physiology: A Human Perspective, Second Edition, 1995 (Published August 1994)

Sherwood, Lauralee. Instructors Manual to accompany Fundamentals of Physiology: A Human Perspective, Second Edition, 1995 (Published September 1994)

Vona-Davis, Linda, Lauralee Sherwood. Current Readings in Physiology, West Publishing Company, 1995

Sherwood, Lauralee. Human Physiology: From Cells to Systems, Third Edition, Wadsworth Publishing Company, 1997.

Vona-Davis, Linda and Lauralee Sherwood, ed. Current Perspectives in Human Physiology: Selected Readings, Wadsworth Publishing Company, 1998

Temple, Jay and Lauralee Sherwood. Instructor's Manual to accompany Human Physiology: From Cells to Systems, Third Edition, Wadsworth Publishing Company, 1997

Sherwood, Lauralee. Human Physiology: From Cells to Systems, Fourth Edition, Brooks/Cole Publishing Company, 2001

Temple, Jay and Lauralee Sherwood. Instructors Manual to Accompany Human Physiology: From Cells to Systems, Fourth Edition, Brooks/Cole Publishing Company, 2001

Sherwood, Lauralee and Christina DeBias. Physiology chapter in Debias, Dental Hygiene in Review. Williams and Wilkins, 2001

Sherwood, Lauralee. Human Physiology: From Cells to Systems, Fifth Edition, Brooks/Cole Publishing Company, 2004 (published in June 2003)

Temple, Jay and Lauralee Sherwood. Instructors Manual to Accompany Human Physiology: From Cells to Systems, Fifth Edition, Brooks/Cole Publishing Company, 2004 (published in August 2003)

Sherwood, Lauralee, Klandorf, Hillar, and Paul Yancey. Animal Physiology: From Genes to Organisms, Brooks/Cole Publishing Company, 2005 (Published September 2004)

Sherwood, Lauralee. Fundamentals of Physiology: A Human Perspective, Third Edition, Brooks/Cole Publishing Company, 2006 (Published April 2005)

Sherwood, Lauralee. Human Physiology: From Cells to Systems, Sixth Edition, 2007 (published March 2006)

Sherwood, Lauralee. Principles of Human Physiology (Indian edition), 2007

Sherwood, Lauralee. Human Physiology: From Cells to Systems, Seventh Edition, 2010 (at printers, to be released 1-02-09)

Website and CD-ROM ancillaries

Supervised development of animations to accompany Sherwood, Human Physiology: From Cells to Systems, Fourth edition; Prepared by EightBall Media and edited by Christine Evers, 00

Served as a consultant for development of the PhysioEdge CD-ROM, an interactive testing and diagnostic tool that is a learning companion which accompanies each copy of Human Physiology: From Cells to Systems, Fifth edition; Prepared by Cowtown Media Company, 03

Supervised development of 20 new animations to accompany Sherwood, Human Physiology: From Cells to Systems, Fifth edition; Sherwood, Fundamentals of Physiology: A Human Perspective, Third Edition; and Sherwood, Klandorf, and Yancey, Animal Physiology: From Genes to Organisms, 04

Served as a consultant for development of the PhysioEdge2 CD-ROM, an interactive testing and diagnostic tool that is a learning companion which accompanies each copy of Fundamentals of Physiology: A Human Perspective, Third Edition, 04

Serving as a consultant for the development of animations for CengageNow website to accompany *Human Physiology: From Cells to Systems, Seventh edition*

Audio-publication

Human Physiology: Series A and Series B, 24 one hour-long audio cassette tapes, Audio Learning Inc., DeKalb, Pennsylvania, 76-80.

Grants

GRS Grant: "Regulation of Water and Electrolyte Composition in Skeletal Muscles of Fetal and Neonatal Dogs" - $2,534, 1974.

HEW Grant: "Erythrocytes of Animals During Early Development": Associate investigator (Dr. Ping Lee - Principal Investigator), $31,032, 1974-75.

Mylan Pharmaceuticals, Inc. Support for Focus on Women and Health: Taking Care and Taking Charge, $2,500, 1982.

WV Department of Health, Support for Focus on Women and Health: Taking Care and Taking Charge, $4,000, 1982.

Biomedical Research Grant, Co-Investigator. Principal Investigator: Robert Boyd, Director of Orthopedic Research Laboratory "Skeletal Effects of Estrogen Deficiency in the Swine", $6,000, 1987.

Evidence of National Recognition

Co-chaired a national multidisciplinary conference on women and health which brought appreciative national recognition to WVU and the conference co-chairs, 1982.

Invited to prepare a series of audio-cassette tapes on human physiology for national dissemination to allied health professionals by Audio Learning, Inc., 1976-1980.

Invited by the U.S. Food and Drug Administration to serve on the planning committee for a Consumer Exchange Conference, 1982.

Invited to participate as a panelist at the National Women's Studies Association Conference held July 1983.

Asked to review a potential new physiology textbook for undergraduate health professionals by Prentiss-Hall, 1977.

Listed in Who's Who in American Women and the Director of Distinguished Americans, and Who's Who in Frontiers of Science and Technology

Invited to prepare a prospectus for a new undergraduate physiology textbook for health professionals by West Publishers, 1984.

Completed a textbook, Human Physiology: From Cells to Systems and ancillary materials for national use in upper-level undergraduate physiology courses, 1989.

Completed a textbook, Fundamentals of Physiology: A Human Perspective and ancillary materials for national use in lower-level undergraduate physiology courses, 1991.

Completed the second edition of Human Physiology: From Cells to Systems, 1993.

Completed the second edition of Fundamentals of Physiology: A Human Perspective, 1995.

Listed in Who's Who Among American Teachers, 1996.

Completed the third edition of Human Physiology: From Cells to Systems, 1997

Received Textbook Printers of America Award of Excellence, 1997

Asked to review the 11 chapters (220 pages) on "Animal structure and Function" in Cecie Starr's textbook, Biology: Concepts and Applications, Brooks-Cole Publishing Company, 1999

Received Distinguished Membership in the National Society of Collegiate Scholars, 2000

Listed in Who's Who Among American Teachers, 2000

Completed the fourth edition of Human Physiology: From Cells to Systems, 2001

Completed the fifth edition of Human Physiology: From Cells to Systems, 2004

Completed the first edition of Animal Physiology: From Genes to Organisms, co-authored with Hillar Klandorf and Paul Yancey, 2004

Completed the third edition of Fundamentals of Physiology: A Human Perspective, 2005

The fifth edition of my Human Physiology: From Cells to Systems book received Bookbuilders West Award in School Publishing, 2005

Nominated for inclusion in Manchester Who's Who Among Executive and Professional Women in Science 2005-2006 edition

Completed the sixth edition of Human Physiology: From Cells to Systems, 2007 (published March 2006)

My textbook, Human Physiology: From Cells to Systems, was adapted for an Indian edition for sale exclusively in India, Pakistan, Bangladesh, Nepal and Sri Lanka by Cengage – Brooks/Cole publishing company.

My textbook, Human Physiology: From Cells to Systems, is being adapted for exclusive Canadian sales by Cengage – Nelson publishing company.

Completed the seventh edition of Human Physiology: From Cells to Systems, 2010 (to be published 1-02-09)

rec'd 8/31/11

CURRICULUM VITAE

ANNA A. SHVEDOVA

BUSINESS ADDRESS:

Center for Disease Control and Prevention
National Institute for Occupational Safety and Health
Health Effect Laboratory Division
Pathology and Physiology Research Branch (MS-2015)
1095 Willow dale Road
Morgantown, WV 26505-2888
Phone: (304) 285-6177
Fax: (304) 285-5938
E-mail: ats1@cdc.gov

EDUCATION:

B.S./M.S.	MV Lomonosov Moscow State University	1971
Ph.D. Physiology, Biophysics	MV Lomonosov Moscow State University	1975
D. Sc. Pathophysiology	USSR Academy of Sciences, Moscow	1988

PROFESSIONAL APPOINTMENTS:

1971-1972	Research Assistant, MV Lomonsov Moscow State University, Moscow
1972-1978	Research Associate, Institute of Chemical Physics, USSR Academy of Sciences, Moscow
1978-1984	Staff Research Scientist, Institute of Chemical Physics, USSR Academy of Sciences
1984-1990	Team Leader, Institute of Chemical Physics, USSR Academy of Sciences
1990-1991	Visiting Scholar, Department of Molecular and Cell Biology, University of California, Berkeley, CA 96804
1991-1992	Pharmaceutical Consultant, Medicine Inc, Southampton, PA 18966
1992-1995	Faculty, Center for Environmental and Occupational Health and Toxicology, University of Pittsburgh, Pittsburgh, PA 15238
1995-1996	Manager, Nutrition Research, General Nutrition Corporation (GNC), Pittsburgh, PA 15222
1996-1997	Research Professor, Department of Obstetrics, Gynecology and Reproductive Sciences, University of Pittsburgh, Pittsburgh, PA 15213
1997-Present	Senior Staff Scientist, National Institute for Occupational Safety and Health, Pathology and Physiology Research Branch, Health Effects Laboratory Division, Morgantown, WV 26505
2001-current	Adjunct Professor of the Department of Physiology and Pharmacology, West Virginia University, Morgantown, WV

11/12-1000

PROFESSIONAL SOCIETIES:

Society of Toxicology USA
American Association for Advancement in Science
International Society for Free Radical Research
New York academy of Sciences
Society for Investigative Dermatology

SPECIAL APPOINTMENTS, FELLOWSHIPS, AWARDS:

Bronze and Silver Awards for Achievements in Economics and Science (USSR, 1989, 1990)
Award for Scientific Achievements, the Institute of Chemical Physics, USSR, 1988
Award for Scientific Achievements and Merit, the Academy of Sciences USSR, 1989, 1990
Award of a grant from NIEHS (#ES05651), 1992-1995
Award for outstanding service as the President-Elect of the Allegheny-Erie Regional Chapter of the Society of Toxicology, 1998
Special recognition award for service as the President of the Allegheny-Erie Regional Chapter, the Society of Toxicology, 1999
Certificate of appreciation for outstanding service to the Allegheny-Erie Regional Chapter, the Society of Toxicology as Past President, 2000
Award for meritorious service as founding President of the Dermal Toxicology Specialty Section, the Society of Toxicology, 2001
The Society of Toxicology Public Communication Award for Recognition of Major Contributions to Broadening the Awareness of the General Public to Toxicological Issues, 2001
Fellow of the Academy of Toxicological Sciences, 2001- current
The Society of Toxicology Women in Toxicology Service Recognition Award, 2006
Alice Hamilton Award for Excellence in Occupational Safety and Health, 2006
CDC Charles C. Shepard Science Award; Honorable Mention for Outstanding Scientific Paper in Laboratory and Methods Category, 2006
Alice Hamilton Award for Excellence in Occupational Safety and Health, 2006
CDC Charles C. Shepard Science Award; Honorable Mention for Outstanding 2 Scientific Papers in Laboratory and Methods Category, 2008
CDC Charles C. Shepard Science Award; Honorable Mention for Outstanding Scientific Paper in Laboratory and Methods Category, 2009
Bullard-Sherwood Research to Practice (r2p) award for Approaches to Safe Nanotechnology: Managing the Health and Safety Concerns Associated with Engineered Nanomaterials NIOSH, 2011

EDITORIAL BOARD of JOURNALS (past/current):

Associate Editor, Toxicology and Applied Pharmacology	2008-current
Editorial Board of Toxicology and Applied Pharmacology	2003- 2007
Editorial Board of Regulatory Toxicology and Pharmacology	2004-current
Ad hoc Reviewer for Journal Leukocyte Biology	1993-1996
Ad hoc Reviewer for Toxicological Sciences	1997- current

Ad hoc Reviewer for the Journal Industrial Toxicology	2002- current
Ad hoc Reviewer for Toxicology	2001- 2003
Ad hoc Reviewer for Chemical Research in Toxicology	2003- current
Reviewer for nutrition book "Body Stat," Viking Penguin Press	1996
Ad hoc Reviewer for In Vitro Toxicology	2004-current
Ad hoc Reviewer for Environmental Science and Technology	2005-current
Ad hoc Reviewer for Carbon, International Journal, the American Carbon Society	2006-current

HONORS and OTHER SPECIAL SCIENTIFIC RECOGNITION:

Chair of Young Investigator Committee, Institute of Chemical Physics, USSR Academy of Sciences, Moscow, Russia	1981-1989
Secretary of Russian-Indian Chapter, the International Society, Moscow, Russia	1989-1990
Member of Newsletter Committee, A-E Regional Chapter of SOT	1994-1995
President-Elect, Allegheny-Erie Regional Chapter of SOT	1997-1998
President of Allegheny-Erie Regional Chapter of SOT	1998-1999
Chair of Nomination Committee, Allegheny-Erie SOT	1999-2000
Coordinator for Summer Student Program, NIOSH/CDC	1998-current
Member of Placement Committee, the Society of Toxicology	1999-2001
Founder and Interim President of the Dermal Toxicology Specialty Section, SOT	1999-2000
President of the Dermal Toxicology Specialty Section, SOT	2000-2001
American Women in Science	1998-1999
Member of New York Academy of Sciences	2001-current
Chairperson of Placement Committee, the Society of Toxicology	2001-2002
Fellow of the Academy of Toxicological Sciences	2001-current

SPECIALTIES BY TRAINING OR EXPERIENCE:

Biology, human and animal physiology, membrane toxicology, occupational toxicology, particle/vapor toxicology, molecular and cellular toxicology, dermal and pulmonary toxicology, pathophysiology, physiology and biochemistry of vision, biochemistry and physiology of nutrition, lipid biophysics and biochemistry, free radical biology and medicine, inflammatory diseases, cardio- and cerebral vascular pathophysiology, nanotoxicology, risk assessment, effects of workplace exposures on human and animal body functions, preventive measures of exposures and control/intervention research.

CURRENT RESEARCH INTERESTS:

Mechanism(s) of chronic allergic skin and lung diseases caused by industrial chemicals, vapor and particulates. Free radical reactions and inflammatory responses, molecular mechanisms of cell damage and apoptosis, oxidant injury, and skin cancer. Toxicology of nanomaterials and mechanism(s) of toxic effects of nanoscale products, biodiesel health effects, risk assessments and occupational exposures, development

of novel cellular and animal models, development of biomarkers of exposures, occupational lung and skin diseases, recommendations for risk assessment and management, prevention and control/intervention.

TEACHING, TRAINING and DEVELOPING STAFF:

Teaching and training six pre-doctoral students (1983-1988). Supervising and training five Ph.D. students and three post-doctoral fellows, (1984-90). Training and supervising five associate researches (1987-1989) and technicians (1993-97). Teaching and coordinating summer student program at NIOSH/CDC and WVU/BRIN program (1998-2002). Lecturing at West Virginia Science Teacher Association Meeting (2001). Supervising and training twenty college students from WVU and other universities at NIOSH (1997-2005). Mentoring female students providing leadership and encouraging them to achieve their professional goals in health sciences and toxicology field (1997-current). Supervising 2 Ph.D. students (2004-current), mentoring and training under-graduate/graduate/rotation students (1999-current). Lecturing in occupational health science course, WVU 2003-current.

INVITED PRESENTATIONS:

Allegheny-Erie Regional Chapter, Society of Toxicology, Spring Meeting, Pittsburgh, PA, May 1998
International Conference on Chemistry of Organic Peroxides, Moscow, Russia, June 1998
Dermal Investigative Group Meeting, NIOSH/CDC, Cincinnati, OH, May 1999
International Contact Dermatitis Symposium, San Francisco, CA, October 1999.
Manufacturing Technology and Consumable Product Division, Milacron, Cincinnati, OH, May 2000
Division of Life Science, King'ㄴF College, University of London, UK, August 2000
Division of Biochemical Toxicology, National Center for Toxicological Research, FDA, Jefferson, AR, December 2000
Department of Physiology and Integrative Pharmacology, WVU, Morgantown, WV, February 2001
Society of Toxicology 40-th Annual Meeting, San Francisco, CA, March 2001
NanoSpace 2001: Exploring Interdisciplinary Frontiers. International Conference on Integrative Nano/Microtechnology for Space and Biomedical Applications, NASA, Galveston, TX, March 2001
Meijo University, Section of Radiochemistry, Faculty of Pharmaceutical Sciences, Nagoya, Japan, January 2002.
NIOSH Ultrafine Aerosol Workshop, Wheeling, WV, Sept. 16 – 17, 2003
Institute Physico-Chemical Medicine, Moscow, Russia, Oct. 18-22, 2003
NASA/JSC-ES4/GBT, Houston, TX, Nov. 14-16, 2003
THE TOXICOLOGY FORUM's, 29-th Toxicology Annual Winter Meeting Washington DC, February 2-4, 2004
227TH American Chemical Society National Meeting, Symposium: Nanotechnology & the Environmental Toxicology & Bio-interactions of Nano-materials, March 28-April 1, 2004
Nanotoxicology Workshop, Gainesville, FL, Nov 3 – 4, 2004.
International Congress on Nanotechnology, San Francisco, CA, Nov 7 – 10, 2004
National Nanonotechnology Infrastructure Network (NNIN): "Nanosafe: A workshop on Environmental Health and Safety in Nanotechnology Research", Atlanta, GA, Dec 1-3, 2004
229th American Chemical Society National Meeting, San Diego, CA 2005, April 12-15
2nd International Symposium on Nanotechnology and Occupational Health, Minneapolis, MN, October 3-6, 2005
ILSI Health and Environmental Science Institute: Nanomaterial Safety EHS Subcommittee,

Washington, DC October 11, 2005
8th International Meeting on Effects of Mineral Dusts and Nanoparticles, EPA, Triangle Park, NC, October 25 – October 28, 2005
1st International Meeting: Nanotoxicology: Biomedical Aspects, Miami, FL, January 29 - February 1, 2006
Nobel Mini-Symposium on Nanotoxicology: Potential Risks and Safety Assessment, Karolinska Institute, Stockholm, Sweden, November 27, 2006
International Conference on Nanotechnology: Occupational and Environmental Health & Safety: Research to Practice, Cincinnati, OH, December 4-7, 2006
2nd International Nanotoxicology Meeting, Venice, Italy, April 18-21, 2007
FASEB/ASPET, Experimental Biology Meeting, Washington, DC, April 30-May 2, 2007
ICON Workshop: "Towards Predicting Nano-Bio Interactions", June 5 - 7, 2007, Zurich, Switzerland
3rd NASA-NIST Workshop on Nanotube Measurements, NIST, Gaithersburg, MD, USA, Sep 26-28, 2007
European NaNOSH Conference –Nanotechnologies: A Critical Area in Occupational Safety and Health, Helsinki, Finland, 3–5 December 2007
Mary Babb Randolph Cancer Center – National Institute of Occupational Safety and Health MBRCC - NIOSH Scientific Retreat in Cancer, Morgantown, West Virginia, February 12, 2008
NATO workshop: Risk, Uncertainty and Decision Analysis for Nanomaterials: Environmental Risks and Benefits and Emerging Consumer Products, Portugal, Faro, April 26-30, 2008
American Thoracic Society (ATS), Toronto, May 16-21, 2008
Nanotoxicology 2nd International meeting, Switzerland, Zurich, September 7-10, 2008
6th Symposium on Nanomedicine, Royal Swedish Academy of Sciences, Stockholm, Sweden, September 9-11, 2009
Royal Institute of Technology, Sweden and Karolinska Instituten, Stockholm, Sweden June 15-18, 2009
2nd Carbon Nanotube Biology, Medicine, Toxicology (CNTMT09) Satellite Symposium, Tsinghuo University, Beijing, China, June 20th, 2009
City University of Hong-Kong, Hong-Kong, June 22, 2009
University of Paris, Paris, France, July 1, 2009
4th Oxygen/Nitrogen Radicals and Cellular Injury Meeting, NY Academy of Sciences, New York, USA, October 28-30, 2009
Nanoscience and Technology in Chemistry, Health, Environment and Energy, International Conference, Agra, India, January 6-9, 2010
International Conference on Advances in Free Radicals Research, Natural Products, Antioxidants and Radioprotectors in Health/9th Annual Meeting of Society for Free Radical Research, Hyderabad, India, January 11-13, 2010
3rd Nanotoxicology Conference, Edinburgh, Scotland, June 2-4, 2010
Johns Hopkins Center for Alternatives to Animal Testing, expert workshop "Nanotechnology and Nanomaterials – Addressing Challenges to Safety Assessment and Regulation", Baltimore, MD, October 11-13, 2010.
2nd Nobel Forum "Understanding the Interactions of Engineered Nanomaterials with Biological Systems, Stockholm, Sweden, October 23, 2010
Nano-composite and Nanotube European Meeting, Brussels, Belgium, April 6-7, 2011
FP7-NANOMMUNE Workshop, Understanding Nano-Immuno-Interactions, Stockholm, Sweden, June 16-17, 2011

ORGANIZING and CHAIRING MEETINGS/WORKSHOPS

Toxicology in Court," Allegheny-Erie Chapter, Society of Toxicology, Fall Meeting, October 28, 1997.
Women Health Issue: Consideration to Toxicological Studies, Allegheny-Erie Chapter, Society of Toxicology, Spring Meeting, May 15, 1998.
Paracelsus Goes to School" Science Teacher Workshops, Pittsburgh, PA, May 14, 1998; Cuyahoga Falls, OH, June 2, 1999; Pittsburgh, PA, May 16, 2000.
Phenolic Compounds: Free Radical Mechanisms of Toxicity, Catalysis, and Protections," Symposium, Society of Toxicology 40th Annual Meeting, San Francisco, CA, March 29, 2001.
How to Market Yourself as a Toxicologist", 41st Annual Society of Toxicology Meeting, March 18, 2002,
"3rd International Conference on Oxygen/Nitrogen Radicals: Cell Injury and Disease," Morgantown, WV, June 1-5, 2002.
Reactive Oxygen and Nitrogen Species: Diagnostic, Preventive, and Therapeutic Values, International Symposium," Pre-Symposium to the XI-th Biennial Meeting of the Society for Free Radical Research International, St. Petersburg, Russia, July 9-13, 2002
Occupational Skin Exposure: Current Trends and Future Directions from the Field to Genomics, symposium, 43rd annual SOT Meeting, March 21-25, Baltimore, MD, 2004
44th annual Society of Toxicology Meeting, March 6-11, New Orleans, CA 2005
1st International Symposium, Nanotoxicology: Biomedical Aspects, Miami, FL 2006
Nobel Mini-Symposium on Nanotoxicology: Potential Risks and Safety Assessment,
Stockholm, Sweden, November 27, 2006
Invited workgroup expert at "Predicting Nano-Bio Inter-actions" at the Int. Council on Nanotechnology (ICON) focused on the development of a framework for understanding the interactions between engineered nanoparticles/biological systems at the molecular level, Zurich, Switzerland, June 4-8, 2007
3rd Nanotoxicology Conference, Edinburgh, Scotland, June 2-4, 2010

INTERAGENCY AND COOPERATIVE AGREEMENTS/JOINT RESEARCH

Memorandum of Understanding NIOSH/NASA (2003-current)
NIOSH/FDA (2002-2005)
University of London/NIOSH, London, UK (2001-current)
EPA/NIOSH Toxic Substances Control Act (TSCA) review committee on Carbon Nanoparticles (2005)
University of Pittsburgh/NIOSH/EPA/NIEHS Nanotoxicology meeting (2006)
WVU/NIOSH/ NIEHS (2001-current)

SCIENTIFIC ADVISORY BOARDS

Expert Review Panel/DOD Multi-Disciplinary University Initiative "Research between Physicochemical Characteristics and Toxicological Properties of Nanomaterials", funded by Air Force Office of Scientific Research, Rochester, MN, 2006.
Panel Review US Army Corps of Engineers/Nanomaterials Projects, 2008-current
NASA Johnston Space Center Standing Review Panel of Human Research Program,
Advanced Environmental Health/Food Technology, 2009-2011
Science Foundation Ireland (SFI, www.sfi.ie) strategic review panel member for the scientific review progress of the BioNanoInteract Strategic Research Cluster (SRC)/ the key sectors of Ireland's economic and scientific advancement; Information and Communication Technology, Biotechnology, and Sustainable Energy and Energy Efficient Technologies.

PUBLICATIONS:

More than 100 papers in Journals

PRESENTATIONS AT NATIONAL AND INTERNATIONAL MEETINGS:

Presentations at more than 70 Congresses and Meetings

PATENTS:

Antioxidant drug EMOXIPIN is patented as a "Retinoprotector for Treating Intraocular Hemorrhage, Myopic, Chorioretinal Dystrophies, Congenital Retinal Dystrophies, Retinal Burns and Prevention of Injury in Laser Coagulation" in:

US	4486440
FR	83143339-2551 659
CH	658595
DE	3330053C2
IT	1197696

BIBLIOGRAPHY:

Full-length manuscripts:

1. Kagan VE, Shvedova AA, Novikov KN, Kozlov YP. Light-induced free radical oxidation of membrane lipids in photoreceptors of frog retina. Biochem. Biophys. Acta 330: 76-79, 1973.

2. Novikov KN, Shvedova AA, Kagan VE, Kozlov YP, Ostrowsky MA. Photo- induced changes in photoreceptor membranes and rhodopsin revealed by craft-co-polymerization. Biophys.USSR 19(2): 280-284, 1974.

3. Sibeldina LA, Kagan VE, Shvedova AA, Novikov KN, Kobelev VS. NMR study of molecular organization of photoreceptor membranes. Proc. Natl. Acad. Sc. USSR 224(2): 228- 231, 1975.

4. Novikov KN, Kagan VE, Shvedova AA, Kozlov YP. Lipid-protein Interactions in photoreceptor membranes under lipid peroxidation. Biophys. USSR 20 (6): 1039-1042, 1975.

5. Kagan VE, Shvedova AA, Novikov KN, Kozlov YP. Effects of conformational rearrangements on spontaneous and induced lipid peroxidation in frog retina rod outer segments. Biophys. USSR 20 (6): 1043-1048, 1975.

6. Novikov KN, Shvedova AA, Tyurin VA, Shukolyukov SA, Kagan VE. On the role of lipid composition in kinetics of phospholipids free radical oxidation in photoreceptor membranes. Biophys. USSR 22 (5): 942-944, 1977.

7. Kagan VE, Shukolyukov SA, Tyurin VA, Shvedova AA, Korchagin VP, Galuschenko IV. Effects of chemical modification of lipids by molecular oxygen on thermal stability of rhodopsin in photoreceptor membranes of wall-eyed pollock. Studia Biophys. 72 (1): 51-58, 1978.

8. Kagan VE, Shvedova AA, Novikov KN. Participation of phospholipases in repair of photoreceptor membranes after lipid peroxidation. Biophys. USSR 23 (2): 279-284, 1978.

9. Shvedova AA, Ostrowsky MA, Bogoslowsky Al, Scherbatova Ol, Zueva MV, Trutneva KV. Damage of the retina by visible light and the role of antioxidant. Excerpta Medica 442: 114, 1978.

10. Shcherbatova OI, Zueva MV, Shvedova AA, Shamshinova AM, Kaban AA. State of the organ of vision in workers in the diamond-processing industry. Vestn Ophthalmology. 3:56-9, 1980.

11. Iakovlev AA, Shvedova AA, Ostrovskii MA. Effect of antioxidants on the oxygenation and bio-potentials of the retina (experimental studies). Vestn Ophthalmology. 2):37-40, 1978

12. Kagan VE, Lankin VZ, Shvedova AA, Novikov KN, Dobrina SK, Bratkovskaya LB, Kuliev IY. Enzymic and non-enzymic protective antioxidant systems in photoreceptors. Bull. Exp. Biol. Med. USSR 8:164-166, 1979.

13. Shvedova AA, Sidorov AS, Novikov KN, Galuschenko IV, Kagan VE. Lipid peroxidation and electric activity of the retina. Vision Res. 19: 49-55, 1979.

14. Ostrowscky MA, Bogoslowsky AL, Zueva MV, Shvedova AA. Investigation of the mechanisms of visible light injury on the normal animal retina. Vest. Acad. Med. Sci. USSR 12:57-61, 1979.

15. Korchagin VP, Bratkovskaya LB, Shvedova AA, Arkhipenko YV, Kagan VE, Shukolyukov SA. Oligomerization of intrinsic membrane proteins in the course of lipid peroxidation. Biochem. USSR 45 (10):1767-1772, 1980.

16. Bratkovskaya LB, Novikov KN, Shvedova AA, Polischuk RF, Kagan VE, Kozlov YP. Pyridine nucleotide-dependent systems of lipid peroxidation induction in retina photoreceptors. Biol. Sciences 6: 21-26, 1981.

17. Kuliev IY, Shvedova AA, Kagan VE, Krasnovsky AA, Kozlov YP. Light induced damage of the retina: participation of singlet oxygen and lipid peroxidation. Proc. Natl. Acad. Sc. USSR 263(5):1005-1009, 1982.

18. Shvedova AS, Kagan VE, Kuliev IY, Dobrina SK, Prilipko LL, Meerson FZ, Kozlov YP. Lipid peroxidation and damage of the retina in stress exposed rats. Bull. Exp. Biol. Med. USSR 4:24-27, 1982.

19. Polyansky NB, Smirnov LD, Shvedova AA, Kagan VE, Tkachuk VA. Inhibition of phosphodiesterase

of cyclic nucleotide from rabbit heart by 3-hydroxypyridines. Problems Med.Chem. 1: 123-127, 1983.

20. Shvedova AA, Kagan VE, Kuliev IY, Vekshina OM. Mechanisms of retina damage by fluorescent dyes. Bull. Exp. Biol. Med. USSR 8: 48-50, 1983.

21. Kagan VE, Bratkovskaya LB, Kuliev IY, Shvedova AA. The role of lipid peroxidation in retina damage under hyperbaric oxygenation and possibility of chemical protection by antioxidants. Proc. Natl. Acad. Sci. USSR 271 (1): 227-230, 1983.

22. Shvedova AA, Alekseeva OM, Kuliev IY, Muranov KO, Kozlov YP, Kagan VE. Damage of photoreceptor membrane lipids and proteins induced by photosensitized oxidation. Curr. Eye Res.2 (10): 683-690, 1983.

23. Polyansky NB, Smirov LD, Shvedova AA, Kagan VE. Inhibition of cyclic nucleotide phosphodiesterase from frog rod outer segments by 3-hydroxypyridines. Biol. Sciences 1: 27-31, 1984.

24. Shvedova AA. Molecular mechanisms of emoxipin effect. In: Emoxipin, Medexport, Moscow, USSR, pp. 2-19, 1984.

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126. Kisin ER, Murray AR, Sargent L, Lowry D, Chirila M, Siegrist KJ, Schwegler-Berry D, Leonard S, Castranova V, Fadeel B, Kagan VE, Shvedova AA. Genotoxicity of carbon nanofibers: are they potentially more or less dangerous than carbon nanotubes or asbestos? Toxicol Appl Pharmacol. 1;252(1):1-10, 2011

127. Teeguarden JG, Webb-Robertson BJ, Waters KM, Murray AR, Kisin ER, Varnum SM, Jacobs JM, Pounds JG, Zanger RC, Shvedova AA. Comparative proteomics and pulmonary toxicity of instilled single-walled carbon nanotubes, crocidolite asbestos, and ultrafine carbon black in mice. Toxicol Sci. 120(1):123-35, 2011

128. Tkach A, Shurin M, Shurin G, Kisin,; Murray, AR, Yang, Houng S, Star A, Bengt F, Kagan VE, Shvedova AA. Direct effects of carbon nanotubes on dendritic cells induce immune suppression upon pulmonary exposure", ACS NANO 26 5(7):5755-62, 2011

Selected Presentations (1990-2010):

1. Kagan V, Khan S, Swanson C, Shvedova A, Serbinova E, Packer L. Antioxidant action of thioctic and dihydrolipoic acid. Free Radical Biology 8 Medicine 9: 15, 1990, Oxidative Damage & Repair, Int. Med. of Society of Free Radical Research, Pasadena, 1990.

2. Shvedova AA, Kramarik JA, Keohavong P, Chumakov KM, Karol MH. Expression of TNF-α in vivo after cotton dust exposure. Cytokines and Lung Function, FASEB, Saxton's River, Vermont, 1993.

3. Shvedova AA, Kramarik JA, Keohavong P, Karol MH. Role of TNF-α in development of toxic alveolitis following inhalation of cotton dust. Society of Toxicology Annual Meeting, Dallas, 1994.

4. Shvedova AA, Stoyanovsky DA, Graham C, Kagan VE, Karol MH. The relationship between TNF-α, pro- and antioxidant factors in eosinophilic inflammation following allergic airway constriction in guinea pigs. American Lung Association/American Thoracic Society International Conference, Boston, 1994.

5. Shvedova AA, Menshikova EV, Ritov VB, Kagan VE, Karol MH. Allergic immune response activates calcium transport in murine lungs. Society of Toxicology Annual Meeting, Baltimore, 1995.

6. Shvedova AA, Karol MH, Kagan VE. Role of free radical intermediates in hypersensitivity responses induced by eugenol. International Congress of Toxicology – VII, Seattle, 1995.

7. Shvedova A, Osipov A, Karol M, Kagan V. Peroxidase/H_20_2 enhances hypersensitivity responses induced by eugenol: Inhibitory effects of an Antioxidant, Lipoic Acid. The Second International Meeting on Oxygen/Nitrogen Radicals and Cellular Injury, Durham, NC, 1997.

8. Shvedova AA, Tyurina YY, Tyurin VA, Gorbunov NV, Castranova V, McLaughlin M, Ojimba J, Gandley R, Kagan VE. Nitric Oxide but not nitrosothiols inhibit *tert*-butyl hydroperoxide/hemoglobin-induced oxidative stress and cytotoxicity. Society of Toxicology Annual Meeting, Seattle, WA, March 1-5, 1998.

9. Shvedova AA, Tyurina YY, Tyurin VA, Kommineni C, Castranova V, Kagan VE. Lipid peroxidation in human epidermal keratinocytes induced by redox-cycling of phenol. International Conference of Chemistry of Organic Peroxides. Moscow, Russia, June15-18, 1998.

10. Shvedova AA, Tyurina YY, Tyurin VA, Kommineni C, Castranova V, Kagan VE. Redox-cycling and cytotoxicity of phenol in keratinocytes: evidence for enhanced lipid and thiol oxidation and antioxidant depletion. III Int. Congress of Pathophysiology. Lahti, Finland, June 28-July 03, 1998.

11. Shvedova AA, Tyurina YY, Tyurin VA, Kommineni C, Jeffries BA, Castranova V, Kagan VE. Free Radical mechanism(s) of cytotoxicity of phenolic compounds to skin. IX Biennial Meeting International Society for Free Radical Research. September 7-11, 1998.

12. Shvedova AA, Tyurina YY, Tyurin VA, Jeffries B, Kommineni C, Castranova V, Kagan VE. Combination of phenolic compounds with arachidonic acid induces ⅓ futile thiol pumping and oxidative stress in epidermal human keratinocytes. Society of Toxicology Annual Meeting, New Orleans, March 2-8, 1999.

13. Al-Humadi NH, Kommineni C, Shvedova AA, Battelli L, Castranova V. Adverse responses to semi-synthetic metal working fluids in B6C3F1 Mice. Society of Toxicology Annual Meeting, New Orleans, March 2-8, 1999.

14. Shvedova AA, Kommineni C, Tyurina YY, Tyurin VA, Castranova V, Kagan VE. Toxic effects of phenolics to skin. Advances in the Biology and Treatment of the Skin, Piscataway, NJ. June 23 - 25, 1999.

15. Kommineni C, Kisin ER, Ebeling A, Al-Humadi N, Castranova V, Shvedova AA. Oxidative stress affects dermal exposure to metal working fluid in B6CF1 mice. 14-th Annual Conference, Foundations of Immunotoxicology, Morgantown, September 8-10, 1999.

16. Shvedova AA, Kisin ER, Kommineni C, Schwegler-Berry D, Tyurina YY, Tyurin VA, Castranova V, Kagan VE. Redox-cycling of occupational phenolic compounds induces oxidative stress and cytotoxicity in human epidermal keratinocytes. SFRR Meeting, Bio-Flavonoids & Polyphenols in Health and Diseases, December 2-5, Dinard, France, 1999.

17. Johnson E, Shvedova A, Kisin E, O'Callaghan JP, Kommineni C, Miller D. Vitamin E deficiency increases susceptibility of the BALB/C mice to MDMA-induced dopaminergic neurotoxicity. Society of Toxicology Annual Meeting, Philadelphia, March 19-23, 2000.

18. Kagan VE, Tyurina YY, Tyurin VA, Kawai K, Fabisiak JP, Kommineni C, Castranova V, Shvedova A. Oxidative stress in keratinocytes: role in apoptotic signaling. Society of Toxicology Annual Meeting, Philadelphia, March 19-23, 2000.

19. Kisin E, Kommineni C, Tyurina YY, Tyurin VA, Schwegler-Berry D, Castranova V, Kagan VE, Shvedova AA. Redox-cycling of phenols cause depletion of GSH, oxidative stress and cytotoxicity in normal human epidermal keratinocytes (NHEK). Society of Toxicology Annual Meeting, Philadelphia, March 19-23, 2000.

20. Kommineni C, Kisin ER, Al-Humadi N, Castranova V, Shvedova AA. Elevated oxidative stress in skin of B6CF1 mice affects dermal exposure to metal working fluid, Society of Toxicology Annual Meeting, Philadelphia, March 19-23, 2000.

21. Kisin E, Kommineni C, Tyurina YY, Tyurin VA, Schwegler-Berry D, Castranova V, Kagan VE, Shvedova A. Redox-cycling of phenols cause depletion of GSH, oxidative stress and cytotoxicity in normal human epidermal keratinocytes (NHEK). Society of Toxicology Annual Meeting, Philadelphia, March 19-23, 2000.

22. Shvedova A, Kisin E, Kommineni C, Mason RP, Kadiiska MB. Antioxidant balance and free radical generation in vitamin E deficient mice after dermal exposure to cumene hydroperoxide. Society of Toxicology Annual Meeting, Philadelphia, March 19-23, 2000.

23. Kagan VE, Shvedova AA. Phenolic antioxidants and pro-oxidants: are they really so different? Society of Toxicology Annual Meeting, San Francisco, March 25-29, 2001.

24. Smith C, Kisin E, Murray A, Castranova V, Kommineni C, Shvedova AA. Oxidative stress in the skin of vitamin E deficient mice exposed to metal working fluid. Society of Toxicology Annual Meeting, San Francisco, March 25-29, 2001.

25. Shvedova AA, Kisin E, Murray A, Castranova V, Kommineni C, Gunter MR. Phenol induced *in vivo* oxidative stress in skin: evidence for enhanced free radical generation, thiol oxidation and antioxidant depletion. Society of Toxicology Annual Meeting, San Francisco, March 25-29, 2001.

26. Al-Humadi NH, Shvedova A, Kommineni C. Used semi-synthetic metal working fluid (UMWF) dermal and systemic effects in B6C3F1 mice. Society of Toxicology Annual Meeting, San Francisco, March 25-29, 2001.

27. Shvedova AA, Tyurina YY, Tyurin VA, Kisin ER, Kikuchi Y, Quinn PJ, Kagan VE. Superoxide-induced reduction of coenzyme Q and its interaction with vitamin E synergistically protects human keratinocytes against oxidative stress. Society of Toxicology Annual Meeting, San Francisco, March 25-29, 2001.

28. Kagan VE, Kuzmenko AI, Tyurina YY, Kisin ER, Shvedova AA, Yalowich JC. Lipoate/Ascorbate-dependent recycling prevents myeloperoxidase-catalyzed oxidation of vitamin E homologues phenoxyl radical in live HL-60 cells. Society of Toxicology Annual Meeting, San Francisco, March 25-29, 2001.

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30. Shvedova AA, Kisin E, Kawai K, Kagan VE. Antioxidant Interactions and Biomarkers of Oxidative stress in skin and keratinocytes as they relate to apoptosis and aging. 9th Congress International Association of Biomedical Gerontology, Vancouver, B.C. Canada, June 27-30, 2001.

31. Shvedova AA, Kisin E, Murray A, Goldsmith T, Reynolds JS, Castranova V, Frazer DG, Kommineni C. Sub-chronic effects of metal working fluids on pulmonary functions in B6C3F1 mice: role of vitamin E. Society of Toxicology Annual Meeting, Nashville, March 17-21, 2002.

32. Shvedova AA, Kisin ER, Kommineni C, Castranova V, Mason RP, Kadiiska MB, Gunther MR. Cumene Hydroperoxide induces depletion of antioxidants and free radical formation in skin of vitamin E-deficient mice. The 13th Japanese Annual Vitamin E Meeting, Hiroshima, Japan, January 17-21, 2002.

33. Shvedova AA, Kisin ER, Murray AR, Kawai K, Castranova V, Howard PC. Oxidation biomarkers and antioxidant protection of skin against UV-irradiation and chemical exposure. Reactive Oxygen and Nitrogen Species: Diagnostic, Preventive, and Therapeutic Values. International Symposium, Russia, July 9-13, 2002.

34. Shvedova AA, Kisin ER, Murray AR, Mason RP, Kadiiska M, Castranova V, Gunther M. *In vivo* detection of vitamin E-dependent protection against free radical formation and oxidative stress in skin treated with cumene hydroperoxide. 9th Annual Meeting, Oxygen Society, San Antonio, TX, Nov. 20-24, 2002

35. Shvedova AA, Kisin ER, Kommineni C, Gunter MR, Rao MK, Castranova V. Inflammatory response and free radical formation in skin of B63CF1 mice with diminished levels of glutathione after phenol exposure. 42nd Ann. Meeting SOT, Salt Lake City, UT, March 9-13, 2003

36. Shvedova AA, Murray AR, Kisin ER, Kagan VE, Gandelsman VZ, Castranova V. Exposure of human bronchial epithelial cells to carbon nanotubes caused oxidative stress and cytotoxicity. Free Radicals and Oxidative Stress: Chemistry, Biochemistry and Pathophysiological Implications, SFRR Meeting, June 26-29, 2003, Ioannina, Greece

37. Shvedova AA, Tyurina YY, Kawai K, Tyurin VA, Castranova V, Kagan VE. Oxidative Phospholipid Signaling During Apoptosis in Keratinocytes. Clearance of Dying Cells by Phagocytes: Mechanisms & Consequences. Gordon Res. Con. New London, CT, Aug 3-8, 2003

38. Baron P., Maynard A, Shvedova AA, Kisin E., Castranova V. Preliminary studies of generation, exposure, and toxicity of carbon nanotubes. Am. Ass. Aeros Res. Meeting, October 20-24, 2003 Anaheim, CA

39. Xu, M, Kisin, A. R. Murray, C. Kommineni, V. Vallyathan, V. Castranova, A. A. Shvedova. Activation of AP-1 and Pro/Antioxidant Status in Skin of AP-1 Transgenic Mice During Cancer Promotion with Cumene Hydroperoxide. 43th Society of Toxicology meeting, Baltimore, March 21-25, 2004

40. Murray A, Kisin E, Kawai K, Kagan VE, Kommineni C, Castranova V, Shvedova AA. Role of Vitamin E in the Antioxidant Defense System of Skin in Young and Old Mice Exposed to Cumene Hydroperoxide, 43th Society of Toxicology meeting, Baltimore, March 21-25, 2004

41. Shvedova A.A. Pulmonary Toxicity of Carbon Nanotubes: From Cellular Responses to Animal Model. Nanoscale Materials and Public Health. Toxicology Forum. February 2-4, 2004, Washington DC

42. Shvedova A. A., Kisin E, Keshava N, Murray A.R, Gorelik O, Arepalli S, GandelsmanV.Z, Castranova V. Cytotoxic and genotoxic effects of single wall carbon nanotube exposure on human keratinocytes and bronchial epithelial cells, 227th ACS National Meeting, March 28-April 1, 2004, Anaheim, CA

43. Shvedova A.A. Pulmonary toxicity of carbon nanotubes. International congress on nanotechnology, San Francisco, CA, Nov 7-10, 2004

44. Shvedova A. A., Kisin E, Murray A.R, Gorelik O, Arepalli S, GandelsmanV.Z, Mercer B, Hubbs A, Kagan VE, Castranova V. Oxidative stress and pulmonary toxicity of carbon nanotubes.11TH Annual meeting SFRBM, November 17-21, 2004

45. Shvedova A.A. Pulmonary toxicity of carbon nanotube: what we know and what we do not know. National Nanotechnology Infrastructure Network (NNIN): Nanosafe: A workshop on Environmental Health and Safety in Nanotechnology Research, Atlanta, GA, Dec 1-3, 2004 http://snf.stanford.edu/Links/NanosafetyAgenda.html

46. Shvedova A.A. Pulmonary response to carbon nanotubes. 44th Society of Toxicology meeting, New Orleans, March 6-10, 2005

47. Mercer R., Scabilloni J, Kisin E, Gorelik O, Arepalli S, Murray AR, Castranova V, Shvedova AA Responses of lung parenchyma to carbon nanotubes. 44th Society of Toxicology meeting, New Orleans, March 6-10, 2005

48. Shvedova AA. Comparative toxicity of nanomaterials *in vivo* and *in vitro.* 229th American Chemical Society meeting, San Diego, CA, March 12-16, 2005

49. Shvedova AA. Unusual pulmonary response to carbon nanoparticles. First Annual Meeting of American Academy of Nanomedicine. Johns Hopkins University, MD, August 15-16, 2005

50. Shvedova AA. Pulmonary oxidative stress, inflammation, and fibrosis induced by single wall carbon nanotubes. 2nd International Symposium on Nanotechnology and Occupational Health, Minneapolis, MN, October 3-6, 2005

51. Shvedova AA. Pulmonary toxicity of carbon nanotubes. 8th International Conference on Mechanisms of Action of Inhaled Fibers, Particles, and Nanoparticles in Lung and Cardiovascular Diseases, October 25 – 28, 2005, Research Triangle Park, NC

52. Shvedova AA. Oxidative stress and pulmonary toxicity of carbon nanotubes. 1st International Meeting "Nanotoxicology: Biomedical Aspects", January 28 – February 1, 2006, Miami Beach, FL

53. Shvedova AA. Single-walled carbon nanotubes induced oxidative stress, acute inflammation and pulmonary fibrosis. 45th Society of Toxicology meeting, San Diego, March 5-9, 2006

54. Shvedova AA. Animal studies: pulmonary toxicity of nanomaterials/carbon nanotubes. Nobel Forum. Mini-Symposium on nanotoxicology: potential risks and safety assessment. Stockholm, Sweden, November 27, 2006

55. Shvedova AA and Kagan VE. Pulmonary Toxicity of Carbon Nanotubes. International Conference on Nanotechnology: Occupational and Environmental Health & Safety: Research to Practice, Cincinnati, OH, December 4-7, 2006

56. Murray AR, Kisin E, Kommineni C, Kagan VE, Castranova V, Shvedova AA. Single-Walled Carbon Nanotubes Induce Oxidative Stress and Inflammation in Skin. 46th Society of Toxicology Meeting, Charlotte, NC, March, 25-29, 2007

57. Shvedova AA, Kisin ER, A. Murray A, O. Gorelik O, Arepalli S, Castranova V, Young S-H, F. Gao F, Tyurina YY, Oury T, Kagan VE. Vitamin E deficiency enhanced pulmonary response and oxidative stress induced by single-walled carbon nanotubes in C57B6/L mice. 46th Society of Toxicology Meeting, Charlotte, NC, March, 25-29, 2007

58. Shvedova, AA. Pulmonary Toxicity of Singled-Walled Nanotubes. International Conference on Nanotoxicology, Venice, Italy, April,19-21, 2007

59. Shvedova AA. Pulmonary Toxicity of Nanoparticles. Experimental Biology Meeting, Washington DC, April 30-May 3, 2007

60. Shvedova AA, Kagan VE. Oxidative stress, pulmonary response and progressive fibrosis induced by exposure to singled-walled nanotubes. Vth International Conference on Peroxynitrate and Reactive Nitrogen Species, Montevideo, Uruguay, September 2-6, 2007.

61. Shvedova AA. Pulmonary Toxicity of Single-Walled Nanotubes in vivo: Mechanisms and Consequences. 3rd NASA-NIST Workshop on Nanotube Measurements, NIST, Gaithersburg, MD, USA, Sep 26-28, 2007

62. Shvedova AA. Inhalation Exposure to Single-Walled Carbon Nanotubes. European NaNOSH Conference –Nanotechnologies: A Critical Area in Occupational Safety and Health, Helsinki, Finland, 3–5 December 2007

63. Shvedova AA. Single-Walled Carbon Nanotubes: Are They Mutagenic? Mary Babb Randolph Cancer Center – National Institute of Occupational Safety and Health MBRCC - NIOSH Scientific Retreat in Cancer, Morgantown, West Virginia, February 12, 2008

64. Murray AR, Kisin ER, Leonard S, Kommineni C, Kagan VE, Castranova V, Shvedova AA. Induction of Oxidative Stress and Inflammation in the Skin Following Exposure to Single-Walled Carbon Nanotubes, Zurich, March 12-15, 2008

65. Shvedova AA. Kagan VE. Pulmonary Toxicity of Carbon Nanotubes in Vivo: Mechanisms, Regulations, and Reality. "Nanomaterials: Environmental Risks and Benefits and Emerging Consumer Products" Faro, Portugal, 27-30, April, 2008

66. Shvedova AA. "Carbon Nanotube in the Rodent Lungs: Recognition and Modulation of Toxicity". ATS, International Conference, Toronto, Canada, May 16-21, 2008

67. Shvedova AA Relevant to animal studies: Aspiration vs. Inhalation. Nanotoxicology, 2nd International meeting, Zurich, Switzerland, September 7-10, 2008

68. Shvedova A.A, Kisin ER, Murray AR, Kommineni C, Castranova V, Fadeel B, Kagan VE. NADPH oxidase regulates neutrophils and fibrosis in C57BL/6 mice exposed to carbon nanotubes. 48th Annual SOT Meeting, Baltimore, MD, March 15-19, 2009

69. Shvedova AA. Nanotoxicology *in Vivo*: Pulmonary Effects of Carbon Nanotubes. 6th Symposium on Nanomedicine, Royal Swedish Academy of Sciences, Stockholm, Sweden, September 9-11, 2009

70. Shvedova AA. Carbonaceous nanotubes in the lung: mechanisms of damage and consequences. 4th Symposium of the Center for Disease Biology and Integrative Medicine: 21st Century Advances in the Molecular Toxicology of Environmental Chemicals and Pathogenesis of Disease, Tokyo, Japan, October 26-27, 2009

71. Shvedova AA. Unsolicited Pulmonary Effects of Carbon Nanotubes: Genetic, Nutritional and Microbial Factors. 4th Oxygen/Nitrogen Radicals and Cellular Injury Meeting, NY Academy of Sciences, New York, USA, October 28-30, 2009

72. Shvedova AA. Toxicity of Carbon Nanotubes: from Mechanisms to Regulatory Consequences, Nanoscience and Technology in Chemistry, Health, Environment and Energy, International Conference, Agra, India, January 6-9, 2010

73. Shvedova AA. Oxidative Stress, Pulmonary Toxicity of Single walled Carbon Nanotubes *in vivo*: Relevance to Occupational Exposures. International Conference on Advances in Free Radicals Research, Natural Products, Antioxidants and Radioprotectors in Health/9th Annual Meeting of Society for Free Radical Research, Hyderabad, India, January 11-13, 2010

74. Shvedova AA. Toxicity of Carbon Nanotubes: Acute, Long-term effects and Mechanisms. 3rd Nanotoxicology Conference, Edinburgh, Scotland, June 2-4, 2010

75. Shvedova AA. Pulmonary Toxicity of Single-Walled Carbon Nanotubes: Inflammation, Fibrosis, Mutagenic Effects, 2nd Nobel Forum, Understanding the Interactions of Engineered Nanomaterials with Biological Systems, Stockholm, Sweden, October 23, 2010

76. Shvedova AA. Nano-composite and Nanotube European Meeting, Brussels, Belgium, April 6-7, 2011; Pulmonary Toxicity of Single-Walled Carbon Nanotubes: Inflammation, Fibrosis, and Mutagenic Effects

77. Shvedova AA. Assessment of quantitative changes in biomarkers of immune, inflammatory, and oxidative stress; 4th Annual Consortium Meeting Karolinska Institutet, Contract Agreement: NMP4-SL-2008-214281; Stockholm, Sweden, June 16, 2011

78. Shvedova AA. FP7-NANOMMUNE Workshop: Understanding Nano-Immuno-Interactions; Pulmonary Toxicity of Carbonaceous Nanomaterials versus Asbestos Fibers, Stockholm, Sweden, June 17, 2011)

79. Shvedova AA. Nanoparticles as an emerging environmental and occupational hazard: Does oxidative stress matter? Environmental stresses in biology and medicine. 2nd Int. Meeting, Siena, Italy, October 5-7, 2011

80.

81.

CURRICULUM VITAE

NAME: James W. Simpkins
DATE OF BIRTH: September 22, 1948
PLACE OF BIRTH: Port Clinton, Ohio
NATIONALITY: American
SEX: Male
FAMILY STATUS: Three children (Chris, Gretchen and Alexea)

PRESENT ADDRESS: Department of Physiology & Pharmacology
Professor of Physiology & Pharmacology
The Highland Chair for Stroke Neurology, Department of Neurology
Director, Center for Basic and Translational Stroke Research
Robert C. Byrd Health Sciences Center
School of Medicine
PO Box 9229
BMRC Room 105
West Virginia University
Morgantown, WV 26506-9229
Phone 304-293-7430
E-mail jwsimpkins@hsc.wvu.edu

EDUCATION:

University of Toledo	1971	B.S.	Biology
University of Toledo	1974	M.S.	Biology (C. J. V. Smith)
Michigan State University	1977	Ph.D.	Physiology (J. Meites)

POSITIONS HELD

Teaching Assistant, Department of Biology, University of Toledo, Toledo, Ohio, September 1971 to June 1974.

Technician, Department of Physiology, Medical College of Ohio at Toledo, Ohio, June 1972 to September 1974.

Instructor, Science Department, Lansing Community College, Lansing Michigan, January 1975 to September 1977.

Research Assistant, Department of Physiology, Michigan State University, East Lansing, Michigan, September 1974 to September 1977.

Assistant Professor, Department of Pharmaceutical Biology, University of Florida, Gainesville, Florida, September 1977 to July 1982.

Associate Professor, Department of Pharmacodynamics, University of Florida, Gainesville, Florida, July 1982 to August 1986.

Professor, Department of Pharmacodynamics, University of Florida, August 1986 to 2000.

Associate Chairman, Department of Pharmacodynamics, University of Florida, Gainesville, Florida, November 1984 to June 1986.

Chairman, Department of Pharmacodynamics, University of Florida, July 1986 to January 1988.
Assistant Dean for Research and Graduate Studies, College of Pharmacy, University of Florida, January 1988 to January 1989.

Associate Dean for Research and Graduate Studies, College of Pharmacy, University of Florida, January 1989 to February 1991.

Co-Director, Center for the Neurobiology of Aging, University of Florida, July 1988 to 2000

Acting Chairman, Department of Pharmaceutics, College of Pharmacy, University of Florida, July 1995 to December 1996.

Chairman, Department of Pharmaceutics, College of Pharmacy, University of Florida
January 1997 to 1999.

Professor, Department of Pharmacology and Therapeutics, College of Medicine, University of Florida, February 1996 to June 2000.

Frank Duckworth Professor of Drug Discovery, College of Pharmacy, University of Florida, August 1996 to June 2000.

Professor, Department of Neurological Surgery, College of Medicine, University of Florida, June 1999 to June 2000.

Professor and Chairman, Department of Pharmacology & Neuroscience, University of North Texas Health Science Center at Fort Worth, Fort Worth, Texas, July 2000 to 2010.

Founder and Executive Director, Institute for Aging and Alzheimer's Disease Research, University of North Texas Health Science Center at Fort Worth, Fort Worth, Texas, July 2000 to 2012

Professor of Physiology & Pharmacology, West Virginia University, 2012 to Present.

Founding Director, Center for Basic and Translational Stroke Research, West Virginia University, 2012 to Present.

President, International Society for Aging and Disease, 2012 to 2016.

Professor and Barbara B. Highland Stroke Chair, Department of Neurology, School of Medicine, West Virginia University, 2015 to Present

MAJOR RESEARCH INTERESTS

Assessment of the potency, efficacy and mechanisms of action for the neuroprotective effects of estratrienes, of which 17 β-estradiol is a member. Determination of the role of estrogens in the therapy of Alzheimer's disease, stroke and other neurodegenerative conditions. Determination of the structure-activity relationship of steroids in neuroprotection. Determination of the uses of estrogens in the treatment of non-neuronal disease that have a cytodegenerative component. Role of mitochondria in acute and chronic neurodegenerations and determination of the role of microRNAs in mitochondrial energy production.

AWARDS

Outstanding Graduate Student Award from the Graduate Affairs Committee, Department of Physiology, Michigan State University, East Lansing, MI, 1977.

Research Achievement Award, University of Florida, 1990.

Frank Duckworth Professor of Drug Discovery, College of Pharmacy, University of Florida, August 1996.

Professional Excellence Program Award, University of Florida, 1998.

The Benjamin L. Cohen Award for Outstanding Research, 2001-2002, University of North Texas Health Science Center at Fort Worth.

Health Care Hero, Fort Worth Business Press, 2005.

Names to the "Thirteen Most Brilliant Mind" in Tarrant County, TX, 2008.

President's Award for Excellence in Research-Gold form the UNTHSC, 2012.

Harman Award for Life-Time Achievement in Aging Research, American Aging Association, 2012.

Executive Committee-Dana Alliance for Brain Initiatives, 2013.

Dean's Excellence Award for Research, West Virginia College of Medicine, 2014.

The 2014-2015 Benedum Distinguished Scholar Award in the category of Biosciences and Health Sciences from the Benedum Foundation.

Barbara B. Highland Stroke Chair Of Stroke Neurology, Department of Neurology, School of Medicine, West Virginia University, 2015 to Present

Clinical and Translational Research (CTR) Awardee, National IDeA Symposium of Biomedical Research, 2016

Vice President's Mentoring Award, West Virginia University Health Sciences Center, 2018

SOCIETY MEMBERSHIP

Endocrine Society
American Physiological Society
Sigma Xi
American Association for the Advancement of Science
Society for Neuroscience
The Gerontological Society of America
American Association of Pharmaceutical Scientists
Society for the Study of Ingestive Behavior
American Association of Colleges of Pharmacy
Southeastern Pharmacological Society
American Chemical Society

Editorial Board Appointments

2012-Present Aging and Disease
2015-Present Journal of Neuroinflammation
2019-Present Journal of Alzheimer's Disease

BOOKS EDITED

Meyer, E., **J.W. Simpkins** and J. Yamamoto, Editors, Novel Procedures for the Treatment of Alzheimer's Disease, Plenum Press, 1990, 386 pages.

Meyer, E.M., **J.W. Simpkins**, J. Yamamoto and F.T. Crews, Editors, The Treatment of Dementia: A New Generation of Progress, Plenum Press, New York, 1992, 533 pages.

Singh, M. and **J. W. Simpkins**, Editors, The Future of Estrogen and Hormone Therapy in Postmenopausal Women: What Basic Science and Clinical Studies Teach Us, New York Academy of Science, 2005, 256 pages.

PUBLICATIONS (Abstracts Not Included)

1. **Simpkins, J.W.** and C.J.V. Smith. The temporal interaction of corticosterone and prolactin in affecting liver lipid metabolism of the chick. Poultry Science 55:728-734, 1976.
2. **Simpkins, J.W.,** J.F. Bruni, R.J. Miduszewski and J. Meites. Serum and pituitary TSH and response to TRH in developing male and female rats. Endocrinology 98, 1365-1369, 1976.
3. Mueller, G.P., **J.W. Simpkins**, J. Meites and K.E. Moore. Differential effects of dopamine agonists and haloperidol on release on prolactin, thyroid stimulating hormone, growth hormone and luteinizing hormone in rats. Neuroendocrinology 20, 121-135, 1976.

4. Grandison, L., J.P. Adivs, C.A. Hodson, **J.W. Simpkins** and J. Meites. Effects of prolactin on post-castration LH release. IRCS Medical Science 4, 427, 1976.
5. Gudelsky, G.A., **J.W. Simpkins**, G.P. Mueller, J. Meites and K.E. Moore. Selective effect of prolactin on dopamine turnover in the hypothalamus and on serum LH and FSH. Neuroendocrinology 22, 206-215, 1976.
6. **Simpkins, J.W**., G.P. Mueller, H.H. Huang and J. Meites. Evidence for depressed catecholamine and enhanced serotonin metabolism in aging male rats: possible relation to gonadotropin secretion. Endocrinology 100, 1672-1678, 1977.
7. Meites, J., **J.W. Simpkins**, J.F. Bruni and J.P. Advis. Role of biogenic amines in control of anterior pituitary hormones. IRCS Medical Science 5, 1-7, 1977.
8. Chen, H.T., **J.W. Simpkins**, G.P. Mueller and J. Meites. Effects of pargyline on hypothalamic biogenic amines and serum prolactin, LH and TSH in male rats. Life Science 21, 533-542, 1977.
9. Meites, J., H.H. Huang and **J.W. Simpkins**. Recent studies on neuroendocrine control of reproductive senescence in rats. In, The Aging Reproductive System, Ed. E.L. Schneider, Raven Press, New York, pp. 213-235, 1977.
10. Turner, J.W. and **J.W. Simpkins**. Effect of hypothalamic lesions and androgen on plasma LH in castrated male rat. Neuroendocrinology 24, 80-89, 1977.
11. Grandison, L., C.A. Hodson, H.T. Chen, J.P. Advis, **J.W. Simpkins** and J. Meites. Inhibition by prolactin of post-castration rise in LH. Neuroendocrinology 23, 312-322, 1977.
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Amyloid-β Causes Mitochondrial Dysfunction via a Ca^{2+}-Driven Upregulation of Oxidative Phosphorylation and Superoxide Production in Cerebrovascular Endothelial Cells. Journal of Alzheimer's Disease, In Press, 2020.

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BOOK REVIEWS

Simpkins, J.W. Review of Drug Discovery Technologies, Ed. by C.R. Clark and W.N. Moos, J. Biopharmaceut. Sci. 1:305-307, 1990.

Simpkins, J.W. Review of Drug Discovery: A Casebook and Analysis by R.A. Maxwell and S.B. Eckhardt, J. Biopharmaceutical Sci. 2:379-380, 1991.

EXTRAMURAL GRANT SUPPORT

Past Support:

AG02021 "Catecholamines and Reproductive Aging" $135,934/3 years, PI is **J.W. Simpkins** (30%), 1980-1983.

HD14075 "Placental Transport of Doxepin: Subclinical Effects" $129,000/2 years, Co-PI is **J.W. Simpkins** (15%), 1980-1982.

HD08634 "Ovarian Steroids in Gonadotropin Release Mechanism" $178,402/3 years, PI is P.S. Kalra, **J.W. Simpkins** is Associate Investigator (15%), 1979-1982.

HD11362 "Steroids and Hypothalamic Interactions in Male Rats" $193,290/3 years, PI is P.S. Kalra, **J.W. Simpkins** is Associate Investigator (15%), 1981-1984.

AG02021 "Catecholamines and Reproductive Aging" $225,000/3 years, PI is **J.W. Simpkins** (30%), 1983-1986.

HD14075 "Placental Transport of Lipid Soluble Drugs Subclinical Effects" $253,265/3 years, PI is **J.W. Simpkins** (15%), 1982-1985.

HD18133 "Animal Model for Mechanism of Menopausal Hot Flush" $130,000/3 years, Co-PI is **J.W. Simpkins** (15%), 1983-1986.

RB10862 "Pineal-Hypothalamic Role in Seasonal Reproduction" $40,507/year, PI is D. Sharp, **J.W. Simpkins** is (5%), 1984-1987.

HD14075 "Placental Transport of Lipid Soluble Drugs: Subclinical Effects" $304,755/3 years, PI is **J.W. Simpkins** (15%), 1985-1988.

HD18133 "Animal Model for Mechanism of the Menopausal Hot Flush" $305,904/3 years, PI is M.J. Katovich, **J.W. Simpkins** is (10%), 1986-1990, 1991-1995.

HD22540 "Brain-Specific Gonadal Steroid Delivery Systems" $325,000 TDC, PI is **J.W. Simpkins** (10%), 1987-1990, 1992-1995.

AG02021 "Catecholamines and Reproductive Aging" $400,189 TDC, PI is **J.W. Simpkins** (25%), 1987-1991.

GM41157 "Small Instrumentation Program" $11,925, PI is **J.W. Simpkins** (0%), 1988-1989, 1989-1990.

RR05573 "Biomedical Research Support" $49,609, PI is **J.W. Simpkins** (0%), 1988-1989, 1989-1990, 1990-1991.

NS07333 "Training in Drug Design and Delivery for Neurological Diseases" $292,352/5 years, PI is **J.W. Simpkins** (10%), 1990-1995.

AG00196 "Training in the Neurobiology of Aging" $322,521/5 years, **J.W. Simpkins** is Co-PI, 1989-1994.

RR05704 "Quantitative Densitometry Instrument" $66,800, **J.W. Simpkins** is PI, 1990-1991.

P01 AG10485 "Discovery of Novel Drugs for Alzheimer's Disease" $3,500,000, **J.W. Simpkins** is PI, 1991-1996.

"Neuroprotective Effects of Estrogens and Related Steroids" $110,000, Apollo Genetics, Inc., **J.W. Simpkins** is PI, 11-1-93 to 10-31-96.

P01 AG10485 "Discovery of Novel Drugs for Alzheimer's Disease" $2,800,000, **J.W. Simpkins** is PI, 1996-1999

P01 AG10485 "Discovery of Novel Drugs for Alzheimer's Disease" $5,376,546, **J.W. Simpkins** is PI, 1999-2004.

"Neuroprotective Effects of Estrogens and Related Steroids" $210,000, Apollo Genetics, Inc., **J.W. Simpkins** is PI, 11-1-97 to 10-31-99.

"Neuroprotective Effects of Estrogens and Related Steroids" $110,000, Apollo Genetics, Inc., **J.W. Simpkins** is PI, 1999-2001.

P01 AG10485-S1 "Discovery of Novel Drugs for Alzheimer's Disease" $195,928, **J.W. Simpkins** is PI, 1993-1996 (Animal Care and Behavioral Assessment Core).

AG00196 "Training in the Neurobiology of Aging" $80,389/year, **J.W. Simpkins** is Co-PI, 1994-1999.

PO1 AG10485 "Discovery of Novel Drugs for Alzheimer's Disease" $2,666,710, **J.W. Simpkins** is PI, 1996-1999.

"Neuroprotective Effects of Estrogens and Related Steroids" $300,000, Apollo BioPharmaceutics, Inc.,**J.W. Simpkins** is PI, 1997 to 1999.

"Neuroprotective Effects of Estrogens and Related Steroids" $170,000/year. Apollo BioPharmaceutics, Inc., **J.W. Simpkins** is PI, 1999-2001.

US Army "Neuroprotection from Brain Injury by Novel Estrogens" $475,170, **J.W. Simpkins** is PI, 1999-2003.

AG00196 "Training in the Neurobiology of Aging" $135,000/year, **J.W. Simpkins** is Co-PI, 1999-2004.

"Neuroprotective Effects of Estrogens and Related Steroids" $170,000/year. Apollo BioPharmaceutics, Inc., **J.W. Simpkins** is PI, 2001-2002.

"Neuroprotective Effects of Estrogens and Related Steroids" $170,000/year. MitoKor, Inc., **J.W. Simpkins** is PI, 2002-2003.

NIH HL071684 Mallet (PI) "Pyruvate-enhanced cardiopulmonary resuscitation" **J.W. Simpkins** Co-I September 1, 2002 to August 31, 2007, $250,000

AG19595-01-A2, Watson (PI) "Mechanism of estrogen-induced neuroprotection" **J.W. Simpkins** Co-I September 1, 2002 to August 31, 2005, $150,000/yr

Texas Higher Education Coordinating Board, Advance Technology Program "Development of Novel estrogens for Brain Protection" **J. W. Simpkins** PI January 1, 2004 to December 31, 2005 $100,000/yr

"PO1 AG10485 "Discovery of Novel Drugs for Alzheimer's Disease" $8,000,000, **J.W. Simpkins** is PI, 2005-2010.

T32 AG020494-01 "Predoctoral Training in the Neurobiology of Aging", **J.W. Simpkins** (PI) 10% May 1, 2002 to April 30, 2007, $150,000/yr

NS44765-01, Prokai (PI) "The role of Quinols in estrogen neuroprotection" **J.W. Simpkins** Co-I January1, 2003 to December 31, 2008, $250,000/yr

AG 022550-01, **J. W. Simpkins** (PI) "Mechanisms of cognitive decline during Aging 30% 2008-2013, $1,623,933/yr

R01 AA013864-01, **J. W. Simpkins** (PI) "Estrogens for Alcoholism and its Neurological Consequences" September 1, 2003 to August 31, 2008, $225,000/yr

"PO1 AG10485 "Discovery of Novel Drugs for Alzheimer's Disease" $7,500,000, **J.W. Simpkins** is PI, 2004-2011.

Grant Number: W81XWH-10-2-0003 $174,249.30 per year
Title: Use of Estrogens as Neuroprotectant for the Eye
Agency: Department of Defense
PI: J.W. Simpkins

Grant Number: P20 MD001633 $257,000.00
Title: Role of Ethnicity in the Expression of Hot Flushes
Agency: NIH
PI: J.W. Simpkins

Title: Neuroprotective effects of pyruvant on ischemic stroke $130,000
Sponsor: American Heart Association
PI: ShaoHua Yang
Consultant: J.W. Simpkins

Grant Number: AA015982
Title: Effects of Age on Ethanol Withdrawal Toxicity: Mechanisms and Therapy $1,764,500
Sponsor: NIAAA
PI: Marianna Jung
Co-I: James W. Simpkins

Title: Assessment of the Effects of Nestle Diets on Stroke Outcome in Rats (Project IV) $800,000
Spon**s**or: Nestle's
PI: ShaoHua Yang
Co-I: James W. Simpkins

Grant Number: AG 10485, Project 4
Title: System Gene Delivery for Alzheimer's Disease $750,000
Sponsor: NIA
PI: Jeffrey Hughes (UF)
JWS is nominative PI

Grant Number: NS05285
Title: Computational Optical Tomography for Anti-Stroke Therapy $1,665,011
Agency: NINDS
PI: Henli Liu (UTA)
Co-I: J.W. Simpkins

Grant Number R01 AG039389-01 $624,538 2012-2014
Agency: NIA
Title: A Blood-Based Screening Tool for Alzheimer's Disease

Co-I: J W Simpkins (PI Sid O'Bryant)

Grant Number: R01 AA015982/Marianna Jung, PI
Agency: NIAAA
Title: Effects of Age on Ethanol Withdrawal Toxicity: Mechanisms and Therapy
Co-I: James W. Simpkins

Grant Number: R01 AA015982/Marianna Jung, PI
Agency: NIAAA
Title: Effects of Age on Ethanol Withdrawal Toxicity: Mechanisms and Therapy
Co-I: James W. Simpkins

Grant Number: AG020494
Title: Predoctoral Training in the Neurobiology of Aging $263,000/yr
Sponsor: NIA
PI: James W. Simpkins

(PI Simpkins) 11/01/14 to 05/01/15 0.5 mo
Nestle Purina $75,726
Effects of Nestle-Purina Diets on Serum MicroRNAs Following Ischemic Stroke in Rats

(PI Simpkins) 01/01/14 to 06/01/14 0.5 mo
Nestle Purina $53,242
Assessment of the Mitochondrial Energetic effects of MCT and LCFA in a HT-22 Neuronal Cell Line
The major goal of this project is to determine the effects of mid-chain fatty acids on mitochondrial energetics in a neuronal cell line.

NIH/NIA P01 AG027956 (PI Singh) 12/01/20/2012 –to 11/30/2017

Project 2 PI: Novel mechanistic targets of gonadal hormones in the brain

NIH/NIA R01 NS079792 (PI L-Y Yan) 04/01013 to 03/031/18

Dietary targeting of dihydrolipoamide dehydrogenase for stroke tolerance.

CoM Seed Grant for Rodent Behavioral Core Enhancement entitled "The Health Science Center Rodent Behavioral Core: A new facility for the optimized assessment of functional outcomes" Funded, April 2014.

PI Simpkins 10/01/14 to 3/31/16
WVCTSI $100,000
Multi-Investigator Application entitled "*Intermittent Infection/Inflammation and Cognitive Aging*"

Current Support:

T32 GM081741, Research Training Program in Behavioral and Biomedical Sciences, (Co-PI, Simpkins)- 2019-2024.

P20 GM109098, West Virginia Stroke CoBRE (PI JW Simpkins) (NCE)

T32 AG052375 Pre-doctoral Training in Stroke and its Co-Morbidities 6/01/17 to 5/31/22
JW Simpkins PD

Nestle-Purina, Assessment of Novel Nestlé-Purina® Dietary Interventions to Promote Myelin Development and Enhance Locomotor, Coordination, and Cognitive Behavioral Outcomes
(JWS Co-PI)

Brain Health Project Engler-Chiurazzi (PI)01/01/1912/31/19)
A 2-D Culture System for the Assessment of CogniFemme and CogniHomme Nutraceutical Blends on Aβ Production.
Role: Co-I

Foundation Grants Received

Garvey Texas Foundation -$50,000

JES Edwards Foundation-$15,000

Scott Foundation-$2,500

Gifts

Syngenta-$33,000

Rainwater Charitable Foundation -$25,000

Nestle-Purina $40,000 (2015-2017)

Lewis Foundation $65,000 (2017-2018)

Lewis Foundation $70,000 (2018-2019)

Lewis Foundation $70,000 (2019-2020 - Expected)

INTRAMURAL GRANT SUPPORT

"Aging and Hypertension" seed grant from the Division of Sponsored Research, University of Florida, 6-1-78 to 5-31-79, PI is J.W. Simpkins, $4,000.

"Aging and Gonadotropin Secretion" seed grant from the Division of Sponsored Research, University of Florida, 6-1-79 to 5-3-80, PI is J.W. Simpkins, $2,000.

ACS-79-074 "Dopamine and Development of Prolactin Secreting Pituitary Adenomas" from the American Cancer Society Grant to the University of Florida, 6-1-79 to 5-31-80, PI is J.W. Simpkins, $3,579.

PATENTS ISSUED

N. Bodor, K.S. Estes and **J.W. Simpkins**. U.S. Patent 4,617,298 "Methods and Compositions for Weight Control." issued October 14, 1986.

J.W. Simpkins and W.C. Stern. "Method for Eliciting Anxiolysis." U.S. Patent No. 4,786,647, issued Nov. 22, 1988.

W.R. Anderson, N. Bodor and **J.W. Simpkins**, "Methods for Treating Male Sexual Dysfunction." U.S. Patent No. 4,863,911, issued September 5, 1989.

W.R. Anderson, N. Bodor and **J.W. Simpkins**. "Method for Treating Male Sexual Dysfunction." Australian Patent No. 76308/87, Issued April 2, 1991.

W.R. Anderson, N. Bodor and **J.W. Simpkins**, "Method of Testing Male Sexual Dysfunction." Canadian Patent No. 1,300,020, issued May 5, 1992.

W.R. Anderson, N. Bodor and **J.W. Simpkins**. "Method for Treating Male Sexual Dysfunction." European Patent No. 0256668, Issued November 4, 1992.

W.R. Anderson, N. Bodor and **J.W. Simpkins**. "Methods for Treating Sexual Dysfunction." Irish Patent No. 61350, Issued October 21, 1994.

W.R. Anderson, N. Bodor and **J.W. Simpkins**. "Methods for Treating Sexual Dysfunction." German Patent No. 3783468, Issued March 18, 1993.

J.W. Simpkins, M. Singh and J. Bishop. "Methods for Neuroprotection." U.S. Patent 5,554601, Issued September 10, 1996.

J. W. Simpkins and J. Bishop. "Method for Diagnosing Estrogen Responsiveness" U.S. Patent 5,550,029, Issued August 27, 1996.

W.R. Anderson, N. Bodor and **J.W. Simpkins**. "Method for Treating Male Sexual Dysfunction." Japan Patent No. 2646568, Issued May 9, 1997.

James W. Simpkins, "Uses of estrogen compositions for the treatment of disease", US Patent 5,843,934, issued December 1, 1998

James W. Simpkins, "Methods of Treatment of Ischemic Damage", US Patent 5,877,169

James W. Simpkins, P.S. Green and K.E. Gridley, "Methods and compositions to enhance the cytoprotective effects of polycyclic phenolic compounds through the synergistic interaction with antioxidants" US Patent 5,972,923, Issued October 26, 1999.

Simpkins, J.W., K. D. Gordon, R Leonard, Testosterone compounds and use for the protection of neurons, U.S. Patent Number 6,172,088, issued January 9, 2001.

J.W. Simpkins, K. Gordon and P.S. Green, "Neuroprotective effects of polyphenolic compounds" U. S. Patent 6,197,833, issued March 6, 2001.

J.W. Simpkins, P.S. Green and K. E. Gridley, "Preservation of tissue during removal, storage and implantation", U.S. Patent 6,207,658, issued March 27, 2001.

Simpkins, J.W., P. S. Green, Cytoprotective effects of polycyclic phenolic compounds, U.S. Patent Number, 6,319,914, Issued November 20, 2001.

J. W. Simpkins, Katherine Gordon and R. Leonard, "Methods of Prevention and Treatment of Ischemic Damage by Subcutaneous Injection. US Patent Number 6,326,365, issued Dec 4, 2001.

J.W. Simpkins, "Methods of Prevention and Treatment of Ischemic Damage by Intravenous Injection" US Patent 6,339,078, issued January 15, 2002.

Simpkins, J.W. and D.F. Covey, Methods and treatment of ischemic damage, U.S. Patent No. 6,350,739, Issued Feb., 26, 2002.

Simpkins, J.W., P. Green and K.E. Gridley, Compositions to enhance the cytoprotective effects of polycyclic Phenol Compounds through the Synergistic Interaction with Anti-Oxidants, European Patent No. 0977578, Issued March 31, 2004.

Prokai, L., K. Prokai and **J. W. Simpkins**, Steroidal quinols as prodrugs of antioxidants, WO03/084978 A1, Issued, March, 2005.

Prokai, L., K. Prokai and **J. W. Simpkins**, Steroidal quinols and their use for antioxidant therapy, U.S. Patent Number 7,026,306, Issues April 11, 2006.

Laszlo Prokai, K. Prokai and **James W. Simpkins**, Steroidal Quinols and there use for estrogen replacement therapy. U.S. Patent Number 7,300,926, Issued November 27, 2007.

Prokai, L., Prokai, K., **J. W. Simpkins** and N. Agarwal, U.S. Patent Number 7,572,781 "Prodrugs for Use as Ophthalmic Agents, Issues August 11, 2009.

PATENTS FILED

N. Bodor, K.S. Estes and **J.W. Simpkins**. "Compositions for Weight Control," U.S. Patent Application Serial No. 881,381.

J.W. Simpkins, and W.C. Stern. "Methods and Composition for Reducing Injection Site Toxicity," U.S. Patent Office Serial No. 212,316, filed June 12, 1988.

J.W. Simpkins. "Prevention of Drug Extravasation Toxicity," U.S. Patent Office, filed October 12, 1988.

J. W. Simpkins. "Estrogen Compositions and Methods for Neuroprotection" U.S. Patent Application No.: 08/318,042, Filed US Patent Office**,** October 4, 1994

J.W. Simpkins. "A Method and Kit for Diagnosing Responsiveness to Hormone Therapy" U.S. Patent Serial No. 649,422, Filed US Patent Office, May 16, 1996

J. W. Simpkins, P.S. Green and K. Gordon. "Neuroprotective Effects of Polycyclic Phenolic Compounds" (*) U.S. Patent Serial No. 685,574, Filed July 24, 1996.

PCT "Neuroprotective Effects of Polycyclic Phenolic Compounds" PCT/US96/12146 (Designated AU, CA, JP, KR&EP) Filed July 24, 1996.

J.W. Simpkins. "Methods of Prevention and Treatment of Ischemic Damage" U.S. Patent No. 749,703, Filed US Patent Office, November 15, 1996.

J. W. Simpkins, P.S. Green, and K.E. Gridley. "Methods and Compositions to Enhance the Cytoprotective Effects of Polycyclic Phenolic compounds" U.S. Patent Serial No. 035,537, Filed, January 16, 1997.

J. W. Simpkins, P.S. Green, and K.E. Gridley. "The Preservation of Tissue During Removal, Storage & Implantation" U.S. Patent Serial No. 782,883, Filed US Patent Office, January 10, 1997.

PCT "The Preservation of Tissue During Removal, Storage & Implantation" PCT/00482 (Designated AU, CA, JP, KR&EP) Filed US Patent Office, January 10, 1997.

J. W. Simpkins, "Methods of Prevention and Treatment of Ischemic Damage", Filed US Patent Office, October 27, 1998.

J. W. Simpkins, Katherine Gordon and R. Leonard, Testosterone compounds and use fir the protection of neurons. Filed US Patent Office, November 24, 1998.

J. W. Simpkins, Katherine Gordon and Pattie S. Green, " The Cytoprotective effect of Compounds having a Polycyclic Phenolic A Ring, Filed US Patent Office, June 3, 1999.

J. W. Simpkins, Katherine Gordon and Pattie S. Green, " The Cytoprotective effect of Compounds having a Polycyclic Phenolic A Ring, Filed US Patent Office, July 12, 1999.

J. W. Simpkins, Katherine Gordon and R. Leonard, "Methods of Prevention and Treatment of Ischemic Damage", Filed US Patent Office, July 20, 1999.

J. W. Simpkins, Katherine Gordon and R. Leonard, "Methods of Prevention and Treatment of Ischemic Damage", Filed US Patent Office, July 20, 1999 (this is a different patent from the above).

J. W. Simpkins and D. Covey, "Methods of Prevention and Treatment of Ischemic Damage", Filed US Patent Office, August 11, 1999.

Prokai, L. and **J. W. Simpkins**, Alkyl ether modified polyphenolic compounds having a terminal phenol and uses for protection of cells, Filed U.S. Patent and Trademark Office, June 27, 2001.

Simpkins, J. W. and P. Aoun, Neuroprotective effects of PPARγ agonists against cellular oxidative insults, Filed May 9, 2003.

Ratka A. and **J. W. Simpkins**, System, method and apparatus for assessing menopausal or hysterectomy symptoms, filed with US Patent Office 12-6-05

Schetz, J, **J.W. Simpkins** and A. Jeffrey, Butyrophenones and Sigma-1 antagonists protect against oxidative-stress, World Intellectual Property Organization, Publication date, May 11, 2006, WO 2006/05011 A2.

Schetz, J, **J.W. Simpkins** and A. Jeffrey, Butyrophenones and Sigma-1 antagonists protect against oxidative-stress, U.S. Patent Application no. US 2006/01060464 A1, Publication date, May 18, 2006.

Training

Past Faculty Mentoring (and grant support) and Research Area

Meharvan Singh (P01 director) - Aging and Alzheimer's disease
Peter Koulen (R01 and P01 component) - Aging and Retinal Function
David Watson (R01) – Aging and Signal Transduction
ShaoHua Yang (multiple R01s) – Mechanism of Stroke Damage
Nathalie Sumien (P01 component) – Cognitive Decline in Aging
Liang-Jun Yan (R01) – Anti-oxidant Therapy for Aging-Related Cognitive Decline
Heather Bimonte-Nelson (R01) – Hormones and Cognitive Aging
Michael Katovich (R01) – Cerebrovascular Function in Disease
Michael Meldrum (R01) – Cardiovascular Function
William Millard (R01) – Growth Hormone and Aging
Marianna Jung (R01) – Alcohol Induced Neurodegeneration
Jane Wigginton (R01) – Estrogen and Brain Trauma
Phoebe Stapleton (K99/R00) – Environmental Toxins and Developmental Cardiovascular Dysfunction
Miranda Reed (R25) – Tau and Stroke Outcome
Taura Barr (Stroke CoBRE Component) – Biomarkers for Acute Stroke
Paola Pergami, (WVU, Department of Pediatrics, CTSI Scholar) – Mechanism of Neonatal Ischemic Brain Injury
Stephanie Frisbee (Stroke CoBRE Component) – Perfluoroalkyls and Stroke in Human Subjects
Joshua Gatson (UT Southwestern Medical School) – Estrogens and Blunt Trauma to the Brain
Kayla Green (TCU, Department of Chemistry) – Development of Novel Neuroprotective Compounds

Karen Baskerville (Lincoln University) – Cerebrovascular Function and Blood Pressure Regulation
Rabia Quisar (WVU Department of Neurosurgery)

Current Faculty Mentoring (Program)

Paul Chantler (Stroke CoBRE Component) – Metabolic Syndrome and Cerebrovascular Dysfunction
Sergiy Yakovenko (Stroke CoBRE Component) – (R03) -Cerebral Control of Motor Function
Valeriya Gritsenko (Stroke CoBRE Component) – Cerebral Control of Limb Function
Sophie Ren (Stroke CoBRE Component) – Mitochondrial Dysfunction and Blood-Brain Barrier Opening
Mohammad Nayeem (Department of Pharmaceutical Sciences) - (R01) –Cardiovascular Signaling Mechanisms.
Jane Wigginton (UT Southwestern Medical School) - Estrogen and Brain Trauma in Human Subjects
Kebrenten Manaya (Howard University Medical School) – Estrogens and Hippocampal Cell Loss
Candice Brown (WVU Department of Neurobiology and Anatomy) – Gender effects on Sepsis
Khumar Huseynova (WVU Department of Surgery, CTSI Scholar) – Vascular Surgery Methods and Outcomes
Gordon Meares (R01) WVU Department of Immunology and Microbiology
Shuo Wang (WVU Department of Bioengineering)
Amelia Adcock (WVU Department of Neurology)
Elizabeth Engler-Chiurazzi (K01) (WVU Department of Neuroscience)
Sophie Ren (American Heart Association Grant) (WVU Department of Neuroscience)
Whitney Warton (Emery University) – (R01) – Estrogens and sleep
Hunter Zhang (SBIT – Phase II) Department of Behavioral Science, WVU

Dissertation Supervisor, Degree, Month and Year Awarded and Research Area

Kerry S. Estes - Ph.D. Awarded, Dec. 1982 – Estrogens and Brain Aging
Steven M. Gabriel - Ph.D. Awarded, Dec. 1984 – Estrogens and Brain Function
I.-Cheng Song - Ph.D. Awarded, Dec. 1984 – Animal Model for Hot Flashes
Lee Ann Berglund - Ph.D. Awarded, May 1989 – Estrogens and Brain Metabolism
Mohamad Rahimy - Ph.D. Awarded, May 1990 – Estrogen Pharmacology
Jean Bishop-Sparks - M.S. Awarded, May 1993 - Estrogens and Brain Metabolism
Sonny Singh - Ph.D. Awarded, May 1994 – Estrogens and Neuroprotection
Jiong Shi - Ph.D. Awarded Aug. 1997 - Estrogens and Brain Metabolism
Pattie S. Green - Ph.D. Awarded, May 1999 - Estrogens and Neuroprotection
Jian Wang-Ph.D. Awarded May 2001 - Estrogens and Neuroprotection
Evelyn Perez- Ph.D. Awarded May 2004 – Novel Non-feminizing Estrogens
Xiaofei Wang, Ph.D. Awarded May 2004 – Novel Estrogens and Eye Function
ShaoHua Yang, Ph.D. Awarded May 2004 – Estrogens and Stroke
Paul Aoun, Ph.D. Awarded May 2004 – PPAR agonists and Neuroprotection
Yi Wen-Ph.D. Awarded August 2004 – Estrogens and Alzheimer's Disease
Kun Don Yi, Ph.D Awarded May 2007 – Estrogens and phosphatases
Pil Kim, 2004-2008, M.S. Awarded, May, 2008 - Estrogens and Neuroprotection
Lonell Smith-M.S. Awarded 2008 - Estrogens and Neuroprotection
Anna Rodrigues-2005-2006 – Estrogens and Hot Flashes
Manjari Chandra-M.S. Awarded 2009 - Estrogens and Neuroprotection
Shaun Logan, Ph.D. Awarded 2009 – Estrogens and Neuroprotection

Zhang Zhang-Ph.D. Awarded 2009 – Estrogens and Tau
Lauren Elolf-Ph.D. Awarded May 2011 – Obesity and Cognition During Aging
Timothy Richardson-DO/PhD Awarded 2014 – Frederick's Ataxia and Estrogens
Maninder Malik-PhD. 2010-2014 – Drug Discovery for Parkinson 's disease
Cathy Tan-MS Awarded 2015 – Glial Polarization
Jessica Sun-PhD Awarded 2015 – Alternative Medicine and Neuroprotection
Danielle Doll-PhD Awarded 2015 – Cytokines and Stroke Vulnerability
Dominic Quintana-PhD Candidate 2014-Present – Glial Role in Alzheimer's disease
J.Z. Cavendish-PhD awarded 2019 – Mitochondrial Function Alzheimer's disease
Ashley Russell-PhD Awarded 2019 – Immune System-Stroke Interactions
Keyana Porter, PhD candidate, Pharmaceutical Sciences 2015-Present

Post-Doctoral Fellows

Wesley R. Anderson	1985-1988
Anna Ratka	1987-1991
Rama Ganesan	1989-1990
Mohamad Rahimy	1990-1991
Gopal Rajakumar	1993-1998
Kiran Panickar	1995-1998
Chun L. Yu	1995-1996
David Greenwald	1995-1996
Yu-Qi. Zhang	1995-1997
Guan Wei Guan	1995-1998
LeighAnn Stubley	1997-1998
Jiong Shi	1997-1998
Shao Hau Yang	1997-2000
Zhen He	1999-2000
David Watson	1999-2002
Tao Fan	1999-2000
Cheryl Kyser	2001-2005
Marianna Jung	2000-2003
Mridula Rewal	2001-2005
Ran Liu	2000-2012
Saumyendra Sarkar	2003-2012
Everett Nixon	2008-2012
Shaun Logan	2009-2010
Zhang Zhang	2009-2010
Sujung Jun	2010-2013
Stephanie Rellick	2012-2019
Heng Hu	2013-Present
Danielle Doll	2015
Liz Engler-Chiurazzi	2014-2017

Undergraduate Research Mentoring

William Adrams	1979-1980
David Fritz	1980-1981
Steven Tarr	1980-1981
Nheing Vu	1980-1981
Wayne Van Deusen	1980-1983
Todd Sadow	1981
Rebecca Dyle	1980-1982
Emily Miller	1980-1982
Susan Taylor	1980-1982
Terry Moore	1981-1982
Ennis Backus	1980-1981
Steven Rhodes	1980-1982
Warren Siciliano	1988-1989
Karen Krzanowski	1989-1990
Cathy Rullan	1991-1992
Gabriel Hurt	1991-1992
Jullett Burry	1992-1993
Janet Blackmere	1992-1993
Fredrick Huang	1992-1993
Preya Persaud	1994-1995
Eric Bodor	1994-1995
Janice Taube	1994
Brian Kersten	1994
Rodnie Cruz	1995-1996
Omid Rabbani	1995-1998
Mandy Hosford	1994-1997
Larissa Zaulyanov	1995-1998
Champ Barber	1995-1997
Rene Sanchez	1996-1997
Toni Hawks	1996-1998
Carl Fulp	1997-1999
Frances Ramos-Cabellos	1997
Patricia M. Wiessel	1997-1998
Christina M. Charriez	1997-1999
Carol Mannings	1997
Stuart Cramer	1997
Tammy Calloway	1999-2000
Yuan Liam	1999-2000
Jason Cutright	1999-2000
Steven L. Pashegoba	1998-1999
Nicole H. Cohen	1998-1999
Catherine Fiola	1999-2000
Aminda Bailes	1999
Chris Bray	1999-2000
Priscilla Pang,	TIMS Program, UNT (2001-2003)
B.J. Shah,	TIMS Program, UNT (2001)
Rosalinda Noquez	SMART Student, UNTHSC (2001)
Katherine Gleason	Smart Student, UNTHSC (2002-2003)

Shereta Wiley	Smart Student, UNTHSC (2002-2003)
Shannak Das	Undergraduate Student, Dunbar High School (2002-2004)
Dameyun Thompson	McNair Program, UNTHSC (2004)
Julia Marcella	Undergraduate student at TCU (2004-present)
Amber Ambrose	Smart Student, UNTHSC (2005)
Alaina K. Markham	TCOME Student (2012)
Thomas Levin-2013	(SURI Student)
Tony (Frank) Lacy	Mentor-2013 (Honors Thesis Program)
Yiran An,	Summer, 2013
Derek Andrein	SURI Student, Summer, 2014
Mimi Bukeirat	WVU Honors student, Summer 2014.
Jared Clapper	Biology Major BIOL 386 research course
K'Ehleyr Thai	SURI Student, summer, 2015
Terezia Galikova	Morgantown High School Student
David Wimer	Biology Honors Student, WVU(2019-Present)
Mark Colantinio	Biology Honors Student, WVU (2017-2019

Undergraduate Didactic Courses

Human Anatomy and Physiology, 50% responsibility, 125 students, 1980-2000

Endocrinology, 30% responsibility, 25 students, 1982

Public Health, 120 students, 1977-1979

Pathophysiology, 120 students, 2-6 lectures per year, 1982-2000

GRADUATE COURSES

Methods in Pharmacodynamics, 5 students, 1986

Advanced topics in Pharmacodynamics, 5 students, 1985-2000

Neurobiology of Aging, 20 students, 1990-2012

Advanced Endocrinology, 15 students, 1991-2000

Neurochemistry, 3 to 5 students, 1995-2012

Issues in the Responsible Conduct of Research, 30 students, 1995-2000

CONTINUING EDUCATION

"Menopausal Hot Flush" at the Continuing Medical Education Conference entitled Hormones, Brain and the Clinician, Tampa, FL, Feb. 18th, 1984.

"Neuropathology of Neurodegenerative Disease" at the CE Conference entitled Neurodegenerative Diseases, Miami, FL, March 16th, 1985.

SUPERVISORY COMMITTEE MEMBER

Patricia Kubanis - Ph.D awarded, June 1981
Rudyard Ress - Ph.D awarded, Aug. 1981
Emme Iloeje - MS awarded, June 1982
Marcus Brewster III - Ph.D. awarded, Aug. 1982
Gary Visor - PhD awarded, Aug. 1982
Marshall Spearman - PhD awarded, Dec. 1982
Jeffrey Joyce - PhD awarded, Aug. 1983
Edward Soltis - PhD awarded, June 1984
Tony Able - Pharm. D. awarded, June 1984
Ronald Smith - MS awarded, June 1984
Kathie Hart - MS awarded, Dec. 1984
LiFen Yeh - MS awarded, August 1985
V. Ravichandran - PhD awarded, December 1986
Lokenga Badinga - PhD awarded, December 1986
Cathy Smith - PhD awarded, December 1987
Oliver Li - PhD awarded, December 1987
Sung-Hwa Yoon - PhD awarded, May 1989
Indra Reddy - Ph.D. awarded, December 1989
Lynn Peck - M.S. awarded, May 1985
Kathie Young - Ph.D. awarded, May 1988
David Wallace - Ph.D. awarded, May 1991
Prashant Chikhale - Ph.D. awarded, May 1991
Christopher KonKay - Ph.D. awarded, December 1992
Brian Cleaver - M.S. awarded, May 1992
Gondi Kumar - Ph.D. awarded, December 1992
Xudong Ouyang - Ph.D. awarded, December 1993
Angeliki Kourounakis - Ph.D. awarded, May 1996
Vincent Andaloro - Ph.D. awarded, May 1996
Somnath Sarkar - Ph.D. awarded, May 1997
Vinny Srinivacin - Ph.D. awarded, May 1997
Nwando Nwanna, Ph.D. awarded, May 1996
Timothy Lim, Ph.D. awarded, May 1998
Qun Lee, Ph.D. Ph.D. awarded, May 1999
Kelly Daniels, Ph.D. awarded, May 1997
Yang-Suk Lee, Ph.D. awarded, May -1998
Ho-Seung Kim, Ph.D. awarded, May 1998
Pei Chen, Ph.D., Ph.D. awarded, May 1998
Ming Hu, Ph.D., Ph.D. awarded, May 1999
Robin Martin, Ph.D., Ph.D. awarded, May 2000
Bruce Jung, Ph.D., Ph.D. awarded, May 2000
Eric Gonzales, Ph.D. awarded, May 2005
Doung Mei Lu, Ph.D. awarded, May 2006
D. Manesh Kumar, Ph.D. awarded2007

Shalini Pershaud, Ph.D. awarded 2009
Pam Gill, Ph.D. awarded 2007
Murtuza Vali, Ph.D. Candidate, 2002-2005
David Lim, M.S. Candidate, 2005-2009
Joshua Gatson, Ph.D. awarded 2007
Myriam Iglewski, Ph.D. awarded 2009
Amber Ondricek- Ph.D. awarded 2010
Adrienne Badeaux- Ph.D. awarded 2011
Courtney Bowles, Ph.D. candidate, 2007-2012
Sujung Jun- Mol Biology Ph.D. awarded 2010
Ethan Poteet-Ph.D candidate 2008-2012
Patricia Palacios, M.S. candidate 2008-2012
Amanda Yu, DO/Ph.D. PhD awarded 2011
Niki Mirshams Ph.D. awarded 2011
Ashley Petrone, PhD awarded 2015
Patricia Palacios-Ph.D. student, 2009-2012
Roy Choudhury Ph.D. Student -2009-2012
Wenjun Li- Ph.D. Student-2010-2012
Steven Brooks, PhD Student 2011-2016
Sylwia Mrowka- Neuroscience Program, -2013-2017, WVU
Alisa Elliott-Neuroscience Program-2013-present, WVU
Afroz Mohammad- Ph.D. awarded 2017
Kayla Branyan - Ph.D. awarded 2017, WVU
Grant O'Connell - Ph.D. awarded 2017
Kiril Tuntevski-Neuroscience Program, -2015-2018, WVU
Michelle Bedenbaugh- Ph.D. awarded 2018, WVU
Raymond, T. Anderson, Biomedical Sciences Training Program, 2016-Present
Tiffany Petrisko -Neuroscience Program, -2016-present, WVU
Deidre O'Dell – Neuroscience Program-2017 to present, WVU
Emily Burrage – Neuroscience Program- 2019-present
Shokofeh Rahimpour – Microbiology Program, 2019-present
Sarah Freeman – Pharmaceutical Sciences Program, 2018-present
Pushlar Sarakar - Pharmaceutical Sciences Program, 2017-present

PROFESSIONAL ACTIVITY

National

Co-chairman of the Session, "Reproduction" at the Annual Meeting of the Federation of American Societies for Experimental Biology, Anaheim, CA, April 15th, 1980.

Selected as a referee for abstracts submitted to the 64th Annual Meeting of the Endocrine Society, 1982.

Scientific Advisory Board for Pharmatec, Inc., May 1983 to May 1985.

Director of Pharmacological Sciences, Pharmatec, Inc., 1985 to 1988.

Site Visit Team, National Institute on Aging, 1983 to present.

Site Visit Team, Division of General Medical Education, NIH, 1983.

Review for grant applications submitted to the Veteran's Administration. "Innovative Research in Aging" Program, 1983.

Reviewer, March of Dimes Grant applications, 1983, 1985.

Ad Hoc Committee on Alzheimer's Disease Research Centers, National Institute on Aging, 1985.

Chairman of the Site Visit Team to the University of Pittsburgh Alzheimer's Disease Research Center, February, 1985.

Aging Review Committee Member, National Institute on Aging, July 1, 1985 to June 30, 1989.

Referee for manuscripts submitted to the following Journals: Endocrinology, Neuroendocrinology, J. American Physiological Society, J. Andrology, J. Gerontology, Biology of Reproduction, Life Sciences, Brain Research, Brain Research Bulletin, Bioscience, Theriogenology, J. Nutrition and Physiology and Behavior, Neurobiology of Aging, J. Pharmacol. Expt. Ther., PNAS, Current Drug Targets, PNAS, PloS One, J. Neuroschemistry, J. Alzheimer’s Disease, Current Alzheimer’s Disease, Alzheimer’s and Dementia, J Neuroimmunology, Nature, Neuron etc.

Field Editor, Geriatrics and Gerontological Endocrinology, for the Microform Library of Pergamon Press, appointed October, 1985.

Consultant, Key Pharmaceuticals Inc., 1984 to 1985.

Ad Hoc Committee A, Biomarkers of Aging, NIA, 1987.

Chairman, Gerontology and Geriatrics Review Subcommittee A, National Institute on Aging, July 1, 1988 to June 30, 1989.

Research and Graduate Studies Committee Member, American Association of Colleges of Pharmacy, 1988.

NIH Reviewer Reserve, 1989 to 1991, 1993 to present.

Ad Hoc Committee on Alzheimer's Disease Research Centers, National Institute on Aging, January, 1990.

Ad Hoc Committee on Center of Excellence in Geriatric Research and Training, National Institute on Aging, June, 1990.

Reviewer, Eastern Regional Research and Development Office, Veterans Administration.

Aging Review Committee Member, National Institute on Aging, March 1991 to June 30, 1993.

Member, American Pituitary Association, 1993 to present.

Sterling Winthrop Visiting Professor, University of Kentucky, February, 1993.

Consultant, Haughten Pharmaceuticals, Inc., 1993.

Associate Editor, North America, J. Biopharmaceutical Sciences, 1990 to 1993.

Editorial Board, Pharmaceutical Science Communications, 1993 to present.

Panel on Vitality and Aging, White House Office of Domestic Policy, 1994.

Member German-American Cooperation in Health Research, 1996 to 1999.

Ad Hoc reviewer, Alzheimer's Association.

Selected as a Member of the “Work Group on Prevention of Alzheimer’s Disease” for the National Alzheimer’s Association. 1999

Member of the Initial Review Board of the Medical and Scientific Advisory Council of the Alzheimer’s Association, 1998-1999.

Member of the Medical and Scientific Advisory Council of the Alzheimer’s Association, 1999 to 2005.

Member of the Governing Board, North Central Texas Chapter of the Alzheimer’s Disease

Association, 2003 to 2012

Chairman, Scientific Advisory Board on Reproductive Toxicology-Syngenta, 1992 to 2017

Scientific Advisory Board on Reproductive Toxicology, Dow Corning, 1995 to 2008

Consultant Silacone Environment and Health Safety Council, 2004 to 2008

Scientific Advisory Board-Genelink, 2000 to 2007

Scientific Advisory Board-Kronos Longivity Institute, 2000 to 2005

Scientific Advisory Board-Byrd Alzheimer’s Institute, Tampa Florida, 2005 to 2008

Scientific Advisory Board-EyeCyte Therapeutics, 2005 to 2020

NIA-N Study Section, 2009 to 2018

American Heart Association Brain-3 Grant Reviewer, 2012

Frontiers in Aging Neuroscience-Associate Editor

2012-2016, Loan Repayment applications for the National Institute on Aging

Rainwater Charitable Foundation-Grant reviews

2012 American Aging Association Meeting- Program Committee-Member

Journal of Aging and Disease-Editorial Board member

Dana Alliance Brain Initiative-Member

President-International Society on Aging and Disease (ISOAD)-2012-2016

University of Florida

Chairman, University Committee for the Selection of the Searle Scholarship applicants for the University of Florida, 1983.

Chairman, University of Florida Committee for Research Development Award Applications, Division of Sponsored Research, 1984.

Moderator for the Florida Neuroendocrine Symposium, Tampa, FL, 1984.

Moderator for the Florida Neuroendocrine Symposium Continuing Education Conference entitled "Hormones, Brain and the Clinician", Tampa, FL, 1984.

Program Planning Committee Member for the Academic Wing, J. Hillis Miller Health Center, 1985.

Fund Raising Campaign Member for the Academic Wing, J. Hillis Miller Health Center, 1985.

Scientific Advisory Board, Center for Drug Design and Delivery, 1986 to present.

Research Program Development Council, 1988-present.

Co-Director, Center for the Neurobiology of Aging, 1988 to present.

Member, Biotechnology Patent Committee, 1988 to 1990.

Member, Internal Faculty Advisory Board, University of Florida Brain Institute, 1993 to present.

Research Achievement Award, University of Florida, 1990.

Membership Committee, Center for Neurobiological Sciences, 1993 to present.

Task Force on the Institute of Aging, University of Florida, 1991 to 1993.

Internal Scientific Advisory Panel for the Program Project Grant entitled "Sodium Chloride and Aging," 1992 to present.

Scientific Advisory Board, Center for Alcohol Research, 1993 to present.

Internal Scientific Review Panel for the Research Center on Oral Health in Aging, 1991 to 1993.

Training Committee for the NIH Training Grant, "Training in Drug Design and Delivery," 1990 to present.

Training Committee for the NIH Training Grant, "Training in the Neurobiology of Aging," 1989 to present.

Action Plan Committee for the Health Science Center Aging Center, 1994 to 95.

Member, Program in Neural Signal Transduction, Neuroplasticity and Drug Development, 1995to present.

External Review Panel for the Department of Periodontology, College of Dentistry, University of Florida, 1995 to 96.

Markey Faculty Scholar Search Committee, College of Medicine, 1995 to 96.

Search Committee, Stein Gerontological Institute at the Miami Jewish Home and Hospital for the Aged, University of Florida, 1995 to 96.

Associate Director, Regional Initiative on Oralfacial Pain, University of Florida, 1996 to 2000.

College of Pharmacy

Graduate Studies Committee, 1978 to1983.

Biomedical Research Grant Committee, 1982 to present.

Curriculum Committee, 1983 to1985.

Doctor of Pharmacy Committee, 1982 to 1984.

Faculty Retreat Committee, 1982, 1983.

Tenure and Promotion Committee, 1982 to1984, 1986 to1988.

Faculty Advisor for Phi Lambda Sigma, a Pharmacy Leadership Fraternity, 1982 to1987.

Executive Committee, 1984 to 1991.

Search Committee for Faculty in Dept. of Pharmacodynamics 1983 to1984.

Chairman, Search Committee for Chairman of the Department of Pharmaceutics, 1985.

Instrument Room Committee, 1984 to1986.

Self-Study Advisory Committee, 1986.

Member, Self-Study Steering Committee for ACPE Accreditation, 1986 to 87.

Chairman, Graduate Studies Committee, 1988 to1991.

Chairman, Biomedical Research Support Grant Committee, 1988 to 1991.

Member, Public Relations Advisory Committee, 1988 to1991.

Chairman, Graduate Program Self-Study Committee, 1989 to 1990.

Chairman, Task Force on Graduate Studies, 1990.

Member, Department of Pharmacodynamics, Graduate Admissions Committee, 1993 to 2000.

Faculty Search Committee, Department of Pharmacodynamics, 1993 to 1994.

Leadership Council, College of Pharmacy, 1995 to 2000.

Executive Committee, College of Pharmacy, 1995 to 1999.

United Way Community Campaign Committee Member, 1996.

Chairman, Department of Pharmaceutics, 1997 to 1999.

University of North Texas Health Science Center

Chairman, Department of Pharmacology & Neuroscience, July 2000 to 2010

Founding Director, Institute for Aging and Alzheimer's Disease Research, 2000 to 2012

Member, Intramural Research Committee

Member, Research Institute Directors

Member, Basic Science Chairs Committee 2000 to 2012

Chair, Council of Institute Directors, 2002 to 2003

Member-Research Advisory Council-2004 to 2012

Research Strategic Planning Committee-Chair, 2004 to 2005

Member, President's Strategic Thinking Council on Research, 2006 to 2010

President's Leadership Team 2006 to 2012

Faculty Evaluation Committee-2007

Department of Integrative Physiology Chair Search Committee, Chair, 2008 to 2009

Faculty Workload Committee, 2010 to 2011

Member, Clinical Faculty in Geriatric Search Committee-2011 to 2012

P & N Representative on the GSBS P & T Committee 2011 to 2012

Chair, P & T Committee 2011 to 2012

Member, Department of P & N Faculty Search Committee

West Virginia University Health Science Center

Director, Center for Basic and Translational Stroke Research

Member-Center for Neuroscience Steering Committee

Member-Center for Cardiovascular and Respiratory Science Steering Committee

WVU Pilot Grant competition reviews-2014

Center for Neuroscience Retreat Poster Judging, June 2013.

Van Liere Student Poster Judging, February, 2014

Reviewer of WVCTSI Pilot Grants, spring 2014, 2015.

WVCTSI Recruitment Intake Committee, 2013 to 2014

WVCTSI Scholar Selection Committee, 2013 to 2014

Department of Neurology search committee for the Director of Clinical Stroke Research, 2013 to 2014.

Member, Search Committee for the Chair, Department of Behavioral Medicine and Psychiatry Chair

Chair, Search Committee for the Director of Neurosurgery Research

Member, Search Committee for the Director of Clinical Stroke Research

Member, Search Committee for faculty position in neuroimmunology

Member, Search Committee for faculty position in Neurobiology and Anatomy

WVCTSI Mentoring Academy Committee

Qualifying Exam Committee for the Neuroscience Training Program, WVU

CRMC Committee, WVU HSC

Member of the Search Committee for the Director of the Center for Excellence in Disabilities

Search Committee, Department of Physiology and Pharmacology

Search Committee, Department of Neuroscience

Research Advisory Committee, Rockefeller Neuroscience Institute, WVU

COMMUNITY

Board of Director, Gainesville High School Quarterback Club, 1988 to 1989.

President, Gainesville High School Homerun Club, 1989 to 1990, 1991 to 1992.

Board of Directors, Gainesville High School Homerun Club, 1989 to 1992.

Volunteer, J.J. Finley Elementary School, 1985 to 1998.

Honorary Board of Directors, North Central Florida Chapter, Alzheimer's Association, 1992 to 2000.

Chairman, Operations Committee, Southeast Regional American Legion Baseball Tournament, 1994.

Member, University of Florida Dugout Club, 1991 to 2000

Softball Coach, Senior Girls League, City of Gainesville, 1995, 1996.

Honorary Member, North Central Florida, Alzheimer's Association, 1992 to 2000.

Team captain, Alzheimer’s Disease walk-a-thon, Fort Worth, Texas Sept. 2000, 2001, 2002.

Member, Board of Directors, North Central Texas Alzheimer’s Association, 2003 to 2010.

Member, Medical and Scientific Advisory Board, National Alzheimer’s Association 2000 to 2008.

Consulting

Scientific Advisory Board, Syngenta Crop Protection, Inc.

Scientific Advisory Board, Nestlé-Purina Research

Co-Founder, Quality Scientific Solutions, LLC

Scientific Advisor, Cognifem, LLC

Scientific Advisory Board, Eudora Life

Rec'd 10/23/09

10/2009 Revised

CURRICULUM VITAE

DAVID JOSEPH SMITH, Ph.D.

Department of Physiology and Pharmacology
Robert C. Byrd Health Sciences Center of West Virginia University, P.O. 9229
Morgantown, WV 26506-9229

voice 304-293-4470
facsimile 304-293-3850
e-mail djsmith@hsc.wvu.edu

EDUCATION

Parkersburg, West Virginia Public Schools - 1949-1961
B.S. degree, Biology - Bethany College, Bethany, West Virginia, 1965
M.S. & Ph.D., Pharmacology - West Virginia University, Morgantown, WV, 1965-1969

APPOINTMENTS

Post Doctoral Fellow, Department of Pharmacology, University of Iowa, Oakdale Toxicology Center with Doctor Lucas S. Van Orden, 1969-1971

Assistant Professor, Department of Anesthesiology and Department of Pharmacology, West Virginia University, 1971-1975

Associate Professor, Department of Anesthesiology and Department of Pharmacology, West Virginia University, 1975-1981

Professor, Departments of Pharmacology/Toxicology and Anesthesiology, West Virginia University, 1981-2001. (Pharmacology and Toxicology was eliminated in 2001)

Director, Anesthesiology Research Laboratory, 1976-1996 (Anesthesiology laboratory transferred to Pharmacology/Toxicology, 1996)

Professor, Departments of Biochemistry /Molecular Pharmacology and Anesthesiology, West Virginia University, 2001-2007

Professor, Departments of Physiology and Pharmacology, West Virginia University, 2007-present

Coordinator of Pharmacology Education for Professional Schools at the Health Sciences Center, 2001-present

Chairperson of the Pharmacology Committee at WVU 2006-present

Associate Chair for Education, Dept. of Physiology and Pharmacology 2008-present

09/10-1005

SOCIETIES AND HONORS

American Society of Pharmacology & Experimental Therapeutics
Society for Neuroscience
American Pain Society
International Association for the Study of Pain
International Narcotic Research Conference
MacLachlin Memorial Award for Teaching Excellence, 1975 & 77
Outstanding Professor Award, Sphinx Senior Honorary, 1990
Special recognition of the Pharmacology Medical Curriculum while serving as course Coordinator 1999.
Nominated to serve on the USMLE Test Materials Development Committee, 2001
Nominated for the Health Sciences Center Distinguished Teacher Award, 2001
USMLE Test Materials Development Committee for Pharmacology, 2003-2005.
Nominated - MacLachlin Memorial Award for Teaching Excellence, 2004, 2005, 2006, 2008
Golden Apple Award, American Medical Student Association of WVU, 2005
MacLachlin Memorial Award for Teaching Excellence 2008-2009 (academic year)
Deans Award for Excellence in Education 2008-2009 (academic year)

INTRAMURAL PROFESSIONAL ACTIVITIES

Committees

Interviewer-Committee on Admissions to Medicine, 1972-1976
Medical Student Research Convocation Committee, 1979-1990
Promotion & Tenure (Pharmacology), 1982-1985 & 1989-1990 & 2000
Chair, Standing Committee: Alleged Misconduct of Research and Scholarship, 1984-86
Chemical Hygiene Officer-Dept. of Anesthesiology, 1992-1996
Chair, Van Liere Med. Student Res. Judging Committee, 1992
Neuroscience Chapter President, WVU, 1991
ad hoc, Institutional Review Board, 1992
Physiology Chair Search Committee, 1992-1993
Anatomy Academic Review Committee, 1993
Pharmacology Faculty Search Committee, 1992-1993
Advisory Committee for the Positron Emission Tomography (PET) Cent., 1991-1992
Chair, WVU Animal Care and Use Committee, 1986-1988
Chair, Dept. of Anesthesia Research Committee, 1992-1996.
Promotions & Tenure (Anesthesiology), 1977 & 1985-1996, 1998
Health Sciences Library Committee, 1994-1999
WVU Senate, 1994-2000
Dean's Committee for Strategic Planning in Neuroscience, 1994-1996.
WVU Senate Research Integrity Committee, 1995-1997
Search Committee for Head of Information Services, 1998
WVU Senate Faculty Welfare Committee, 1998-2000, Chair-elect 2000
Biomedical Research Support Grant Committee, 1990-1999
Search Committee for the Chair of Pharmacology and Toxicology, 1999
Graduate Council Review Subcommittee for the MS degree in Forestry, 2000
School of Medicine Promotion and Tenure Committee, 2001-2005

WVU Animal Care and Use Committee, 1984-2004
School of Medicine Standards of Behavior Committee, 2002-present
PDA subcommittee of the Medical School Curriculum committee, 2004
Reviewer: WVU Research Corporation Program to Stimulate Competitive Research (PSCoR), 2005
Biomedical Sciences Subcommittee of School of Dentistry Curriculum Management Committee, 2005-2007
WVU Institutional Review Board 2004-2008
School of Pharmacy Curriculum Committee (ad hoc) 2008 - present

Curriculum Management

Electron Microscopy Interdepartmental. Course Committee, 1974-1980
Cell Biology Course Committee, 1976-1979
Basic Science Lecture Series in Anesthesiology, 1975-1979
Anesthesiology Committee on Education, 1978-1979
Research Conference Coordinator (Anesth.), 1978-85; 1990-94
Anesthesiology Journal Club Coordinator, 1990-1998
Anesthesiology Patient Simulator Committee, 1999-2000
Strategic Planning Advisory Board for Education 2000-2001
Neuropharmacology Journal Club Coordinator (Pharmacology), 1984-2001
Coordinator of Pharmacology 367 (Advanced Neuropharmacology), 1997-2001
Coordinator of Pharmacology 761 (Medical Pharmacology), 1998-present
School of Medicine Curriculum Committee, 1998-present
Chairman Course Directors Sub-Committee, 2006
School of Medicine Course Coordinators Committee, 1998-present
MSII Curriculum Review and Integration Committee, 2008
Coordinating Committee for Graduate Medical Education, 1990-present
Coordinator of Pharmacology Education for Professional Schools at the Health Sciences Center, 2001-2006
Coordinator for the Development of the Pharmacology Curriculum; Course Director & Lecturer in OMAN Medical School, 2005-present
Chair Committee on Pharmacology 2006-present
Chair Subcommittee on Professional Education of Committee on Pharmacology 2006 – present

Instructional Activity

<u>Graduate student advisor</u>

Louis Martin, Ph.D., 1977-1980
Tennessee Neuropsychiatric Institute with Elaine Sanders-Bush
Ciba Geigy
Gary Pekoe, M.S., 1978-1981
Merrell-Dow, Cincinnati
Univax Biologics Inc.
Phil Monroe, Ph.D., 1980-1983
G.D. Searle, Chicago with Donna Hammond

University of Arizona with David Nelson
Nova Pharmaceuticals
WV Univ. Depts. of Anesthesiology & Pharmacology
Battelle Laboratories, Columbus, OH

Laurie Brown, 1984-1988
Institute for Neurological Sciences Research University of Texas at Austin
Northeastern Ohio University School of Medicine, Dept. of Pharmacology

Gene Williams, 1985-1990
NIDR/NIH with Ronald Dubner
FDA, Staff College
Senior Associate Scientist, Hoescht Marion Roussel

Mark O. Urban, 1990-1994
University of Iowa, Dept. of Pharmacology with Gerald Gebhart
University of Iowa, Assistant Research Scientist, Dept. of Pharmacology
Senior Scientist with Merck, San Diego

Alyssa A. Hawranko, 1993-1997
University of Pittsburgh, Dept. of Pharmacology with William deGroat
Educational Specialist, Astra Pharmaceuticals
Education Specialist and Clinical Trials Manager, Astra-Zeneca

Jeff Smith, 1995-1999
Clinical trials manager with Mylan Pharmaceuticals
Pharmacologist with Bertek, Research Triangle, NC
Pharmacology Toxicology at Mylan, Inc. Morgantown, WV

Dissertation committee member

Tony Lee, Ph.D., 1973 (co-advisor)
Leon Wince, Ph.D., 1978
Keith Demarest, Ph.D., 1978
Betty Prince, M.S., 1980
Darryle Schoepp, Ph.D., 1983
Greg Carter, M.D., Ph.D., 1984
Lisa Cassis, Ph.D., 1984
Terriann Crisp (Marshall University), 1985
John Liccione, 1986
Peggy Biser, 1989
David Cheng (Marshall University), 1992
Rhonda Gabr,1994
Karen Courtney, Dept. of Psychology,1994
Carl J. Malanga, 1995
Amy Odum, Dept. of Psychology, 1998
David White, 1999
William (Tripp) Griffin, 2001
Jennifer Johnson, Dept. of Psychology, 2002
Karen Rust, Dept of Physiology and Pharmacology, 2002
Yi Jing, Dept. of Biochemistry and Molecular Pharmacology, 2007
Casey Nestor, Dept of Physiology and Pharmacology, 2007-present

Post-doctoral advisor

Phil Monroe, Ph.D., 1983-84

G.D. Searle, Chicago
Terriann Crisp, Ph.D., 1985-1987
Northeastern Ohio Universities College of Medicine, Dept of Pharmacology
Alyssa Hawranko, Ph.D., 1997-98
University of Pittsburgh

Lectures in Pharmacology

	Contact hours
Medical Pharmacology	
Non-narcotic analgesics	2
Narcotic drugs	3
General Anesthetics	2
Local Anesthetics	1
Pharmacology of pain	2
Pharmacokinetics	3
Histamine and Antihistamines	1
Mucolytics and Expectorants	1
Conference discussion leader	16
Nursing Pharmacology (not in 2002-2005)	
General anesthesia	1
Local anesthesia	1
Narcotics	2
Non-narcotic analgesics	1
Neuromuscular blockers & relaxants	1
Sedative hypnotics	1
Anti-anxiety	1
Tutorial	1
Pharmacy Pharmacology (not in 2005)	
Pain management	2
Anesthetics	2
Nonsteroidal antiinflammatory drugs	1
Narcotics	2
Local Anesthetics	1
Dental Pharmacology (not in 2005)	
Introduction to Neuropharmacology	1
Pain Management	1
General Anesthesia	2
Local Anesthetics	1
Narcotics	2
Sedative Hypnotics	1
Antianxiety Drugs	1
Drugs of Abuse	1

Pharmacy 449 (Undergraduate Pharmacology)

Adverse Drug Reactions	1
General Anesthesia	1
Local Anesthesia	1
Narcotics	1
Non Steroidal Anti-inflammatory Drugs	1
Sedative Hypnotics	1

On-line teaching

Pharmacology courses for undergraduates 2005 & 2007
Summer remedial course for Medical Students 2007 (nationwide)

Physiology/Pharmacology Introductory Graduate Course (not since 2002)

Neuromuscular Blocking Agents	1
Pharmacology of Pain	1

Graduate Courses (not since 2002)

Neuropharmacology (Pharmacology of Pain & Drug selectivity measured in vivo)		8
Methods Course (Current laboratory techniques)		variable
Molecular Pharmacology and Biochemistry Student Journal Club	coordinated	4
	attended	4
Research forum and seminars		12

EXTRAMURAL PROFESSIONAL ACTIVITY

Journal review and/or Editorial Board

Editoral functions
J. Pharmacology & Experimental Therapeutics:
Field Editor for Analgesia and Drugs of Abuse 1996-1998
Pain Digest: Associate Editor for Basic Sciences 1995-2000

Reviewer
Neuroscience Letters
Science
Biogenic Amines
Brain Research, 02
Analgesia
Pharmacology and Toxicology, 00
Neuroscience
Molecular and Chemical Neuropathology
Life Sciences, 00
J. Pharmacology & Experimental Therapeutics, 06
Proc. Soc. Exp. Biol and Med., 98
Pain, 06, 07 (2)

Biochemical Pharmacology, 00, 06, 07, 09
Basic and Clinical Pharmacology and Toxicology 07
MedEdPORTAL, 07, 09

Professional development

Allegheny University for the Health Sciences, Workshop on Effective Teaching (June 8-12, 1998)
International Association of Medical Educator: Advances in Medical Education, Learning Modes and Teaching Strategies, Georgetown University Medical Center, Washington, DC 1999
Graylyn Conference on Technology Innovation in Medical Education, Wake Forest University, 2000
Faculty Development presentations (various) and Learning Extravaganza at Health Sciences Center, 2001
Teaching Pharmacology Tommorrow-Tools and Techniques, Satellite Meeting of the IUPHAR, Asilomar Conference Center, 2002
LXR Test Author Course, 2005
Course and Clerkship Directors Training, 2006

Grant review

National Science Foundation (ad hoc), 1993
Illinois Heart Association (ad hoc)
WV Heart Association (ad hoc)
NIH Neurological Diseases and Stroke Study Section, 1983
NIH Special Study Section, 1985
Ohio University, ad hoc, 1986, 1990, 1993
Medical Research Council of Canada, 1991, 1995

American Heart Association Activities

West Virginia (WV Affiliate of AHA, merged with Ohio 1996)

Board of Directors, 1979-1996
Chair, Research Committee, WV Affiliate, of AHA, 1979-1981.
Chair, West Virginia Affiliate of American Heart Association, 1983-1985.
Chair, Community Organization Development Committee, 1990-1996
Research Policy and Allocations Committee, 1993-1995
Nominating Committee, 1989-1996

Ohio-West Virginia Affiliate

Community Development Committee, 1996-1999
Delegate Assembly Planning Committee, 1996-1998

National AHA

Vice President American Heart Association, 1988-89
Mid-Atlantic Regional Research Recertification Committee, 1981-1985.
Chair Elect, Mid-Atlantic Regional Heart Committee, 1986-87
Chair, Mid-Atlantic Regional Heart Committee 1988-89

Past Chair of Mid-Atlantic Reg. Heart Comm., 1989-90
AHA Nominating Committee, 1989-1990
Leadership Development Conference Planning Committee, of AHA 1986-87
Agenda Planning Committee for the AHA Delegate Assembly, 1987
Division Standards and Certification Com. of the Ohio Valley Affiliate, 1998

Site Visitor:
North Carolina Heart Assoc. peer review process, 1983
Maryland Heart Association peer review process, 1983
New Jersey Heart Association peer review process, 1987
Kentucky Affiliate, 1989
South Carolina Affiliate, 1990
New Mexico Affiliate, 1991
New Hampshire Affiliate, 1991
Rhode Island Affiliate, 1992

Professional Society Activity

Chair, Neuropharmacology Session, FASEB Meeting, 1979
Councilor WV Chapter of Soc. for Neuroscience, 1985-89 & 1990-92
President WV Neuroscience Chapter, 1990-1991
Scientific Program Committee, Ann. Meeting of the American Pain Society, 1993
Chair, Symposia on neuropeptides and opioid analgesia, Am. Pain Soc., 1994
Div. of Education of the American Soc. for Pharmacology & Exp. Ther., (2000 – present)
Div. of Neuropharmacology of the American Soc. for Pharmacology & Exp. Ther., (2000–present)

Other

Reviewer for a promotion and tenure application, University of Pittsburgh, School of Medicine, 1984
Reviewer for a promotion and tenure application, University of Arizona, School of Pharmacy, 1984
Presided at the Health Sciences and Technology Academy Symposium in WV for underrepresented high school students, 1999 and 2000.
Reviewer for a promotion and tenure application, University of Houston, College of Pharmacy, 2000
Visiting Professor, East Carolina School of Medicine-Lectures on Anesthesia, 2002
Presided at Health Sciences and Technology Academy Annual Science Symposia 2004-05
USMLE Test Materials Development Committee for Pharmacology, 2002-2004
Acquisition of New Images Project for USMLE, 2006
Reviewer for Subject Exam in Pharmacology, 2009

RECENT SEMINARS AND PRESENTATIONS

Pharmacology of General Anesthesia, East Carolina University School of Medicine, 2006-08

Herbal Medicine, North East Ohio University College of Medicine (NEOUCOM), 2005
Pharmacology of General Anesthesia, East Carolina University School of Medicine, 2005
Intravenous anesthesia: A fleeting memory, Lake Erie College Osteopathic Med., 2004
Pharmacology of General Anesthesia, East Carolina University School of Medicine, 2004
Pharmacology of General Anesthesia, East Carolina University School of Medicine, 2003
Narcotic drugs: A review, Dept of Anesthesiology, Robert C. Byrd Hlth Sci Cnt 2002
Ross University School of Medicine. Pharmacology of Local Anesthetics, 2002
Herbal Medicine Introduced into the Basic Science Curriculum for 2nd Year Medical Students. IUPHAR Satellite Congress: Teaching Pharmacology Tomorrow – Tools and Techniques, 2002.
Biochemical and Physiological Basis for Multiple Pain Therapies. Wheeling Jesuit College, 2002.
The Pharmacology of Anesthesia, East Carolina University School of Medicine, 2002.
Pain has many faces. Bethany College, Depts. of Chemistry and Biology, 2001.
Web-Based Study Materials for Pharmacology Education. Marshall University School of Medicine, 2001.
The Use of WebCT for Computerized Testing of Medical Students, and for Evaluation of Faculty and Courses, Marshall University School of Medicine, 2001.
Faces of Pain and Treatments. Medical School 101. WVU, 2000
Anesthesia Laboratory Pain Research and Testing Models. Office of Laboratory Animal Research at WVU, 1998
Synaptic Pharmaceuticals - Neurotensin as an antianalgesic neurotransmitter, 1996.
Dept. of Physiology, Robert C. Byrd Health Sciences Center, Opioid-induced pain facilitation, 1996.
Anesthesia Laboratory Pain Research and Testing Models. Office of Laboratory Animal Research at WVU, 1996.
Symposium (Chair): Endogenous CNS peptides as neuromodulators of the responses to opioids. American Pain Soc. Annual Meeting, 1994.
Stress analgesia. High school student summer research program, 1994.
Dept. of Psychology, WVU Neuroscience Colloquium, Pain and Anxiety, 1994
Pain Update Lecture at the American Pain Society Annual Meeting (Acute Models of Nociception), 1993
International Narcotics Research Conference, Skovde Sweden (Multiple opioid receptors mediate descending pain inhibition from the periaqueductal gray (PAG)), 1993
Copper Mountain Colorado, International Narcotic Research and FASEB Summer Conference, "ß-endorphin and morphine interact with different opioid receptors in the PAG of the rat.", 1991
Alderson-Broadus College, "Endogenous opioids and opioid receptors", 1991
Camden-Clark Memorial Hospital. Outreach Lecture for CME,"Non-steroidal antiinflammatory drugs", 1991
Visiting Professor, University of North Carolina, Department of Anesthesiology, Opiate receptors involved in pain processing, December, 1990
Department of Neurology, West Virginia University, Descending pain inhibition, 1990
Department of Physiology, West Virginia University, Opiate receptors controlling descending pain inhibition, October, 1990
Visiting Professor, Ohio State University, Department of Anesthesiology, Multiple opiate receptors in descending inhibitory pain pathways, August, 1990
Visiting Professor, Northeastern Ohio Universities College of Medicine, Department of Pharmacology, Multiple opiate receptors controlling descending pain inhibition, December, 1989
25th Anniversary Symposium of the Status of Ketamine in Anesthesiology, Ann Arbor, MI - Ketamine and opiate receptor interactions, 1989

Bethany College - Pain and how it is blocked by narcotics, 1988
Visiting Professor, Department of Anesthesiology, University of Medicine and Dentistry of New Jersey, Multiple opiate receptors and pain, 1985
Department of Neurology, West Virginia University, Pain sensory perception and narcotic action, 1984
AAMI 17th Annual Meeting in San Francisco, Biological basis of TENS for pain relief, 1982
School of Dentistry Faculty Development Retreat, Cardiopulmonary Resuscitation, 1981
West Virginia State Society of Anesthesiology, Endogenous Opiates, 1980

CURRENT RESEARCH ACTIVITY

Opioid activated pain facilitory and inhibitory neuronal pathways: pharmacological manipulation of pain facilitory pathways to enhance opioid action. Current facilitory neuronal processes of interest include neurotensin and cholecystokinin neurons.

Preferential interaction of opioid drugs and endogenous opioids such as β-endorphin with sub-types of opioid receptors. Relationship to the differential activation pain facilitory and inhibitory pathways.

The modification by anxiety of the balance between pain facilitory and inhibitory mechanisms, particularly as it is related to the action of opioids.

Influence of Yoga Therapy on Low Back Pain

RESEARCH SUPPORT

NIH: Yoga therapy for the treatment of low back pain, Co I with Kimberly Williams, Ph.D., PI. $450,000 for 2005-2008 (currently in no cost extension -2008-2009)

West Virginia University Clinical Studies Research Development Grant, Co.I., Influence of Yoga Therapy on Low Back Pain $10, 000, 2001-2002.

Sanofi Recherche, France: Preclinical studies with neurotensin antagonists, P.I., David J. Smith, $62,000, 1996-1999.

Anesthesiology Research funding. Funding was provided by the Anesthesiology Dept. to maintain an active research program when extramural support was unavailable. 1971-1995. P.I., David J. Smith, approximately 30,000-40,000/yr.

Sanofi Recherche, France: Preclinical Studies with SR48692, P.I., David J. Smith, $20,000, 1995.

Biomedical Research Support Grant, Pain, anxiety and alterations in opioid receptors, $7000. P.I. David J. Smith. 1994-1995.

Graduate Training in Pharmaceutical Sciences David J. Smith, Participating mentor for students1971-present

ADAMHA Contract No. 271-90-7032: NIDA Drug Supply, $2500--D.J. Smith, Ph.D., recipient of various opioids and radioligands for use in studies of opioid receptor localization and function. 1993-present.

NIH 2 RO1 GM30002, Ketamine, Opiate receptor preference and action , $180,000, March 1983-September 1986. Principle Investigator--D.J. Smith, Ph.D.

WVU Medical Corporation and NIH Biomedical Research Grant. SO7-RR05433-18: Presynaptic receptors and regulation of serotonin release, $5,000, January 1981-December 1982, Principle Investigator--D.J. Smith, Ph.D.

NIH, Mental Health Small Grants: Organelle complexes related to synaptic function. $10,000, March 1982-February 1983, Stephen Carmichael, Ph.D., P.I., David J. Smith, Ph.D. Co.I.

WV Heart: Co-Investigator, Ketamine and Interaction with Anti-hypertensives, David J. Smith P.I., $10,0000, 1980-81.

WV Heart: Co-Investigator, Ketamine and Interaction with Anti-hypertensives, David J. Smith P.I.., $4,000, 1979-80.

ERDA Grant, 1977-79: Sensory behavioral aspects of coal gasification products, $25,000

Sterling-Winthrop, 1979-78: Cyclazocine - Derivatives: anesthetic potential, David J. Smith P.I.., $14,000.

WV Heart Association, 1975-77: Mech. of Benzquinamide-induced arrhythmias, David J. Smith P.I.., $5,500.

V.A. Hospital Grant, 1975-77: Benzquinamide, David J. Smith P.I.., $2,000.

Institutional Grant Support, 1975-76, Study of neurotransmitter release, David J. Smith P.I.., $2,000.

RESEARCH SUPPORT PENDING

Yoga therapy for the treatment of low back pain: Continued study is being prepared for submission

RESEARCH SUPPORT APPROVED NOT FUNDED

NIH: Yoga therapy for the treatment of low back pain, Co I with Kimberly Williams, Ph.D., PI. Earlier versions 02-03.

NIH: Effects of thyroid disease on muscle strain injury, Co I with William Stauber PI., Submitted 10/02.

NIH: Neurological Disorders and Stroke: Alteration of GABA Signaling and Seizure Predisposition

NIH: Sex on pain facilitation in neuropathy $120,000/yr

NIH: NIDA 1RO1DA10562-01: Opioid induced pain facilitation and inhibition $130,000/yr .

NIH: NIDA 1RO1DA08128-01A3: Multiple opioid receptors modulating descending pain inhibition. $120,000/yr, 4 yrs.

USARMC 0112: Gender and stress-induced analgesia: role of Beta-endorphin in a brain area for anxiety and pain. $110,000/yr, 3 yrs.

FUNDING FOR CURRICULAR DEVELOPMENT

Reynolds Foundation: Teaching of Gerontological Aspects of Health Care, Co-I: 10% time and salary, yr. 2002-4. (not funded).

Office of the West Virginia Attorney General: Vitamins Project: Curricular Development in Dietary Supplements at West Virginia University, Co-I with Dr. Gregory Juckett P.I. 2003-2005 (not funded).

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Kimberly Williams, PhD, Christiaan Abildso, EdM, MPH, Kevin Larkin, PhD, Ed Doyle, MD, Beverly Epstein, MD, David Smith, PhD, Linda Cooper, MSW, MBA, Assessment of the Reliability and Validity of the Worst Day of the Week Functional Assessment in a Non-clinical Population. 66th Annual Scientific Meeting, American Psychosomatic Society, March 15, 2008, Baltimore, MD.

Kimberly Williams, PhD, Christiaan Abildso, EdM, MPH, Lois Steinberg*, PhD, Ed Doyle, MD, Beverly Epstein, MD, David Smith, PhD, Richard Gross, PhD, Gerry Hobbs, Linda Cooper, MSW, MBA. Effectiveness of Iyengar Yoga Therapy on Chronic Low Back Pain. Van Liere Research Day, April 22, 2008, Health Science Center, WVU and NIH Pain Consortium, May 22, 2008, NIH Campus, Bethesda, MD.

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CURRICULUM VITAE

William T, Stauber, PT, Ph.D., FACSM

Department of Physiology & Pharmacology
Division of Physical Therapy
West Virginia University
Morgantown, WV 26506-9229

Education:

Ph.D. Rutgers University, Physiology, August 1972.

M.S. Rutgers University, Physiology, August 1969.

B.S. Ithaca College, Physical Therapy, June 1967.

Licensure Information:

West Virginia, 000366. 1979-Present.

Certifications:

Certified Feldenkrais Practitioner

Employment and Positions Held:

Professor, Departments of Physiology and Pharmacology and the Division of Physical Therapy, Department of Human Performance and Applied Exercise Science, West Virginia University, Morgantown, WV, 1993-present.

Professor, Department of Neurology, West Virginia University, Morgantown, WV, 1985-2010.

Associate Professor, Department of Neurology, West Virginia University, Morgantown, WV, 1984-1985.

Associate Professor, Department of Physiology, West Virginia University, Morgantown, WV, 1981-1985.

Assistant Professor, Department of Physiology, West Virginia University, Morgantown, WV, 1979-1981.

Associate, Department of Physiology and Biophysics, University of Iowa, Iowa City, IA, 1976-1979.

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30. Stauber, W. T., F. Gauthier, and S.H. Ong. 1981. Identification and possible regulation of muscle cell lysosomal protease activity by exogenous protease inhibitors. Acta Biol. Med. Germ. 40: 1317-1322.

29. Stauber, W.T. and S.H. Ong. 1981. Fluorescence demonstration of Cathepsin B in skeletal, cardiac and vascular smooth muscle. J. Histochem. Cytochem. 29: 866-869.

28. Trout, J. J., W. T. Stauber, and B. A. Schottelius. 1981. Degeneration and regeneration in denervated tonic and phasic skeletal muscle: Morphology and acid phosphatase cytochemistry. Virchow's Archiv. B. Cell Path. 38: 67-76.

27. Trout, J. J., W. T. Stauber, and B. A. Schottelius. 1981. Skeletal muscle myopathy caused by Triton WR-1339. Virchow's Archiv. B. Cell Path. 38: 77-88.

26. Hill, S. R. and W. T. Stauber. 1981. Changes in proteolytic enzyme activity of denervated rat skeletal muscle. WV Med. J. 77: 312-313.

25. Stauber, W. T., and S.H. Ong. 1981. Extravasation of albumin and IgG in normal tonic and phasic muscles of the rat. Histochem. J. 13: 1009-1015.

24. Stauber, W. T., S.H. Ong, and R. S. McCuskey. 1981. Selective extravascular escape of albumin into the cerebral cortex of the diabetic rat. Diabetes 30: 500-503.

23. Trout, J. J., Stauber, W. T., and B. A. Schottelius. 1981. Increased autophagy in chloroquine-treated tonic and phasic muscles: An alternative view. Tissue and Cell 13: 393-401.

22. Trout, J. J., Stauber, W. T., and B. A. Schottelius. 1981. Further studies on a unique T-tubular acid phosphatase in avian skeletal muscle. Histochem. J. 13: 445-442.

21. Trout, J. J., Stauber, W. T., and B. A. Schottelius. 1981. Chloroquine induced alterations in phasic muscles. II. Sarcoplasmic reticulum. Exp. Mol. Path. 34: 237-243.

20. Stauber, W. T. and S.H. Ong. 1981. Fluorescence demonstration of dipeptidyl peptidase II in skeletal, cardiac, and vascular smooth muscles. J. Histochem. Cytochem. 29: 672-677.

19. Stauber, W. T. and B. A. Schottelius. 1981. Isopycnic-zonal centrifugation of plasma membrane, sarcoplasmic reticular fragments, lysosomes and cytoplasmic proteins from phasic skeletal muscle. Biochim. Biophys. Acta 640: 285-297.

18. Stauber, W. T., J. J. Trout, and B. A. Schottelius. 1981. Exocytosis of intact lysosomes from skeletal muscle after chloroquine treatment. Exp. Molec. Pathol. 34: 87-93.

17. Stauber, W. T., A. M. Hedge, J. J. Trout, and B. A. Schottelius. 1981. Inhibition of lysosome function in red and white skeletal muscles by chloroquine. Exp. Neurol. 71: 295-306.

16. Trout, J. J., W. T. Stauber, and B. A. Schottelius. 1979. A unique acid phosphatase location: The transverse tubule of avian fast muscle. Histochem. J. 11: 417-423.

15. Trout, J. J., W. T. Stauber, and B. A. Schottelius. 1979. Cytochemical observations of two distinct acid phosphatase-reactive structures in anterior latissimus dorsi muscles. Histochem. J. 11: 223-230.

14. Stauber, W. T., A. M. Hedge, and B. A. Schottelius. 1979. Alterations in lysosomes, catalase-containing organelles, mitochondria, and plasma membrane fragments from hypertensive rat aorta and caudal artery. Blood Vessels 16: 17-25.

13. Ferren, L. G., W. T. Stauber, and G. Kalnitsky. 1978. Differential centrifugation studies of guinea pig lung proteases. Proc. Soc. Exp. Biol. Med. 159: 239-244.

12. Stauber, W. T., C. T. January, and B. A. Schottelius. 1977. Potentials in mammalian skeletal muscle from collagenase-treated tissue. Experientia 33: 1614-1615.

11. Stauber, W. T., A. M. Hedge, and B. A. Schottelius. 1977. Studies on the possible physiological controls of skeletal muscle proteases. Acta Biol. Med. Germ. 36: 1645-1652.

10. Stauber, W. T., J. W. C. Bird, and B. A. Schottelius. 1977. Catalase: An enzymatic indicator of the degree of skeletal muscle wasting. Exp. Neurol. 55: 381-389.

9. Stauber, W. T., A. M. Hedge, and B. A. Schottelius. 1976. On the ion-stimulated autolytic capability of ALD and PLD muscle homogenates. Life Sciences 18: 1441-1446.

8. Stauber, W. T. and B. A. Schottelius. 1975. Biochemical and physiological differences between avian ALD and PLD muscle subcellular fractions. Cytobios 14: 87-100.

7. Stauber, W. T. and B. A. Schottelius. 1975. An isopycnic-zonal centrifugation study of smooth muscle organelles isolated from hog carotid artery. Proc. Soc. Exp. Biol. Med. 150: 529-533.

6. Stauber, W. T. and B. A. Schottelius. 1975. Calcium uptake by subcellular fractions of denervated anterior and posterior latissimus dorsi muscles. Exp. Neurol. 48: 534-541.

5. Stauber, W. T. and B. A. Schottelius. 1975. Enzyme activities and distribution following denervation of anterior and posterior latissimus dorsi muscles. Exp. Neurol. 48: 524-533.

4. Stauber, W. T., P. G. Canonico, A. A. Milanesi, and J. W. C. Bird. 1975. Lysosomal enzymes in aquatic species. IV. Distribution and particle properties of muscle lysosomes of the lobster, Homarus americanus. Comp. Biochem. Physiol. 50: 379-384.

3. Stauber, W. T. and J. W. C. Bird. 1974. Subcellular distributions of catalase from rat skeletal muscle homogenates. Cytobios 9: 83-87.

2. Stauber, W. T. and J. W. C. Bird. 1974. S-r zonal fractionation studies of rat skeletal muscle lysosome-rich fractions. Biochim. Biophys. Acta 338: 234-245.

1. Bird, J. W. C., T. Berg, A. Milanesi, and W. T. Stauber. 1969. Lysosomal enzymes in aquatic species. I. Distribution and particle properties of muscle lysosomes of the goldfish. Comp. Biochem. Physiol. 30: 457-468.

Peer Reviewed Scientific and Professional Presentations:

75. Chafin, A., Lewis, J. and W. Stauber. Somatic afferent stimulation to improve patient outcomes: fMRI imaging. WVCTSI Annual Meeting, 2016.

74. Pistilli, E.E., Bohlen, J. and W.T. Stauber. Effects of One-Week Sodium Nitrite Supplementation on Endurance Exercise and Muscle Fatigability in Mice (ACSM 2015).

73. Petrone, A., Stauber, W.T., and J.W. Simpkins. Sodium nitrite prevents glutamate toxicity in HT22 cells by preserving mitochondrial function. Neuroscience 2013.

72. Stauber, W.T. and M.L. Erickson. The development of interactive, computer-based exercises using commercially available software for teaching electrotherapy skills to DPT students. CSM 2010 San Diego, CA.

71. Stauber, W.T. Measurement of muscle pain in rats subjected to repeated strains. J. Musculoskeletal Pain 15: S38, 2007.

70. Stauber, W.T. Can inflammation and pain be prevented in strain-injured skeletal muscles? NORA Symposium 2006: Research Makes A Difference, Washington, DC April 18-20, 2006 (Invited speaker).

69. Liparulo, T.L. and W.T. Stauber. Trypan Blue positive myofibers increased with time following a single bout of repeated muscle stretches. Medicine and Science in Sports & Exercise. 36(5):S289, 2004.

68. Willems, M. E. T., and W.T. Stauber. Streptomycin attenuated histopathologic changes following stretches of activated rat skeletal muscles. Medicine and Science in Sports & Exercise. 36(5): S340, 2004.

67. Smith, C. A., Waters, C., Tain, Y. L., Baylis, C., Alway, S. E., and W.T. Stauber. Nitric Oxide Synthase in skeletal muscle repair following strain injury. Medicine and Science in Sports & Exercise. 36 (5), S2, 2004.

66. Stauber, W.T. and M. E. T. Willems. Muscle specific atrophy after 6 weeks of overtraining with eccentric muscle actions in rats. Medicine and Science in Sports and Exercise 35 (5), S238, 2003.

65. Willems, M. E. T. and W.T. Stauber. Low-frequency fatigue increases with the number of stretches of activated rat skeletal muscles. Medicine and Science in Sports and Exercise 35 (5), S144, 2003.

64. Willems, M. E. T., Miller, G. R., and W.T. Stauber. Is active force production of skeletal muscles altered by collagen content? Fourth World Congress of Biomechanics, Calgary, Canada, Aug.4-9, 2002.

63. Willems, M. E. T. and W.T. Stauber. Inter-stretch rest time is important for development of pathology from stretches of activated muscles. Medicine and Science in Sports and Exercise 34 (5), S184, 2002.

62. Willems, M.E.T. & Stauber, W.T. Deficits in isometric force but not peak stretch force depend on the activation level during stretches of skeletal muscles. American Society of Biomechanics, San Diego, CA, USA, August 8-11, 2001.

61. Willems, M. E. T. and W.T. Stauber. Force deficits of rat plantar flexor muscles after ankle rotations with constant velocity or acceleration. Medicine and Science in Sports and Exercise 33 (5), S296, 2001.

60. Stauber, W. T. and M.E.T. Willems. Length-dependent fatigue in rat plantar flexor muscles after resistance training. Medicine and Science in Sports and Exercise 33 (5), S262, 2001.

59. Smith, C.A., Stauber, W.T., Alway, S.E., and G.R. Miller. Transforming growth factor-? in skeletal muscle strain injury. Medicine and Science in Sports and Exercise 33 (5), S230, 2001.

58. Stauber, W.T. Soft Tissue Pathomechanics and its Application to Ergomomics: Skeletal Muscle. Proceedings of the 14th Triennial Congress of the International Ergonomics Association and 44th Annual Meeting of the Human Factors and Ergonomics Society, San Diego, CA August 8, 2000 (Invited speaker).

57. Willems, M. E. T. and W.T. Stauber. Gender differences in force deficits after stretches of active rat skeletal muscles. Physiologist 43 (4): 358, 2000.

56. Stauber, W. T. and M.E.T. Willems. Force deficits after active stretches of rat skeletal muscles with reduced collagen cross-links. Physiologist 43 (4): 367, 2000.

55. Stauber, W. T. and M.E.T. Willems. Fatigue by concentric contractions and recovery in resistance trained rat muscles. Medicine and Science in Sports and Exercise 32 (5), S184, 2000.

54. Willems, M. E. T. and W.T. Stauber. Decline in performance by active stretches of skeletal muscles in young and old rats. Medicine and Science in Sports and Exercise 32 (5), S323, 2000.

53. Smith, C.A., Stauber, W.T., Miller, G.R., and F.D. Stauber. Recovery of rat soleus muscle after 6 weeks repetitive strain. Medicine and Science in Sports and Exercise 32(5), S323, 2000.

52. Willems, M. E. T. and W.T. Stauber. Fast but not slow ankle rotations modify stress-relaxation of active skeletal muscle. American Society of Biomechanics, Pittsburgh, USA, October 20-23, 1999.

51. Stauber, W. T. & Willems, M. E. T. Ankle position during isometric contractions alters stretch-induced force deficits of rat plantar flexor muscles. Med. Sci. Sports Exerc. 31(5), S74, 1999.

50. Willems, M. E. T. and W.T. Stauber. Performance of rat plantar flexor muscles by active stretching during ankle rotations and isometric contractions. Med. Sci. Sports Exerc. 31(5), S74, 1999.

49. Willems, M.E.T. and W. T. Stauber. 1998. Rat Plantar-flexor force during concentric and isometric contractions in vivo. Proceedings of the North American Society of Biomechanics, Waterloo, Canada.

48. Stauber, W.T. and C.A. Smith. 1996. Cell proliferation in over-loaded rat soleus muscles: Myofiber splitting vs. myogenesis. Physiologist 39(5): A92.

47. Stauber, W.T., Barill, E.R., Stauber, R.E., and G.R. Miller. 1996. Effect of a standardized, submaximal fatigue protocol on the maximal power output of the quadriceps muscles in college aged females. Muscle & Nerve, Suppl 4., S52.

46. Stauber, W.T., Fritz, V.K., and K.K. Knack. 1994. Connective tissue response to muscle damage In: Blankevoort, L and J.G.M. Kooloos, (eds), Stichting World Biomechanics, Nijmegen, Abstracts, Vol. II: 122b. (Invited Speaker).

45. Clarkson, P.M., Fritz, V.K. and W.T. Stauber. 1989. Extracellular matrix disruption in human muscle resulting from eccentric muscle action. Med. Sci. Sports Exerc. 21: S80.

44. Stauber, W.T. Exercise-induced muscle damage: Good or evil? Australian Sports Medicine Federation National Scientific Conference on Controversial Issues in Sports Medicine. Adelaide, SA, October 29- November 1, 1987. (Invited speaker).

43. Stauber, W.T. 1987. Exercise and Aging: Practical Applications for Physiology. Phys. Ther. 67: 734.

42. Stauber, W.T. and V.K. Fritz. 1987. Characterization of connective tissue components in rat muscles injured by lengthening contractions. Med. Sci. Sports Exerc. 19: S36.

41. Dahlmann, B., Kuehn, L., Kopp, F., Reinauer, H., and W.T. Stauber. Non-lysosomal high-molecular mass cysteine proteinases from muscle tissue. 2nd International Congress on Proteases: Potential Role in Health and Disease, Rothenburg ob der Tauber, FRG, May 17-20, 1987.

40. Fritz, V., Dahlmann, B., and W. Stauber. 1987. Characterization of rat skeletal muscles injured by lengthening contractions. Fed. Proc. 46: 408.

39. Stauber, W.T., Vogelbach, D.W., Fritz, V.K. and J.E. Riggs. Role of lysosomal proteases in muscular dystrophy: Degeneration or regeneration? International Symposium on Adaptive Mechanisms of Muscle, Szeged, Hungary, July 2-5, 1986.

38. Hart, D.L., Parsons, S.E. and W.T. Stauber. 1986. Effect of velocity on force oscillations during maximal voluntary exercise. Physical Therapy 66: 752.

37. Heath, R., Lewis, R.W., Grisley, C.H., Stauber, W.T., Kuehn, L., and B. Dahlmann. Neutral proteinases involved in muscle protein breakdown. 6th International Symposium on Intracellular Protein Catabolism, Wernigerode, GDR, April 22-26, 1986.

36. Kay, J., Heath, R., Lewis, R.W., Dahlmann, B., Kuehn, L., and W.T. Stauber. Muscle proteinases and their inhibitors in muscular dystrophy. Symposium on Physiological, Clinical and Diagnostic Aspects of Proteolysis. Jerusalem, Israel. September 4-5, 1985.

35. Bennett, J.G. and W.T. Stauber. Evaluation and treatment of anterior knee pain using eccentric exercise for testing and training. Masters Games Sports Medicine Symposium, Toronto, Canada, August 8-10, 1985.

34. Hart, D.L., Miller, L.C. and W.T. Stauber. 1985. Effect of cooling on force oscillations during maximal eccentric exercise. Physical Therapy 65(5): 723-724.

33. Stauber, W., Fritz, V., Dahlmann, B., Gauthier, F., Kirschke, H. and R. Ulrich. Fluorescence methods for localizing proteinases and proteinase inhibitors in skeletal muscle. Micro 84, London, UK, July 10-13, 1984. Invited Speaker.

32. Stauber. W.T. Localizations of four lysosomal proteases in experimental allergic encephalomyelitis. 5th International Symposium on Intracellular Protein Catabolism, Airlie, VA., May 29 - June 2, 1984. Invited Speaker.

31. Stauber, W.T., Riggs, J.E., S.S. Schochet. 1984. Fluorescence protease histochemistry in neuromuscular disease. Neurology (Suppl 1) 34: 194.

30. Stauber, W.T., Vogelbach, D.W., and J.E. Riggs. 1984. An injury model for Duchenne Muscular Dystrophy. Neurology (Suppl 1) 34: 160.

29. Stauber, W.T., Schochet, S.S., Riggs, J.E., Gutmann, L., and T.W. Crosby. 1984. Nemaline Rod Myopathy: Evidence for a protease deficiency. Neurology (Suppl 1) 34: 82.

28. Esnard, F., A. LePape, W.T. Stauber, J.D. Guitton and F. Gauthier. 1983. Changes in concentration of rat serum proteinase inhibitors during experimental diabetes. Possible relevance to non-enzymatic glycosylation. 2nd Symposium on Inflammation Markers, Lyon, France (June 27-30, 1983).

27. Stauber, W. T. 1983. Fluorescence protease histochemistry. J. Histochem. Cytochem. 31(A): 262.

26. Stauber, W. T. 1982. Alterations in protease content following electrical stimulation. Symposium on Electrotherapy. (August 19, 1982). Invited Speaker.

25. Stauber, W. T. and V. K. Fritz. 1982. Studies of muscle proteases. Protein turnover, growth and muscle wasting. Rottnest Island, Australia. (August 11-15, 1982). Invited Speaker.

24. Stauber, W. T. 1982. Fluorescence protease histochemistry. Cytochemistry of hydrolases; fluorescent and electron microscopic approaches. Workshop Instructor. US - Japan Histochem. Cytochem. Congress, Vancouver, B.C. Canada. (July 20-25, 1982).

23. McCuskey, R., R. Urbaschek, P. McCuskey, N. Sacco, W. Stauber, C. Pinkstaff, and B. Urbaschek. 1982. Studies of the liver in C3H/HeJ endotoxin-resistant mouse. Anat. Rec. 202: 123A.

22. McCoy, K. and W. T. Stauber. 1981. Cathepsin B activity in the rat soleus muscle after immobilization in a shortened position. Physical Therapy 61: 707.

21. Hill, S. R. and W. T. Stauber. 1981. Changes in the content of the proteolytic enzyme cathepsin B in denervated rat skeletal muscle. Physical Therapy 61: 706-707.

20. Stauber, W. T., Gauthier, F., and S.H. Ong. Identification and possible regulation of muscle cell lysosomal protease activity by exogenous protease inhibitors. Fourth International Symposium on Intracellular Protein Catabolism. Reinhardsbrunn, GDR. (May 21-27, 1981). Invited Speaker.

19. Trout, J. J., Stauber, W. T., and B. A. Schottelius. 1981. Further studies on T-tubular acid phosphatase in avian PLD muscle. J. Histochem. Cytochem. 29: 897.

18. Stauber, W. T. 1980. Lysosomes and skeletal muscle atrophy. 28th IUPS Congress Satellite Symposium "Mechanism of Muscle Adaptation to Functional Requirements", Szeged, Hungary (July 10-12, 1980), Invited Speaker.

17. Trout, J. J., W. T. Stauber, and B. A. Schottelius. 1979. Lysosomal alterations in chloroquine treated avian skeletal muscles. J. Cell. Biol. 83: 282a.

16. Trout, J. J., W. T. Stauber, and B. A. Schottelius. 1979. Cytochemical localization of acid phosphatase in the avian posterior latissimus dorsi muscles. J. Histochem. Cytochem. 27: 712.

15. Trout, J. J., W. T. Stauber, and B. A. Schottelius. 1978. Localization of acid phosphatase in avian anterior (ALD) and posterior (PLD) latissimus dorsi muscles. 15th Annual Electron Microscopy Colloquium. Ames, Iowa (May 11-12).

14. Stauber, W. T. 1977. Problems in electron microscopic cytochemistry. Iowa Microbeam Society Fall Conference on Tracer Molecules in Electron Microscopy. Iowa City, Iowa (September 30). Invited Speaker.

13. Stauber, W. T., A. M. Hedge, J. J. Trout, and B. A. Schottelius. 1977. Origin of skeletal muscle lysosomes. Symposium on Protein Turnover and Lysosomal Function. SUNY/AB, Buffalo, New York (August 21-26).

12. Stauber, W. T., A. M. Hedge, J. J. Trout, and B. A. Schottelius. 1977. Biochemical and morphological studies on the heterogeneity of the sarcoplasmic reticulum of slow (ALD) and fast (PLD) skeletal muscles. Proc. Intl. Union Physiol. Sci. 13: 715.

11. Stauber, W. T., A. M. Hedge, and B. A. Schottelius. 1977. Possible physiological controls of skeletal muscle proteases. Third International Symposium on Intracellular Protein Catabolism. Reinhardsbrunn, GDR (May 30-June 4). Invited Speaker.

10. Stauber, W. T., A. M. Hedge, and B. A. Schottelius. 1977. Possible hypertrophy of the plasma membrane in hypertensive vascular smooth muscle. Fed. Proc. 36: 465.

9. Stauber, W. T. 1976. Separation of skeletal muscle organelles from anterior and posterior latissimus dorsi muscles by differential and zonal centrifugation. Fifth International Symposium on Subcellular Methodology. Guilford, United Kingdom (July 22-24). Invited Speaker.

8. Stauber, W. T. and B. A. Schottelius. 1975. A possible role of lysosomes and other organelles in post-denervation catabolism of avian posterior latissimus dorsi. J. Cell Biol. 67: 417a.

7. Stauber, W. T. 1975. On the lysosomal role in skeletal muscle catabolism following denervation. Second International Symposium on Intracellular Protein Catabolism. Ljubljana, Yugoslavia (May 26-30). Invited Speaker.

6. Stauber, W. T. and B. A. Schottelius. 1974. Post-denervation changes in subcellular fractions from ALD and PLD muscles. Physiologist 17(3): 337.

5. Stauber, W. T. and B. A. Schottelius. 1973. Subcellular fractionation studies of red and white avian skeletal muscle. Physiologist 16(3): 463.

4. Stauber, W. T. 1972. Origin of lysosomes in skeletal muscle. Third International Research Conference, "Lysosomes in Cell Pathology", Louvain, Belgium (September 12-16). Invited Speaker.

3. Stauber, W. T. and J. W. C. Bird. 1972. Acid hydrolase activity in the sarcoplasmic reticulum of rat skeletal muscle. Physiologist 15(3): 273.

2. Stauber, W. T. and J. W. C. Bird. 1971. Catalase distribution in rat skeletal muscle. N. J. Acad. Sci. Bull., 16: 71-72.

1. Stauber, W. T. and J. W. C. Bird. 1969. Characterization of lysosomes in lobster muscle. N. J. Acad. Sci. Bull., 14: 57-58.

Membership in Scientific/Professional Organizations:

American College of Sports Medicine (Fellow)
American Physical Therapy Association – 1967 – Present (50 year member)
Sigma Xi (Lifetime member)

Consultative and Advisory Positions Held: Title or nature

MotionReality, Inc., Marietta, GA 2011. Consultant.
GalaxoSmithKline, Durham, NC, Sarcopenia: Documentation of Outcomes in Rats and Humans 2006. Consultant.
Chairman of the Medical and Scientific Advisory Board of MEDigital, Inc., Marietta, GA. 1998-2001.
President, Comptex, Inc., Morgantown, WV. 1982-2003 (Corp. was dissolved 4/2003).
Pfizer, Inc., New York, NY, Project Advisor, 1991.
Medical Advisory Board of the Chattanooga Corporation, Chattanooga, TN, 1983-1989.
Chattecx Corporation, Chattanooga, TN 1983-1989. Consultant.
Baltimore Therapeutic Equipment Co., Hanover, MD. 1991-2001. Consultant

VENKATESH SUNDARARAJAN, M.Pharm., Ph. D.
Department of Physiology and Pharmacology
Robert C. Byrd Health Sciences Center
64 Medical Center Drive,
West Virginia University School of Medicine, Morgantown, WV 26506
Tel: 304-293-9785|| E-Mail: venkatesh.sundararajan@hsc.wvu.edu

■ ACADEMIC APPOINTMENTS

May 2022 – Current
Associate Professor
Dept. of Physiology and Pharmacology, School of Medicine, West Virginia University, Morgantown, WV

Feb. 2018 – Apr. 2022
Assistant Professor
Dept. of Microbiology, Biochemistry and Molecular Genetics, Rutgers-NJMS, Newark, NJ

Jun. 2016 – Jan. 2018
Research Associate
Dept. of Microbiology, Biochemistry and Molecular Genetics, Rutgers-NJMS, Newark, NJ

Mar. 2011 – May. 2015
Postdoctoral Research Fellow
Dept. of Biochemistry and Molecular Biology, UMDNJ, Newark, NJ

■ ACADEMIC CREDENTIALS

2011 **Ph.D.** (Biomedical Sciences), Dr. M.G.R. University / All India Institute of Medical Sciences, India
2003 **M. Pharm** (Pharmaceutical Biotechnology), The TN Dr. M.G.R Medical University, India
2000 **B. Pharm** (Pharmaceutical Sciences), The TN Dr. MGR Medical University, India

■ RESEARCH SUPPORT

Ongoing

1. **R01 HL157335-01 A1** (received 7 percentile) **06/10/2022 - 05/31/2027**
   Role of the mitochondrial LonP1 in Ischemia and Reperfusion Injury Protection
   Role: Principal Investigator (30%)
   Source: **NIH/NHLBI**

2. **AHA-20TPA35420001** (Transformational project award, received <1 percentile (0.22) **06/01/2021 - 05/31/2024**
   Regulation of mitochondrial proteostasis by LonP1 in cardiac function and protection
   Role: Principal Investigator (10%)
   Source: **American Heart Association**

3. **AHA-19CDA34490016** (Career development award, received < 1 percentile (0.21) **07/01/2020 - 06/31/2023**
   Mitochondrial protein quality control in cardioprotection
   Role: Principal Investigator (28.5%)
   Source: **American Heart Association**

■ HONORS AND AWARDS

2008-2011 Senior Research Fellowship, Indian Council of Medical Research, New Delhi, India.
2009 Lalor Foundation travel Award, 2009, ASA meeting, PA, USA April 2009
2009 Department of Science and Technology (DST), New Delhi travel grant, PA, USA
2010 Young Investigator award, Genetics of Male Infertility symposium, Utah, USA, Feb 2010
2010 Lalor foundation travel award, 2010, ASA meeting, TX, USA, April 2010
2011 National Institute of Health travel award, ASA meeting, Canada, April 2011
2012 International Society of Andrology (ISA) award, ASA Meeting, Arizona, USA, 2012
2016 Selected and attended for National Research Mentoring Networking-CAN

	Professional Development and Grant writing Conference, Chicago, Oct.30- Nov.1, 2016
2017	Keystone Symposia scholarship "Mitochondria, Metabolism and Heart, May 8 - May 12, 2017, Santa Fe, New Mexico. (Oral talk and poster presentation)
2017	Seahorse (Agilent) Bioscience Travel Award, "Mitochondria, Metabolism and Heart, May 8 - May 12, 2017, Santa Fe, New Mexico
2019	Finalist, Outstanding Early Career Investigator Award, Asian Cardiovascular Symposium, BCVS, Boston, 2019.
2020	Research Intern, AHA-BCVS-mentorship program, at the laboratory of Dr. Elizabeth Murphy at NHLBI, National Institute of Health.
2020	Career Development Award (0.21 percentile), American Heart Association
2020	Associate Editor "Understanding molecular mechanisms in Diabetic Cardiomyopathy" *Frontiers in Cardiovascular Medicine*.
2021	Transformational Project Award (0.22 percentile), American Heart Association
2021	Poster Judge, 27th Graduate Research Symposium (March 11th), Rutgers- New Jersey Medical School.
2021, 2022	Member, MPPB study section
2022	Oral Session moderator, Asian Cardiovascular Symposium, BCVS, AHA 2022, Chicago,

■ MEMBER

2013- Current	Member, American Heart Association.
2019-Current	Member, South Asian Heart Research association (SARH)
2021- Current	Member, International Society for Heart Research (ISHR)
2022- Current	Member, Inhalation Toxicology, WVU
2022- Current	Associate Editor, Cardiovascular metabolism sec., Frontiers in Cardiovascular Medicine
2022- Current	Guest Editor, Special Issue in Biomolecules

■ REVIEWER (FELLOWSHIP/ GRANT APPLICATIONS)

2015 - Current	National Science Foundation (NSF).
2017 - Current	NASA Experimental Program to Stimulate Competitive Research (EPSCoR) Research
2017 - Current	American Heart Association
2021 - 2022	NIH, MPPB Study Section

■ MANUSCRIPT REVIEWER

■Clinical and Translational Medicine ■Cells ■Cell Communication and Signaling ■Cells Tissues Organs ■European Journal of Pharmacology ■Molecular Medicine ■Plos One ■Journal of Genetics ■Journal of Biomedical Research ■Oxidants and Antioxidants in Medical Science ■Histology and Histopathology ■Ind J Urol ■Reproductive Biology and Endocrinology ■Systems Biology in Reproductive Medicine ■Acta Biológica Colombiana ■In Vitro Cellular & Developmental Biology ■Reproductive BioMedicine Online ■Andrologia ■Medical Science Monitor ■International Journal of Reproduction, Contraception, Obstetrics and Gynecology ■Journal of Biomedical Science ■Journal of Assisted Reproduction and Genetics ■Journal of Chemical Neuroanatomy ■Reproductive Toxicology

Publon ID: https://publons.com/researcher/H-3837-2014/

■ RESEARCH PROFILE & CITATIONS

1. **NCBI:** https://www.ncbi.nlm.nih.gov/myncbi/browse/collection/51871890/?sort=date&direction=descending
2. **Google Scholar:** https://scholar.google.com/citations?user=YIJxFQoAAAAJ&hl=en
3. **Research Gate:** https://www.researchgate.net/profile/Venkatesh_Sundararajan

■ PEER-REVIEWED PUBLICATIONS

1. Sankar S, Jayabalan M, **Venkatesh S**, Ibrahim M. Effect of hyperglycemia on tbx5a and nppa gene expression and its correlation to structural and functional changes in developing zebrafish heart. Cell Biol Int. 2022 Sep 7. doi: 10.1002/cbin.11901.

2. Muthu S Sukumaran V and **Venkatesh S**. Editorial: Understanding Molecular Mechanisms in Diabetic Cardiomyopathy (DCM) Front. Cardiovasc. Med. 2022;9:965650.

3. Muthu S and **Venkatesh S**. A Commentary on "PI3K- α/mTOR/BRD4 inhibitor alone or in combination with other anti-virals blocks replication of SARS-CoV-2 and its variants of concern including Delta and Omicron". Clin. Transl. Disc. 2022;2:e87.

4. Lee J, Pandey AK, **Venkatesh S**, Thilagavathi J, Honda T, Singh K, Suzuki CK. Inhibition of mitochondrial LonP1 protease by allosteric blockade of ATP -binding and -hydrolysis via CDDO and its derivatives. J Biol Chem. 2022 Feb 10:101719. doi: 10.1016/j.jbc.2022.101719.

5. Sukumaran V, Gurusamy N, Yalcin HC, **Venkatesh S**. Understanding Diabetes Induced cardiomyopathy from the perspective of Renin Angiotensin Aldosterone System (RAAS) and associated co-factors. Pflügers Archiv: European Journal of Physiology Pflügers Archiv - European Journal of Physiology 2022; 474, 63–81.

6. S Srinivasan K, Pandey AK, Livingston A, **Venkatesh S**. Roles of host mitochondria in the development of COVID-19 pathology: Could mitochondria be a potential therapeutic target? Mol Biomed. 2021 Nov 23;2:38.

7. Oka SI, Byun J, Huang CY, Imai N, Ralda GE, Zhai P, Xu X, Kashyap SS, Warren JS, Maschek JA, Tippetts TS, Tong M, **Venkatesh S**, Ikeda Y, Mizushima W, Kashihara T, Sadoshima J. Nampt Potentiates Antioxidant Defense in Diabetic Cardiomyopathy. Circ Res. 2021 Jun 25;129(1):114-130.

8. **Venkatesh S***, Baljinnyam E*, Tong M, Kashihara T, Yan L, Liu T, Li H, Xie L, Nakamura M, Oka S, Suzuki CK, Fraidenraich D, and Sadoshima J (2020). Proteomic analysis of mitochondrial biogenesis in cardiomyocytes differentiated from human induced pluripotent stem cells. Am J Physiol Regul Integr Comp Physiol . 2021 Apr 1;320(4):R547-R562. (*First authors)

9. **S. Venkatesh*** and C.K. Suzuki*, Cell stress management by the mitochondrial LonP1 protease - Insights into mitigating developmental, oncogenic and cardiac stress, Mitochondrion 51 (2019) 46-61. **(* Corresponding authors).**

10. **Venkatesh S***, Li M, Saito T, Tong M, Rashed E, Mareedu S*, et al.* Suzuki CK * (2019). Mitochondrial LonP1 protects cardiomyocytes from ischemia/reperfusion injury in vivo. J Mol Cell Cardiol 128**:** 38-50. (* Corresponding authors).

11. **Venkatesh S**, Chauhan M, Suzuki C, & Chauhan N (2019). Bio-energetics Investigation of Candida albicans Using Real-time Extracellular Flux Analysis. J Vis Exp 19;(145).

12. Jeyapal GP, Krishnasamy R, Suzuki CK, **Venkatesh S**, & Chandrasekar MJN (2019). In-silico design and synthesis of N9-substituted beta-Carbolines as PLK-1 inhibitors and their in-vitro/in-vivo tumor suppressing evaluation. Bioorg Chem 88**:** 102913.

13. Nimmo GAM*, **Venkatesh S***, Pandey AK*, Marshall CR, Hazrati LN, Blaser S*, et al.* (2019). Bi-allelic mutations of LONP1 encoding the mitochondrial LonP1 protease cause pyruvate dehydrogenase deficiency and profound neurodegeneration with progressive cerebellar atrophy. Hum Mol Genet 28**:** 290-306. (***First authors**)

14. Pandey AK, & **Venkatesh S** (2019). Protein quality control at the interface of endoplasmic reticulum and mitochondria by Lon protease. Br J Pharmacol 176**:** 505-507 (* Corresponding author).

15. King GA, Hashemi Shabestari M, Taris KH, Pandey AK, **Venkatesh S**, Thilagavathi J*, et al.* (2018). Acetylation and phosphorylation of human TFAM regulate TFAM-DNA interactions via contrasting mechanisms. Nucleic Acids Res 46**:** 3633-3642.

16. Baljinnyam E, **Venkatesh S**, Gordan R, Mareedu S, Zhang J, Xie LH*, et al.* (2017). Effect of densely ionizing radiation on cardiomyocyte differentiation from human-induced pluripotent stem cells. Physiol Rep 5.

17. **Venkatesh S**, & Suzuki CK (2017). HSP60 Takes a Hit: Inhibition of Mitochondrial Protein Folding. Cell Chem Biol 24**:** 543-545.

18. Strauss KA, Jinks RN, Puffenberger EG, **Venkatesh S**, Singh K, Cheng I*, et al.* (2015). CODAS syndrome is associated with mutations of LONP1, encoding mitochondrial AAA+ Lon protease. Am J Hum Genet 96**:** 121-135.

19. Lu B, Lee J, Nie X, Li M, Morozov YI, **Venkatesh S***, et al.* (2013). Phosphorylation of human TFAM in mitochondria impairs DNA binding and promotes degradation by the AAA+ Lon protease. Mol Cell 49**:** 121-132.

20. Thilagavathi J, Kumar M, Mishra SS, **Venkatesh S**, Kumar R, & Dada R (2013). Analysis of sperm telomere length in men with idiopathic infertility. Arch Gynecol Obstet 287**:** 803-807.

21. Bernstein SH*, **Venkatesh S*,** Li M, Lee J, Lu B, Hilchey SP, Morse KM, Metcalfe HM, Skalska J, Andreeff M, Brookes PS, and Suzuki CK. The mitochondrial ATP-dependent Lon protease: a novel target in lymphoma death mediated by the synthetic triterpenoid CDDO and its derivatives. Blood 119: 3321-3329, 2012. **(* First authors**)

22. Thilagavathi J, **Venkatesh S**, & Dada R (2013). Telomere length in reproduction. Andrologia 45**:** 289-304.

23. **Venkatesh S**, Lee J, Singh K, Lee I, & Suzuki CK (2012). Multitasking in the mitochondrion by the ATP-dependent Lon protease. Biochim Biophys Acta 1823**:** 56-66.

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25. Thilagavathi J, **Venkatesh S**, Kumar R, & Dada R (2012). Segregation of sperm subpopulations in normozoospermic infertile men. Syst Biol Reprod Med 58**:** 313-318.

26. **Venkatesh S**, Shamsi MB, Deka D, Saxena V, Kumar R, & Dada R (2011). Clinical implications of oxidative stress & sperm DNA damage in normozoospermic infertile men. Indian J Med Res 134**:** 396-398.

27. **Venkatesh S**, Shamsi MB, Dudeja S, Kumar R, & Dada R (2011). Reactive oxygen species measurement in neat and washed semen: comparative analysis and its significance in male infertility assessment. Arch Gynecol Obstet 283**:** 121-126.

28. Dada R, Mahfouz RZ, Kumar R, **Venkatesh S**, Shamsi MB, Agarwal A*, et al.* (2011). A comprehensive work up for an asthenozoospermic man with repeated intracytoplasmic sperm injection (ICSI) failure. Andrologia 43**:** 368-372.

29. Kumar K, **Venkatesh S**, Sharma PR, Tiwari PK, & Dada R (2011). DAZL 260A > G and MTHFR 677C > T variants in sperm DNA of infertile Indian men. Indian J Biochem Biophys 48**:** 422-426.

30. Kumar R, Saxena V, Shamsi MB, **Venkatesh S**, & Dada R (2011). Herbo-mineral supplementation in men with idiopathic oligoasthenoteratospermia : A double blind randomized placebo-controlled trial. Indian J Urol 27**:** 357-362.

31. Shamsi MB, **Venkatesh S**, Pathak D, Deka D, & Dada R (2011). Sperm DNA damage & oxidative stress in recurrent spontaneous abortion (RSA). Indian J Med Res 133**:** 550-551.

32. **Venkatesh S**, Singh A, Shamsi MB, Thilagavathi J, Kumar R, Mitra DK*, et al.* (2011). Clinical significance of sperm DNA damage threshold value in the assessment of male infertility. Reprod Sci 18**:** 1005-1013.

33. **Venkatesh S**, Thilagavathi J, Kumar K, Deka D, Talwar P, & Dada R (2011). Cytogenetic, Y chromosome microdeletion, sperm chromatin and oxidative stress analysis in male partners of couples experiencing recurrent spontaneous abortions. Arch Gynecol Obstet 284**:** 1577-1584.

34. **Venkatesh S**, Kumar R, Deka D, Deecaraman M, & Dada R (2011). Analysis of sperm nuclear protein gene polymorphisms and DNA integrity in infertile men. Syst Biol Reprod Med 57**:** 124-132.

35. **Venkatesh S**, & Dada R (2011). An evolutionary insight into mutation of ATPase6 gene in primary ovarian insufficiency. Arch Gynecol Obstet 284**:** 251-252.

36. Shamsi MB, **Venkatesh S**, Kumar R, Gupta NP, Malhotra N, Singh N*, et al.* (2010a). Antioxidant levels in blood and seminal plasma and their impact on sperm parameters in infertile men. Indian J Biochem Biophys 47**:** 38-43.

37. Shamsi MB, **Venkatesh S**, Tanwar M, Singh G, Mukherjee S, Malhotra N*, et al.* (2010b). Comet assay: a prognostic tool for DNA integrity assessment in infertile men opting for assisted reproduction. Indian J Med Res 131**:** 675-681.

38. Dada R, **Venkatesh S**, Kumar K, & Shamsi MB (2010). Re: Decreased sperm DNA fragmentation after surgical varicocelectomy is associated with increased pregnancy rate: M. Smit, J. C. Romijn, M. W. Wildhagen, J. L. Veldhoven, R. F. Weber and G. R. Dohle J Urol 2010; 183: 270-274. J Urol 184**:** 1577; author reply 1578.

39. Dada R, Shamsi MB, **Venkatesh S**, Gupta NP, & Kumar R (2010). Attenuation of oxidative stress & DNA damage in varicocelectomy: implications in infertility management. Indian J Med Res 132**:** 728-730.

40. **Venkatesh S**, & Dada R (2010). Acridine orange binding to RNA interferes DNA fragmentation index calculation in sperm chromatin structure assay. Fertil Steril 94**:** e37, author reply e38.

41. **Venkatesh S**, Kumar M, Sharma A, Kriplani A, Ammini AC, Talwar P*, et al.* (2010). Oxidative stress and ATPase6 mutation is associated with primary ovarian insufficiency. Arch Gynecol Obstet 282**:** 313-318.

42. Kumar R, **Venkatesh S**, Kumar M, Tanwar M, Shasmsi MB, Kumar R*, et al.* (2009). Oxidative stress and sperm mitochondrial DNA mutation in idiopathic oligoasthenozoospermic men. Indian J Biochem Biophys 46**:** 172-177.

43. **Venkatesh S**, Deecaraman M, Kumar R, Shamsi MB, & Dada R (2009). Role of reactive oxygen species in the pathogenesis of mitochondrial DNA (mtDNA) mutations in male infertility. Indian J Med Res 129**:** 127-137.

44. Shamsi MB, **Venkatesh S**, Tanwar M, Talwar P, Sharma RK, Dhawan A*, et al.* (2009). DNA integrity and semen quality in men with low seminal antioxidant levels. Mutat Res 665**:** 29-36.

45. **Venkatesh S**, Riyaz AM, Shamsi MB, Kumar R, Gupta NP, Mittal S*, et al.* (2009). Clinical significance of reactive oxygen species in semen of infertile Indian men. Andrologia 41**:** 251-256.

46. **Venkatesh S**, Shamsi MB, & Dada R (2009). Re: Attenuation of oxidative stress after varicocelectomy in subfertile patients with varicocele: S.-S. Chen, W. J. Huang, L. S. Chang and Y.-H. Wei J Urol 2008; 179: 639-642. J Urol 181**:** 1964-1965; author reply 1965-1966.

47. Dada R, Kumar R, Shamsi MB, Tanwar M, Pathak D, **Venkatesh S***, et al.* (2008). Genetic screening in couples experiencing recurrent assisted procreation failure. Indian J Biochem Biophys 45**:** 116-120.

BOOK CHAPTERS

1. Lee, J., **Venkatesh** S., Lee I., and Suzuki, C.K., The mitochondrial ATP-dependent Lon protease. Handbook of Proteolytic Enzymes, 3rd Ed, Oxford, UK, 2011, Chapter- 782.

2. **S. Venkatesh**, R. Kumar, MB Shamsi, M Tanwar, M Kumar, D Pathak, R Kumar, N P Gupta , S Mukherjee , N Malhotra, TK Das, P Talwar, R K Sharma, and R Dada. Mitochondrial ATPase Gene Mutations Associated With Low Antioxidant Levels In Idiopathic Asthenozoospermic Indian Men. *Perspectives in Cytology and Genetics* 2007; 13: 263-272.

3. Shamsi MB, **Venkatesh** S, Tanwar M, Talwar P, Sharma RK, Mukherjee S, Kumar R, Gupta NP, Dada Rima. Characterization of sperm chromatin quality by Comet assay. *Perspectives in Cytology and Genetics* 2007; 13: 255-262.

4. **S. Venkatesh**, R. Kumar, D. Pathak, MB. Shamsi, M. Tanwar, M. Deecaraman and R. Dada. Role of the environment, occupational exposure, life style and diet on free radical-induced mitochondrial DNA damage and reproductive health. Editors: Sunil Kumar & R.R. Tiwari. Published by: Daya Publishing House, New Delhi. *Environmental & Occupational Exposures* (2010) Pages 78-101.

5. **S. Venkatesh**, M. Deecaraman and R. Dada. Testicular hyperthermia and its effect on male Reproductive health. Editors: Sunil Kumar & R.R. Tiwari. Published by: Daya Publishing House, New Delhi. *Environmental & Occupational Exposures* (2010) Pages 142-151

SELECTED PRESENTATIONS AT MEETINGS/CONFERENCES

Oral/Invited talk (Selected):

1. **Venkatesh S.** Mitochondrial Protein Quality Control by LonP1 in the Heart**.** Invited Faculty Seminar Series talk on March 10, 2022. Basic Biomedical Sciences, USD Sanford School of Medicine.
2. **Venkatesh S.** Mitochondrial Protein Quality Control by LonP1 in the Heart**.** Invited Seminar talk on Oct 18, 2021. School of Medicine, New York Medical College, NY.

3. **Venkatesh S.** Mitochondrial Protein Quality Control by LonP1 in the Heart**.** Invited Seminar talk on Oct 6, 2021. Department of Physiology, Augusta University, Augusta, Georgia
4. **Venkatesh S**, Tong M, Baljinnyam E, Murari A, Zhai P, Owusu-Ansah E, Fraidenraich D, Sadoshima J, Suzuki CK. Mitochondrial stress response by LonP1 in cardiac function and protection. Asian Cardiovascular Symposium, BCVS, Boston 2019, MA.
5. **Venkatesh S**, Toshiro Saito, Min Li, Satvik Mareedu, Peiyong Zhai, López-Otín Carlos, Junichi Sadoshima, Carolyn K. Suzuki. Mitochondrial Lon protease protects the heart against ischemia-reperfusion injury by reducing oxidative damage. Mitochondria, metabolism and Heart symposium at Keynote Symposia on Molecular and Cellular Biology, Santa Fe, New Mexico, May 8-12, 2017.
6. **Venkatesh** S., Bernstein S., Lee J., and Suzuki, C.K. Powering down proteolysis in the mitochondrion: Lon and ClpXP as potential anti-cancer drug targets" 4th Annual National Postdoc Appreciation Day Symposium, Sept.20, 2011, New Jersey.
7. **Venkatesh** S., Dada R. ROS levels, and DNA damage is associated with poor semen quality in varicocele" at Utah-Florence Symposium on the "Genetics of Male Infertility", Feb 4-6, 2010, Park City, Utah, USA

Poster presentation (selected):

1. **Sundararajan Venkatesh**, Min Li, Mingming Tong, Erdene Baljinnyam, Anjaneyalu Murari, Peiyong Zhai, Edward Owusu-Ansah, Diego Fraidenraich, Junichi Sadoshima, Carolyn K. Suzuki. Mitochondrial stress response by LonP1 in cardiac function and protection. First Annual Retreat, New York City Area Inter-Institutional Cardiovascular Seminar Series. June 14, 2019

2. **Sundararajan Venkatesh,** Toshiro Saito, Min Li, Satvik Mareedu, Peiyong Zhai, López-Otín Carlos, Junichi Sadoshima, Carolyn K. Suzuki. Mitochondrial Lon protease protects the heart against ischemia-reperfusion injury by reducing oxidative damage. Mitochondria, metabolism and Heart symposium at Keynote Symposia on Molecular and Cellular Biology, Santa Fe, New Mexico, May 8-12, 2017.

3. **S. Venkatesh**, R. Kumar, M. B. Shamsi, Sankalp Dudeja, Riaz A Mir, R Kumar, NP Gupta, R. Dada; Reactive oxygen species and sperm mitochondrial DNA mutations in infertile patients. American Society of Andrology (ASA) meeting April 4-7, 2008, Philadelphia., USA

4. Sundararajan **Venkatesh**, Rakesh Kumar, Monis Shamsi, Sankalp Dudeja, Rajeev Kumar, Narmada Gupta, Rima Dada. Mitochondrial DNA mutation analysis in semen and blood samples of infertile Oligo-asthenozoospermic (OA) Men. American Society of Andrology (ASA) meeting April 4-7, 2008, Philadelphia., USA

5. **Venkatesh** Sundararajan, Rakesh Kumar, Rajeev Kumar, Narmada P Gupta, Rima Dada. Oxidative Stress And Mitochondrial Mutation In Idiopathic Asthenozoospermic Men. American Society of Reproductive Medicine, November 8 - 12, 2008 San Francisco, CA, USA.

6. **S. Venkatesh**, R. Kumar, R. Kumar, NP. Gupta, RK. Sharma, RN. Bamezai, R. Dada. mtDNA mutation screening in blood and sperm of infertile oligo asthenozoospermic (OA) men. American Society of Human Genetics (ASHG) meeting 11-15 November 2008, Philadelphia, USA.

7. Rima Dada, Rakesh Kumar, **Venkatesh** Sundararajan, R K Sharma. Cytogenetic and Yq microdeletion analysis in couples experiencing recurrent IVF failure. Indian Journal of Clinical Biochemistry, December 2007, Vol. 22 (Suppl.), Pg- 221, P1.19 (Session: Cutting edge technologies in Clinical biochemistry)

■ TEACHING EXPERIENCE

Assistant Professor, Research (Dept. Micro, Biochem. & Mol. Genetics)
Jan' 18- Apr'22 ▸ Rutgers New Jersey Medical School, Newark, NJ

Role: Lecturing Seminars in Biomedical Science course (MSBS 5910Q) for Master's Students

Assistant Professor (Department of Pharmaceutical Biotechnology)
Dec '07- Oct '08 ▸ Sree Vidyanikethan College of Pharmacy, Tirupathi, India

Role: Teaching theory and practical to Pharmacy graduate students in the area of Drug development, Biotechnology & Genetic engineering. Instructed medical students on using methods or procedures for diagnosis and management of genetic disorders

Lecturer (Department of Pharmaceutical Biotechnology)
Jan ’07 – Nov’07 ▸ SRM University, Chennai, India

Role: Teaching theory and practicals to the graduate and post graduate students in the area of Biotechnology, Genetic engineering, Enzyme production, Tissue culture & rDNA technique
Screening natural products for various Pharmacological (Anti-diabetic, Anti-ulcer activities)

Lecturer (Department of Pharmaceutical Biotechnology)
Jan ’06 - Dec ’06 JSS University, Mysore, India

Role: Teaching theory and practicals to the graduate students in the area of pharmaceutical microbiology, Biotechnology, Genetic engineering, & rDNA technique

Lecturer (Department of Pharmaceutical Biotechnology)
Mar ’03 - Dec ’05 ▸ Maharaji College of Pharmacy, Chennai, India

Role: Teaching theory and practice to the B. Pharmacy graduate students in the area of pharmaceutical microbiology, Biotechnology, Genetic engineering, & rDNA technique. Guided students for their B.S research project on microsphere drug delivery system.

Karen A. Woodfork, Ph.D.
Curriculum Vitae

Date: November 8, 2022

Office Address: Department of Physiology & Pharmacology
Robert C. Byrd Health Sciences Center
West Virginia University
PO Box 9229
Morgantown, WV 26506-9229

Phone, Fax: (304) 293-1997 (phone), (304) 293-3850 (fax)

E-mail: kwoodfork@hsc.wvu.edu

Current Position: Teaching Professor
Dept. of Physiology & Pharmacology
West Virginia University

Education

Ph.D.	West Virginia University, Dept. of Pharmacology & Toxicology	1993
B.A.	Rice University, Physics, with biophysics specialization	1987

Postgraduate/Postdoctoral Training

Postdoctoral Fellowship	University of Virginia, Dept. of Pharmacology	1993 - 1995

Current Academic Appointment

Teaching Professor 2022 - present
Department of Physiology and Pharmacology
West Virginia University, Morgantown, WV

Previous Academic Appointments

Teaching Associate Professor 2008 - 2022
Department of Physiology and Pharmacology
West Virginia University, Morgantown, WV

Senior Lecturer 2004 – 2008
Note: classification of teaching faculty changed to “lecturer” for assistant-level adjuncts or “senior lecturer” for associate-level teaching faculty in 2004
Department of Biochemistry and Molecular Pharmacology (2004-2007)
Department of Physiology and Pharmacology (2007-2008)
West Virginia University, Morgantown, WV

Adjunct Associate Professor 2001 – 2004
Note: teaching faculty were classified as adjuncts at the time of my hire
Department of Pharmacology and Toxicology (2001)
Department of Biochemistry and Molecular Pharmacology (2002-2004)
West Virginia University, Morgantown, WV

National Research Council Senior Research Associate 1999 - 2000
Pathology and Physiology Research Branch, Health Effects Laboratory Division
National Institute of Occupational Safety and Health, Morgantown, WV

Assistant Professor 1995 - 1999
Department of Biology
Washington & Jefferson College, Washington, PA

Adjunct Assistant Professor 1994 - 1995
Department of Biology
Piedmont Virginia Community College, Charlottesville, VA

Other Appointments

Freelance Scientific Writer and Editor 2000

Awards and Honors

Foundation Award for Outstanding Teaching, West Virginia University 2021

MacLachlan Basic Sciences Teaching Award, WVU School of Medicine 2021, 2018 & 2015

Distinguished Teacher Award, WVU School of Medicine 2020

Office of Research and Graduate Education Impact Award, WVU School of Medicine 2019

Dean's Incentive for delivering excellence in medical education 2010 – 2022

Nominated for Distinguished Teacher Award, WVU School of Medicine 2015, 2018, 2019

Medical Education Scholarship Grant, WVU School of Medicine 2013

Dean's Award for Excellence in Education (one of seven recipients on a committee which received the award) WVU School of Medicine 2009

WVU School of Medicine's Local Legend Award for exemplary leadership 2006

Professional Societies

Member, International Association of Medical Science Educators (IAMSE)

Institutional Committees

Chair	School of Medicine Curriculum Committee Member, 2008 - present	2015 – present
Chair	School of Medicine Assessment Subcommittee Member, 2014 - present	2015 – present
Member	School of Medicine Course Directors' Committee Chair, 2011 - 2015	2007 - present
Member	School of Medicine Continuous Quality Improvement & LCME Steering Committee	2019 – present
Member	School of Medicine Curriculum Inventory Management Subcommittee	2015 – present
Member	School of Medicine Curriculum Planning Subcommittees (Foundations, Systems, Neuroscience)	2018 – 2020
Member	School of Medicine Integrated Curriculum Subcommittee (meets weekly)	2008 – present
Member	School of Medicine Curriculum Revision Subcommittee	2018
Member	School of Medicine Academy of Advisors	2011 - present
Member	Committee on Excellence in Education	2010 - present
Member	Dept. of Physiology & Pharmacology Strategic Planning Committee	2018
Member	Search Committee, Teaching Pharmacology Faculty	2018
Member	School of Medicine LCME Educational Programs Com.	2013 - 2014
Member	Dean's Evaluation Committee	2014
Member	Search Committee, Diabetes Pharmacology Faculty	2014
Member	Interprofessional Education Working Group	2011 – 2013
Member	School of Medicine Admissions Committee	2007 – 2008

Administrative Appointment

Director of Respirator Fit Testing, WVU Center for Inhalation Toxicology	2020 - 2021

Ad hoc Reviewer

AAMC Group on Education Affairs Grant Reviewer	2017
Golan's Pharmacology (Lippincott, Williams, Wilkins)	2011
Prep U question bank (Wolters-Kluwer)	2011

Editor, Textbook

Craig & Stitzel's Pharmacology 7th edition, with L. Fink & E. Davis	2014 – 2019

Undergraduate Medical Education

Medical Pharmacology (PCOL 801), course director (Fall 2010 - present),
lecturer and small groups coordinator (2001 - present)
Since Jan. 2021, Medical Pharmacology has been taught as two courses in our new curriculum (PCOL 812 and PCOL 820), for which I am director of both.

- Audience: 2nd year medical students
- Provide instruction on a wide variety of topics (currently provide 45% of total instruction in course).
- Develop lectures and active learning sessions in small and large group formats
- Counsel students in one-on-one meetings regarding study and test-taking strategies as well as explanations of course material
- Develop computer simulations for use in interactive, communicative activities (four simulations developed)
- Write and produce videos using time-lapsed drawing with voiceover and video of real-world analogies. Currently I have made eight public videos (and a couple linked just to the class, for class-specific content) at my channel, Five Minute Pharmacology: https://www.youtube.com/channel/UCjrrt9QfvTysjjmIH7evLJA.
- Develop self-directed learning activities using online discussion platforms

Summer Medical Pharmacology (PCOL 770, PCOL 801), course director (2007-pres.)

- Audience: medical, pharmacy, podiatric medicine, and dental students needing to remediate pharmacology; taken by students at health professional schools across the US and its territories.
- Manage and answer all student questions on all lecture recordings
- Write all new exam questions and manage day-to-day logistics of this course.

Graduate Health Professions Education

Pharmacology & Therapeutics (PCOL 760) (2003 - present)

- Audience: 2nd year dental students
- Provide 6 hours of lecture content

Applied Dental Pharmacology (PCOL 763) (2015-present)

- Audience: 3rd dental students
- Design and provide 6 hours of active learning

Pharmacology I and II (PCOL 743, PCOL 744) (2001 - 2017)

- Audience: 2nd year pharmacy students
- Provided 10 hours of lecture content

Undergraduate Health Professional Education

Drugs and Medicines (PCOL 449/549), 2004 – present; course co-director 2010-present

- Audience: exercise physiology (BS and MA) and other health sciences students
- Provide 18 hours of lecture content
- Design and provide 14 hours of active learning

Online Pharmacology (PCOL 260) (2003 - 2015)

- Audience: dental hygiene, nursing, and pre-pharmacy, pre-med undergraduates, consisting of students across the United States as well as international students
- Designed the entire content of the course (a comprehensive review of 45 different topics), including online lectures, assignments and exams

Applied Pharmacology (DTHY 445) (2006 - 2017)

- Audience: dental hygiene students (4th year)
- Design and implement a one-credit team-based learning course consisting of four three-day-long team-based learning.

Graduate Student Education

Teaching Practicum (PSIO 790) (2011 – present, alternate years offered)

- Audience: graduate students in basic sciences
- Lead a two-hour lecture/interactive session on writing effective exam questions

Advanced Pharmacology (PCOL 745) (2009 – 2012, 2019)

- Audience: graduate students in basic sciences
- Provide four hours of lecture and interactive activity

Postgraduate Courses and Workshops Directed

WVU Teaching Scholars Program, provided sessions on audience response systems, making videos for students, and designing self-directed learning activities, large group teaching methodology, as part of the Longitudinal Teaching Scholars and Summer Institute programs, once or twice per year, every year from 2008 - 2017 and 2020-21.

Selected Invited Lectures and Presentations:

Woodfork, K. *DIY Exam: Providing Test-Taking Practice and Promoting Communication*. AAMC Southern Group on Educational Affairs in Medical Education Special Interest Group, Faculty Development in Medical Education (FDME) lecture, July 20, 2021.

Woodfork, K*. Online Learning Communities for Facilitating Self-Directed Learning*. West Virginia University. November 14, 2019.

Fink, L. and Woodfork, K. *Writing Effective Exam Questions for Different Student Audiences*, West Virginia University, Nov. 15, 2012

Woodfork, K and Van Dyke, C. *Developing an Effective Toolbox for Online Teaching*, Walsh University, Canton OH, April 9, 2010.

Woodfork, K. *Developing an Effective Toolbox for Online Teaching in the Health Professions*, West Virginia University, April 23, 2009.

Journal Articles

Blachere FM, Lemons AR, Coyle JP, Derk RC, Lindsley WG, Beezhold DH, Woodfork K, Duling MG, Boutin B, Boots T, Harris JR, Nurkiewicz T, Noti JD. Face mask fit modifications that improve source control performance. Am J Infect Control. 2022 Feb;50(2):133-140. doi: 10.1016/j.ajic.2021.10.041. Epub 2021 Dec 16. PMID: 34924208; PMCID: PMC8674119.

Lindsley W.G., Blachere FM, Beezhold DH, Law BF, Derk RC, Hettick JM, Woodfork K, Goldsmith WT, Harris JR, Duling MG, Boutin B, Nurkiewicz T, Boots, T, Coyle, J, and JD Noti. (2021) A comparison of performance metrics for cloth face masks as source control devices for simulated cough and exhalation aerosols. Aerosol Science and Technology 55:10, 1125-1142, https://doi.org/10.1080/02786826.2021.1933377

Hedrick, Jason S. MA; Cottrell, Scott EdD; Woodfork, Karen PhD; Ferrari, Norman D. III MD West Virginia University School of Medicine, Academic Medicine: September 2020 - Volume 95 - Issue 9S - p S552-S555 https://doi.org/10.1097/ACM.0000000000003429

Woodfork KA, KS Schuller, and LJ Huffman. Cytokine and nitric oxide release by J774A.1 macrophages is not regulated by estradiol. Life Sciences 69:2287 – 2294. 2001. https://doi.org/10.1016/s0024-3205(01)01304-2

Wang S, Z Melkoumian, K Woodfork, C Cather, A Davidson, W Wonderlin, and J Strobl. Evidence for an early G1 ionic event necessary for cell cycle progression and survival in the MCF-7 human breast carcinoma cell line. J. Cell Physiol. 176(3):456-64, 1998. https://doi.org/10.1002/(sici)1097-4652(199809)176:3%3C456::aid-jcp2%3E3.0.co;2-n

Lindorfer MA, NE Sherman, KA Woodfork, JE Fletcher, DF Hunt, and JC Garrison. G protein γ subunits with altered prenylation sequences are properly modified when expressed in Sf9 cells. J. Biol. Chem. 271(31):18582-7, 1996. https://doi.org/10.1074/jbc.271.31.18582

Yasuda H, MA Lindorfer, KA Woodfork, JE Fletcher, and JC Garrison. Role of the prenyl group on the G protein γ subunit in coupling trimeric G proteins to A1 adenosine receptors. J. Biol. Chem. 271(31): 18588-95, 1996. https://doi.org/10.1074/jbc.271.31.18588

Wonderlin WF, KA Woodfork, and JS Strobl. Changes in membrane potential during the progression of MCF-7 human mammary tumor cells through the cell cycle. J. Cell. Physiol 165: 177-185, 1995. https://doi.org/10.1002/jcp.1041650121

Woodfork KA, WF Wonderlin, VA Peterson, and JS Strobl. Inhibition of ATP-sensitive K+ channels causes reversible cell cycle arrest of human breast cancer cells in tissue culture. J. Cell. Physiol. 162: 163-171, 1995. https://doi.org/10.1002/jcp.1041620202

Strobl JS, VA Peterson, and KA Woodfork. A survey of human breast cancer sensitivity to growth inhibition by calmodulin antagonists in tissue culture. Biochem. Pharmacol. 47(12): 2157-2161, 1994. https://doi.org/10.1016/0006-2952(94)90250-X

Houser WH and KA Woodfork. Evaluation of the 4S polycyclic aromatic hydrocarbon binding protein in the Harlan Sprague-Dawley rat. Carcinogenesis 11: 1165-1169, 1990. https://doi.org/10.1093/carcin/11.7.1165

Burrell R, DE Samuel, KA Woodfork, and G Norman. Evaluating time of death in white-tailed deer by protein analysis of skull bones. J. Wildlife Law Enforc. 2: 20-22, 1990.

Woodfork KA, and R Burrell. A BASIC computer program for calculation of CH50 values by probit analysis. Comput. Biol. Med 15: 133-136, 1985. https://doi.org/10.1016/0010-4825(85)90026-5

Published Peer-Reviewed Chapters

Woodfork, K. Paralytic Ileus, in *Xpharm: The Comprehensive Pharmacology Reference*, Ed. Bylund, DB, and Enna, SJ. Elsevier, New York. 2006.

Woodfork, K. Delayed Gastric Emptying, in *Xpharm: The Comprehensive Pharmacology Reference*, Ed. Bylund, DB, and Enna, SJ. Elsevier, New York. 2005.

Woodfork, K. Chronic Intestinal Pseudo-Obstruction, in *Xpharm: The Comprehensive Pharmacology Reference*, Ed. Bylund, DB, and Enna, SJ. Elsevier, New York. 2005.

Woodfork, K. Bronchiolitis, in *Xpharm: The Comprehensive Pharmacology Reference*, Ed. Bylund, DB, and Enna, SJ. Elsevier, New York. 2004.

Woodfork, K. Chronic Bronchitis, in *Xpharm: The Comprehensive Pharmacology Reference*, Ed. Bylund, DB, and Enna, SJ. Elsevier, New York. 2004.

Woodfork, K. Environmental Lung Disease, in *Xpharm: The Comprehensive Pharmacology Reference*, Ed. Bylund, DB, and Enna, SJ. Elsevier, New York. 2004.

Van Dyke, K, and K Woodfork. Histamine and Histamine Antagonists, in *Modern Pharmacology, 6th Edition*, Ed. Craig, R, and Stitzel R. Lippincott, Williams, and Wilkins, Philadelphia. 2004. 449-457

Woodfork, K, and K Van Dyke. Antiinflammatory and Antirheumatic Drugs, in *Modern Pharmacology, 6th Edition*, Ed. Craig, R, and Stitzel R. Lippincott, Williams, and Wilkins, Philadelphia. 2004. 423-439.

Van Dyke, K, and K Woodfork. Antiviral Drugs, in *Modern Pharmacology, 6th Edition*, Ed. Craig, R, and Stitzel R. Lippincott, Williams, and Wilkins, Philadelphia. 2004. 567-583.

Van Dyke, K, and K Woodfork. Therapy of Human Immunodeficiency Virus (HIV), in *Modern Pharmacology, 6th Edition*, Ed. Craig, R, and Stitzel R. Lippincott, Williams, and Wilkins, Philadelphia. 2004. 584-595.

Van Dyke, K, and K Woodfork. Light probes, in *Luminescence Biotechnology: instruments and applications*, Van Dyke, K, C Van Dyke, and K Woodfork, Ed., CRC Press, Boca Raton FL, 2002, 4 – 27.

Van Dyke, K., and K Woodfork, Instrumentation for the measurement of luminescence, in *Luminescence Biotechnology: instruments and applications*, Van Dyke, K, C Van Dyke, and K Woodfork, Ed., CRC Press, Boca Raton FL, 2002, 31 – 40.

Selected Abstracts Presented

Woodfork K. DIY Exams. MacPFD #14: Academia Disrupted: Innovations & Dilemmas Prompted by the COVID-19 Pandemic. McMaster University. May 15, 2021. Recording available at https://www.macpfd.ca/home/macpfd14-conference/macpfd14-short-woodfork

Woodfork K, Van Dyke, C and Smith DJ: Case-based computer simulations in medical pharmacology small group learning. Conference Proceedings from the 11th Annual Meeting of the International Association of Medical Science Educators, July 21 – 23, 2007.

Van Dyke, CJ, Woodfork, KA and Smith, DJ: An Assessment of the Use at Oman Medical College of Web-based Sound Files "Drug Buddy" as a guide to drug name pronunciation. International Association of Medical Science Educators Annual Meetings. July 2006.

Woodfork, K. and Van Dyke, C. Developing Effective Tools for Distance Learning in Undergraduate Pharmacology Scholarship and Innovation in Education Day, West Virginia University, April 2005.

Funk, A., Woodfork, K., DeBiase, C., Brister, C., Smith, D., and Kupchak, B. Learning Style as a Predictor of Performance in Undergraduate Pharmacology Course. Scholarship and Innovation in Education Day, West Virginia University, April 2005.

Van Dyke, C.J., Woodfork, K.A., and Smith, D.J. "Drug Buddy": a web-based educational resource providing sound files as a guide to drug pronunciation. 8th Annual Meeting of International Association of Medical Science Educators Annual Meetings. July 2004.

Lindorfer, M.A., Woodfork, K.A., Liu, W., Figler, R.A., Fletcher, J.E., Sherman, N., Hunt, D.L., and Garrison, J.C. Assay of Recombinant G Protein ⍰⍰ Specificity and Activity in Reconstituted Systems. Molecular Pharmacology Gordon Conference, Ventura, CA, Feb. 1995.

Strobl, J.S., Woodfork, K.A., and Wonderlin, W.F. Pharmacological Blockade of ATP-Sensitive Potassium Channels Causes G0/G1 Arrest of MCF-7 Human Breast Cancer Cells. The Endocrine Society, Anaheim, CA, June 1994.

Woodfork, K.A., Wonderlin, W.F., Van Dyke, K., and Strobl, J.S. The Effect of K+ Channel Blockers on Proliferation and Ca++-activated K+ Currents in MCF-7 Breast Cancer Cells. American Society for Cell Biology, Denver, CO, Nov. 1992. Mol. Bio. Cell 3:175a (1992).

Woodfork, K.A. and Strobl, J.S. Elevations in Intracellular Calcium Levels in MCF-7 Cells Following Epidermal Growth Factor Administration. American Association for Cancer Research, Houston, TX, May 1991. Proc. Amer. Assoc. Cancer Res. 32:211 (1991).

Houser, W.H., and Woodfork, K.A. Evaluation of the 4S Polycyclic Aromatic Hydrocarbon Binding Protein in Harlan Sprague-Dawley Rats. Society of Toxicology, Miami, FL, Feb. 1990. The Toxicologist 10:29 (1990).

Dutkiewicz, J., Tucker, J., Woodfork, K., and Burrell, R. The Identification of Extracellular Endotoxin Molecules by Immunoelectron Microscopy. Cotton Dust Research Conference, Nashville, TN, Jan, 1989. Proc Cotton Dust Res. Conf. 13: 111-114 (1989).

Books Edited

Editor (33%), *Craig and Stitzel's Illustrated Pharmacology.* Fink L, Woodfork K, Davis E (eds). 7th edition, Jaypee Brothers Medical Publishers (P) Ltd. This textbook which was to be published, originally in 2018. Jaypee closed its US office and later terminated our project. We had approximately 40 of 69 chapters completed at the time of the cancelation in the summer of 2019. I was an author of six chapters of the book, which had been reviewed and accepted by the editors, five of which were at the proof stage at the time of cancelation. Chapters included Histamine and Histamine Antagonists, Introduction to Inflammation, Nonsteroidal Anti-inflammatory Drugs, Disease-Modifying Antirheumatic Drugs, Immunomodulating Drugs, and Estrogens, Progestins, and SERMs.

Editor, in *Luminescence Biotechnology: instruments and applications*, Van Dyke, K, C Van Dyke, and K Woodfork, Ed., CRC Press, Boca Raton FL, 2002, 31 – 40.

Rec'd 10/25/11

CURRICULUM VITAE
(Updated: 10/11)

Stanley David Yokota

PERSONAL HISTORY:

Date of Birth:	April 25, 1949
Place of Birth:	Los Angeles, California, U.S.A.
Social Security No:	573-78-6469
Present Position:	Associate Professor Department of Physiology School of Medicine West Virginia University Morgantown, WV 26506
Telephone:	Office: (304) 293-1492 Home: (304) 594-2633

POSITIONS AND EDUCATION:

Associate Professor, Department of Physiology
West Virginia University, School of Medicine, 1992 - present

Assistant Professor, Department of Physiology
West Virginia University, School of Medicine, 1986-1992

Research Associate, Department of Physiology
University of Arizona, College of Medicine, 1979-1986
NIH Postdoctoral Fellow with Dr. William H. Dantzler
Professor of Physiology, Comparative Renal Physiology, 1979-1982

University of California at Riverside, Ph.D. in Biology, 1979

University of California at Riverside, B.A. in Biology, 1971

University of California at Los Angeles, Biology Major, 1968-1970

FELLOWSHIPS AND AWARDS:

Dean's Award for for Excellence in Service 2010, WVU School of Medicine

Nominated for Distinguished Teaching Award 2007, 2008, 2009, 2010, 2011
WVU School of Medicine

Faculty Senate Travel Award, West Virginia University, 1989

American Society of Zoologists Travel Award (NSF Grant DCB 89-02373), 1989
XIth International Symposium on Comparative Endocrinology,
Malaga, Spain

11/12-1002

L. P. Markey Research Fellowships 1986 and 1987
Mount Desert Island Biological Laboratory

NIH, New Investigator Research Award, 1983-1986

NIH, Public Health Service Individual Research Postdoctoral Fellowship, 1979-1982

NIH, Public Health Service Biomedical Graduate Fellowship, 1974-1975

NDEA, Title IV Graduate Fellowship, 1973-1974

Educational Opportunity Program Fellowships, 1971-1973, 1976-1977

RESEARCH GRANTS:

NSF Research Grant, Principal Investigator, IBN-9318753
"Regulation of Vertebrate Renal Function"
1994-1997 $180,000 (No Cost Extension to 6/98)

Biomedical Research Support Grant - WVU, Principal Investigator
Co-P.I. Ronald Millecchia
"Glomerular video morphometry of living glomeruli"
1994-1995 $8,000

NSF Research Grant, Principal Investigator, DCB-9018611
"Regulation of Vertebrate Renal Function"
1991-1994 $103,000

West Virginia University Faculty Senate Research Grant, Principal Investigator,
"Investigation of Glomerular Dynamics"
1991-1992, $5,000

American Heart Association Research Award, West Virginia Affiliate
Principal Investigator
"Regulation of glomerular hemodynamics by angiotensin"
1987-1989, $15,000

Biomedical Research Support Grant, West Virginia University,
Principal Investigator
"Development of isolated microperfused glomerulus preparation"
1987-1988, $5,000

NIH New Investigator Research Award, Principal Investigator, R23 AM332546
"Regulation of glomerular blood flow and filtration"
1983-1986, $154,800

L. P. Markey Research Fellowships, Mount Desert Island Biological Laboratory
"Regulation of elasmobranch renal function"
1986 and 1987, $15,000

NIH Individual Research Service Award, Principal Investigator, F23 AM05970
"Renal function in vertebrates"

1979-1982, $58,500

Member of NSF expedition to Great Barrier Reef, Australia, on Physiological Ecology of the Sea Snake (NSF PCM 79-18393, Dr. W. Dunson, P.I.)

University of California Intercampus Opportunity Fund Award, 1977

University of California Chancellor's Patent Award, 1976

INSTITUTIONAL GRANTS:

Authored:: CO6 Grant Proposal, "Construction of New Animal Facility Annex for West Virginia University" (1C06RR030016-01), PI Fred. Butcher, Budget $14,590,939. AWARDED 3/04/2010

Authored: G20 Grant Proposal, "Renovation for Animal Research Cores", PI Fred. Butcher, Budget $15,789,332.(not awarded)

PROFESSIONAL ACTIVITIES:

GRANT PANEL/STUDY SECTION MEMBERSHIP
National Science Foundation
Division of Integrative Biology and Neuroscience
Integrative Animal Biology Grant Advisory Panel Member
1995-1998: Fall and Spring Panels

REVIEWER FOR:
Grants:
National Science Foundation
Physiological Processes Section
Physiology and Behavior Program
Cell Biology Section
Journals:
American Journal of Physiology:
Heart and Circulatory Section
Renal and Electrolyte Section
Integrative, Regulatory and Comparative Section
Herpetologica
Journal of Experimental Zoology
Journal of Experimental Biology
Physiological Zoology
Ecology
Comparative Biochemistry and Physiology

CHAIRED SESSIONS AT:

American Physiological Society Meetings
Osmoregulation Session, Fall 1984, San Diego, CA

XIth International Symposium of Comparative Endocrinology
Workshop on Vertebrate Osmoregulation
May 1989, Malaga, Spain

ORGANIZED SYMPOSIA AT:

American Physiological Intersociety Meeting
"Advances in Reptilian and Amphibian Osmoregulation"
Co-organizer with Dr. S. Benyajati
San Diego CA, 1994

COMMITTEES:

DEPARTMENT
Physiology Faculty Search Committee 2008 – Open rank faculty Position
Physiology Faculty Search Committee 2000 – Assist/Assoc Professor Position
Physiology Faculty Search Committee 1999 – Assist. Professor
Physiology Faculty Search Committee 1994 - Assist Professor; search closed

Graduate Studies Committee
Department of Physiology, WVU, 1987 - 1993
Chair, 1988 - 1990
Shared Facilities Committee
1993 - present

COLLEGE OF MEDICINE
Opthalmology Academic Review Committee, 1994 (terminated)

HEALTH SCIENCE CENTER
Animal Facilities Planning Committee, Chair, 2001-2002
Search Committee, Assistant Director of OLAR 2005
Search Committee, Assistant Director of OLAR 2007-2008
Search Committee, Director of OLAR 2007-2009
Animal Facility Advisory Committee 2005-present
CO6 and G20 Grant Development Working Group *Leader*, 2009
Animal Facility Annex Construction Advisory Committee 2010 - present

UNIVERSITY

WVU Academic Integrity Committee
Nominated for membership 2011 – appointment pending
Ad hoc member – Investigation Committee 2011

WVU Biomedical Animal Facility Needs Assessment Project, Gaudreau Inc.,
Institutional Liason, 2008-2010

WVU Animal Care and Use Committee
Member 1991 – 12/2010
Chair 1997 – 12/2010
Search Committee – Director of Research Compliance 2009
University Graduate Council Program Review Committee
Reproductive Physiology Program Review – 1998-1999

GRADUATE THESIS AND DISSERTATION COMMITTEES:

Current:
Sulei Xu
Department of Physiology and Pharmacology

Xueping Zhou,
Department of Physiology and Pharmacology

Graduated:

Deborah Lenda, Doctoral Student, 2001
Department of Physiology

Brian Sauls, Doctoral Student, 2001
Department of Physiology

Timothy Nurkiewicz, Ph.D. 1999
Department of Physiology

Geoffrey Nase, Ph.D. 1997
Department of Physiology

Russell Lindermann, Ph.D. 1998
Department of Physiology

Daniel Borst, Ph.D. 1995
Department of Anatomy, WVU

Aihua Deng, Ph.D. 1993
Department of Physiology, WVU

Lara Frizzell, Ph.D.
Department of Pharmacology

Shyama Masilamani, Ph.D. 1994
Department of Physiology, WVU

Changbin Qiu, Ph.D. 1995
Department of Physiology

John Rafi, M.A. 1992
Department of Physiology, WVU

TEACHING EXPERIENCE:

Coordinator, Elementary Physiology, Physiology 241, 2004-2010
Lecturer, Elementary Physiology, Physiology 241
Renal, Body fluids and Acid-Base Section 2002-2011
Cell and Membrane Physiology Section 2004-2010

Lecturer, Human Function, Medical students
Cardiovascular Section 1986-2011
Renal Section 2004-2011
Body Fluids Section 2004-2011
West Virginia University 1998-2011

Coordinator, Advanced Physiology, PHYSIOL 491, 1997-2005

Lecturer, Advanced Physiology, PHYSIOL 491
Cardiovascular Section, 1987, 1990-2005
West Virginia University

Lecturer, Physiology for Dental Students
Cardiovascular Section WVU 2001

Lecturer, Medical Physiology, PHYSIOL 340
Cardiovascular Section
West Virginia University, 1986 - 1997

Lecturer, Graduate Physiology, PHYSIOL 350
Cardiovascular Section
West Virginia University, 1995

Instructor, Physiological Methods, PHYSIOL 342
Renal Section
West Virginia University, 1987-1989

Coordinator, Physiological Methods, PHYSIOL 342
West Virginia University, 1991

Lecturer, Human Physiology for Pharmacy Majors and Health Science Students
PSIO 480
Cardiovascular Section
University of Arizona, 1983-1985

Lecturer, Physiology for Biomedical Engineers, PSIO 410
Cardiovascular and Renal Sections
University of Arizona 1979-1981

Laboratory Instructor, Medical Physiology
Cardiovascular and Renal Labs
University of Arizona

Teaching Assistant, Department of Biology,
University of California at Riverside, 1971-1977
General Physiology, Human Physiology, Comparative Neurophysiology, Comparative Anatomy, Ornithology, General Biology, Herpetology, Ecology

PUBLICATIONS:

Dissertation: Water, Energy and Nitrogen Metabolism in the Desert Scorpion, *Paruroctonus mesaensis*
Advisor: Dr. Vaughan H. Shoemaker, Professor of Biology, University of California at Riverside

PUBLISHED PAPERS:

Yokota, S.D. and V.H. Shoemaker. 1981. Xanthine excretion in a desert scorpion, *Paruroctonus mesaensis*. Journal of Comparative Physiology B 142: 423-428.

Yokota, S.D. and S.S. Hillman. 1983. Adrenergic control of the anuran cutaneous hydroosmotic response. General and Comparative Endocrinology 53: 309-314.

Yokota, S.D. 1984. Scorpion feeding and excretion: Water and material balance. Journal of Experimental Biology 110: 253-265.

Yokota, S.D., S. Benyajati and W.H. Dantzler. 1985. Renal function in the sea snake: I. Glomerular filtration and water handling. American Journal of Physiology 249: R228-R236.

Benyajati, S., S. Yokota and W.H. Dantzler. 1985. Renal function in the sea snake: II. Na, K and Mg excretion. American Journal of Physiology 249: R237-R245.

Yokota, S.D., S. Benyajati and W.H. Dantzler. 1985. Comparative aspects of glomerular filtration in vertebrates. Renal Physiology 8: 193-221.

Navar, L.G., J.P. Gilmore, W. Joyner, M. Steinhausen, R. Edwards, P. Carmines, D. Casselas, B. Zimmerhackl and S. Yokota. 1986. Direct assessment of renal microcirculatory dynamics. Federation Proceedings 45:2851-2861.

Yokota, S.D. and S. Benyajati. 1986. Regulation of glomerular filtration rate in a marine elasmobranch, the dogfish (*Squalus acanthias*). Bull. Mt. Desert Island Biol. Lab. 26: 87-90.

Benyajati, S. and S.D. Yokota. 1987/1988. Hormonal control of glomerular filtration rate in a marine elasmobranch (*Squalus acanthias*). Bull. Mt. Desert Island Biol. Lab. 27: 56-58.

Yokota, S.D. 1989. Glomerular filtration dynamics in reptiles: Endocrine effects. In: Progress in Comparative Endocrinology. pp. 565-571. Wiley-Liss, NY.

Yokota, S.D. 1990. A preparation for the real-time analysis of glomerular dynamics. Pflugers Archiv. European Journal of Physiology 415: 501-503.

Benyajati, S. and S.D. Yokota. 1990. Renal effects of atrial natriuretic peptide in a marine elasmobranch. American Journal of Physiology 258 (Regulatory Integrative Comp. Physiol.): R1201-R1206.

Yokota, S.D. and W.H. Dantzler. 1990. Single nephron rates of glomerular blood flow in the ophidian kidney. American Journal of Physiology 258 (Regulatory Integrative Comp. Physiol.): R1313-R1319.

Reckelhoff, J.F., S.D. Yokota and C. Baylis. 1992. Renal autoregulation in mid-term and late-pregnant rats. American Journal of Obstetrics and Gynecology 166: 1546-1550.

Papenfuss, H.D., J.F. Gross and S.D. Yokota. 1992. Mathematical model of the filtration in the vascular network of the ophidian glomerulus. Biorheology 22(4): 399-410.

Brown, J.A., J.C. Rankin and S.D. Yokota. 1993. Glomerular haemodynamics and single nephron function. In: New Insights into Vertebrate Kidney Function. Cambridge University Press. pp. 1-44.

Schmidt, R.J., S. Yokota, T. S. Tracy, M. I. Sorkin and C. Baylis. 1999. Nitric oxide production is low in end-stage renal disease patients on peritoneal dialysis. Am. J. Physiol. 276 (Renal Physiol. 45): F794-F797

ABSTRACTS:

Yokota, S.D., S. Benyajati and W.H. Dantzler. 1982. Renal function in the sea snake, *Aipysurus laevis*. Federation Proceedings 41:1005.

Benyajati, S., S.D. Yokota and W.H. Dantzler. 1982. Secretion and reabsorption of Mg and K by the kidney of the sea snake, *Aipysurus laevis*. Federation Proceedings 41:1005

Yokota, S.D. and W.H. Dantzler. 1983. Measurement of single nephron glomerular blood flow in the ophidian kidney. Federation Proceedings 42: 474.

Benyajati, S., S.D. Yokota and W.H. Dantzler. 1983. Regulation of glomerular filtration rate by plasma K in reptiles. Federation Proceedings 42: 474.

Benyajati, S., S.D. Yokota and W.H. Dantzler. 1983. Regulation of glomerular filtration rate in reptiles. 1983 Proc. 29th Int. Union Physiol. Sci. 15: 316.

Benyajati, S., S.D. Yokota, W.H. Dantzler, I. Rubinoff and J.B. Graham. 1985. Renal response to feeding and salt-loading in the yellow-bellied sea snake, *Pelamis platurus*. Physiologist 28: 367.

Papenfuss, H.D., S.D. Yokota and J.F. Gross. 1986. Simulation of microcirculation and filtration in the ophidian glomerular capillary network. 14th Intenational Conference of European Society for Microcirculation. Linkoping, Sweden.

Papenfuss, H.D., J.F. Gross, T.W. Secomb and S.D. Yokota. 1987. Mathematical model of intermittent filtration in the glomerular network. Microcirculatory Soc. Abst. No. M110. Federation Proceedings 46:1538.

Yokota, S.D. and S. Benyajati. 1988. Hormonal control of glomerular function in the dogfish shark (Squalus acanthias). Federation Proceedings

Benyajati, S. and S.D. Yokota. 1989. Hormonal regulation of renal function during environmental dilution and volume loading in the spiny dogfish. XIth Int. Symp. Comparative Endocrinology.

Yokota, S., J.F. Reckelhoff, and C. Baylis. 1989. Renal autoregulatory ability in late pregnant rats exhibiting gestational hypotension. Am. Soc. Nephrology .

Yokota, S.D. 1990. Regulation on reptilian renal function by vasoactive hormones. Amer. Physiol. Soc., Orlando, FL. Physiologist 33: A-114.

Yokota, S.D. 1992. Autoregulation in the reptilian kidney. FASEB Journal 6(4): A1529.

Yokota. S.D. 1993. Regulation of reptilian renal and cardiovascular function by EDRF. International Union of Physiological Science. Glasgow, Scotland.

Yokota, S.D. 1994. Role of nitric oxide in the autoregulation of the reptilian kidney. FASEB Journal

Yokota, S.D. 2001. Effect of mesotocin and vasoactive intestinal peptide (VIP) on reptilian renal and cardiac function. Experimental Biology 2001. Federation of Societies for Experimental Biology.

Yokota, S.D. 2001. Mesotocin and VIP elicit diuresis and hypotension in reptiles. International Union of Physiological Sciences. Christchurch, New Zealand.

Yokota, S.D. 2002. Adrenergic regulation of reptilian renal function. Experimental Biology 2002. Federation of Societies for Experimental Biology. New Orleans, LA

INVITED ADDRESSES:

"Real-Time measurements of single nephron glomerular perfusion in reptilian kidneys" in American Physiological Society Symposium on Direct Assessment of Renal Microcirculatory Dynamics. Chaired by L.G. Navar and J.P. Gilmore. FASEB meeting, April 1986, St. Louis, MO.

"Glomerular filtration dynamics in reptiles: Endocrine effects". State-of-the-Art Lecture in symposium, Endocrine Aspects of Glomerular Function. XIth International Symposium on Comparative Endocrinology, Chaired by E. Skadhauge, May 1989, Malaga, Spain.

"Volume regulation in elasmobranchs". Co-author with S. Benyajati. American Physiological Society Symposium on The Physiology of Blood Volume Regulation. Chaired by Kenneth Olson. 1994, San Diego, CA.

"Regulation of the reptilian and amphibian kidney: going with the flow". American Physiological Society Symposium on Advances in Amphibian and Reptilain Osmoregulation. Organized by S.D. Yokota and S. Benyajati. 1994, San Diego, CA.

Comparative Regulation of Glomerular Filtration". American Physiological Society Symposium on Regulation of Vertebrate Renal Function: A Comparative Approach APS Comparative Physiology Conference, San Diego, CA, August 25-28, 2002.

SEMINARS AND INVITED LECTURES:

Seminars
University of Akron, Department of Biology, December 1998
Texas A & M University, Department of Physiology, 1995
West Virginia University, Department of Physiology, 1990, 1997
Northeastern Ohio Universities College of Medicine,
Department of Physiology, 1991
Cornell University, Department of Physiology, 1989
West Virginia University, Department of Biology, 1987
Mt. Desert Island Biological Laboratory, Maine, 1987
San Francisco State University, Department of Biology, 1986
Tulane University, Department of Physiology, 1985
University of Arizona, Department of Physiology, 1984

Invited Lecturer

Advanced Renal Physiology
Department of Physiology, University of Oklahoma, 1989

Name: Han-Gang Yu
Work Address: Room 3034, Department of Physiology and Pharmacology, School of Medicine, West Virginia University, Morgantown, WV 26506-9229
304-293-2324 (work); hyu@hsc.wvu.edu

Education

B.Sc.	East China Normal University (Shanghai, China), May 1985, Physics
PhD	Stony Brook University (New York, USA), November, 1993, Biophysics/Physiology

Postgraduate/Postdoctoral Training

1993 - 1996	Stony Brook University (New York, USA), ion channels

Professional Experience

2008 – present	Associate professor (tenured), Dept of Physiology and Pharmacology (WVU)
2005 – 2008	Assistant Professor (tenure-track), Dept of Physiology and Pharmacology (WVU)
2000 – 2005	Assistant Professor of Physiology, New York College of Osteopathic Medicine New York Institute of Technology
1997 – 2000	Research Assistant Professor, Dept Physiology & Biophysics, Stony Brook University

Administrative Experience

2017 – 2019	as chair of Health Sciences Center Graduate Committee, I worked to recruit quality graduate students for five graduate programs in the school of medicine at Health Sciences Center of WVU

Awards and Honors

1989 – 1993	graduate student training fellow, NIH
1996 – 1998	Fogarty International Research Collaboration Award (NIH)
1999	Losartan travel award, Merck
2004	Dean's standard of excellence award, NYCOM/NYIT
2009 – 2010	nominated "distinguished teacher award" for school of medicine, WVU
2010 – 2012	Predoctoral Fellowship Award (AHA, Advisor, PI, Jianying Huang)
2013 – 2016	Grant-in-Aid Award (AHA)

Patents

1) "Vectors encoding HCN channels and MiRP1". Patent No. US 6,783,979 B2. Date of patent: August 31, 2004 (Drs Michael Rosen, Ira Cohen, Richard Robinson, **Han-Gang Yu**)
2) "Implantation of biological pacemaker that is molecularly determined". Patent No. US 6,849,611 B2. Date of patent: February 1, 2005 (Drs. Ira Cohen, Michael Rosen, Richard Robinson, **Han-Gang Yu**)

Professional Societies

Role	*Society*	*Years*
Cardiovascular Council	American Physiology Society	2005 - present
Premium Professional Member	American Heart Association	1993 – present

Editorial Board Member

2017 – present:	Editor, Cardiovascular Therapeutics

2022 – present: Associate Editor, Frontiers in Pharmacology

Ad hoc Reviewer for scientific journals

1) Circulation
2) Journal of Medical and Cellular Cardiology
3) AJP-Cell Physiology
4) Journal of Pain Research
5) European Journal of Pharmacology
6) Regulatory Peptides
7) Acta Pharmacologica Sinica
8) Acta Biochimica et Biophysica Sinica
9) Therapeutics and Clinical Risk
10) Research and Reports in Biology
11) Journal of Receptor, Ligand, and Channel Research
12) Life Sciences
13) Journal of Cardiovascular Pharmacology
14) PLOS One
15) Food & Function (Royal Society of Chemistry)
16) Journal of Molecular and Cellular Cardiology
17) Journal of Physiology
18) Biomolecules
19) Cancer Biomarker
20) Frontiers in Pharmacology
21) Nature Communications (Nature family journal)
22) EBioMedicine (The Lancet family journal)
23) Molecular Medicine
24) Cancers
25) Advanced Therapeutics
26) Communication Biology (Nature family journal)

Professional Service (National and International)

2008 – 2010	American Heart Association R1 Cardiac Electrophysiology
2009	New York Stem Cell Cardiac Panel
2010	NHLBI SEP, Electrical Signaling, Ion Transport, and Arrhythmias
2013	NSF GRFP Panelist
2013	NCI SEP, ZCA1 SRLB-C (M2)
2013	Netherlands Organization for Health Research and Development Translational Adult Stem Cell Research Program
2014	National Science Foundation Graduate Research Fellowship Program (NSF GRFP) Panelist
2023	NSF reviwer

Professional Service (Institution, University)

(1) HSC Graduate Program Admission, member (2007 – 2017), Chair (2017 – 2019)

(2) HSC Academic Standard for 1st-yr students, member (2007 – 2017)
(3) HSC Research Development Grant, member (2006 – 2011)
(4) Department Physiology and Pharmacology P&T, member (2009 – 2014)
(5) School of Medicine P&T, member (2015 - 2019)
(6) HSC Internal Study Section (April 2018)
(7) School of Medicine MD admission committee (2021-2022)
(8) HSC Biomedical Sciences PhD admission committee (2022-2023)

Grants and Contracts (PI unless otherwise stated)

Grant/Source/Amount	Years
1) Fogarty International Research Collaboration Award (NIH)/$90,000	1996 – 1998
2) Scientist Development Grant (AHA, National)/$260,000	7/1/2000 – 6/30/2004

Title: "Molecular Basis for the Voltage Dependence of the Cardiac Pacemaker Current, I_f".
Role: PI
The goal of this grant is to investigate the molecular mechanisms that underlie the voltage dependent activation of the cardiac pacemaker current, I_f, in different regions.

3) Research Development Grant (HSC/WVU)/$25,000	2005 – 2006
4) Bridge Fund Grant (HSC/WVU)/$30,000	9/1/2007 – 8/30/2008
5) Research Development Grant (HSC/WVU)/$25,000	2008 – 2009
6) R01 NIH/NHLBI (HL75023)/$1,248,200	7/1/2004 – 6/30/2010

Title: "Tyrosine Phosphorylation Mechanism of Pacemaker Channels"
Role: PI
The goal of this grant is to investigate the molecular mechanisms for tyrosine phosphorylation of the pacemaker channels.

7) AHA Predoctoral Fellowship 1/1/2010 – 12/31/2011
Title: "RPTPμ regulation of the cardiac pacemaker channels"
Role: supervisor, PI-Jianying Huang
The goal of this grant is to investigate the molecular mechanisms for receptor protein tyrosine phosphatase mu regulation of the cardiac pacemaker current, I_f.

8) Research Development Grant /HSC/$20,000	3/1/2011-2/28/2012
9) Pilot/WV-INBRE-NGS/$14,800	2012-2013
10) Grant-in-Aid/AHA/$154,000	7/1/2013-6/30/2016

Role: PI
Title: "RPTP Epsilon on Sinus Node Pacemaker Activity".
The goal of this grant is to investigate how receptor protein tyrosine phosphatase regulates the sinus noce pacemaker activity.

11) Research Development Grant/HSC/$17,000 7/1/2014-6/30/2015
Title: "Leptin in Cardiac Long QT"
Role: PI
The goal of this grant is to investigate molecular mechanisms for the local modulation of cardiac QT prolongation by leptin.

12) WVCTSI Pilot Grant/NIH/$50,000 7/1/2015-6/30/2016

Title: "Gene Expression Profiling of Human Obesity-related Cardiac Hypertrophy".

Role: PI

The goal of this grant is to profiling gene expressions in human cardiac hypertrophy induced by obesity.

13) WVCTSI Pilot Grant/NIH/$15,000 (Supplemental) 2016 – 2017

14) WVCTSI Launch Pilot/WVCTSI/$50,000 7/1/2018-12/01/2020

NIH/NIGMS

West Virginia IDeA-CTR Pilot Grants Program

Note: Proposal was reviewed at the institutional and NIH level and is considered NIH funding.

Role: Pilot PI

Title: "Specific activation of BK potassium channels triggers selective destruction of triple-negative breast tumor"

The goal of this pilot grant is to explore a novel role of BK potassium channels in inducing selective death of triple-negative breast tumor.

15) CDC /$145,000 (Co-I) 10/1/2020 – 9/30/2023

Title: "The effect of stress and night work shift on the heart".

Role: Co-I (PI: Hong Kan)

The goal of this grant is to explore the effect of stress induced by night work shift on the heart.

16) AstraZenica funding/$360,000 1/1/2023 – 12/31/2025

Role: PI

Title: "Investigating membrane potential a novel approach to manipulate cellar fate".

The goal of this grant is to explore the mechanisms membrane hyperpolarization uses to induce death in breast cancer cells.

Professional Education

2006 – present (Fall)	cell physiology, neuronal and cardiac action potentials, propagation, ion channels, dental students, master students, phycisian assistant students.
Spring 2007 – 2010, 2019	Problem-Based Learning, 1st-yr medical students (MS1)
Spring 2021, 2022	Problem-Based Learning (MS1)
Fall 2021 - 2022:	Principles of Medical Physiology (MS1 students), ECG lecture

Graduate Student Education

2007- 2009	Advanced Pharmacology
2007 - 2014 (Spring)	Cardiovascular biology
2007 - 2014 (Spring)	Cardiovascular module
2007 - 2011 (Spring)	(Advanced Physiology)
2013 (Summer)	CCRS Summer Translational Course
2012-present (Summer)	Medical Physiology Course
2016 (Fall)	Graduate Physiology and Pharmacology I (PSIO750)
2020-present (Spring)	Advanced Physiology (graduate students)

2021-2022 (Fall)	Problem-based learning (1st-yr graduate students)
2021 (Fall)	Special Topics for cancer protram students
2021-2022 (Fall)	Fundamentals of Physiology (MS, Pathology Assistants, Physician Assistants, Dental students)
2021-2022 (Fall)	Advanced Physiology (graduate students)

Students trained

Undergraduate

(1) Akinyemi, Adoleye	undergraduate (Shepherd University, WV, INBRE)	2009
(2) Harding, Kimbery	undergraduate (Bluefield State College, WV, INBRE)	2012
(3) Nguyen, Tina	undergraduate (Shepherd University, WV, INBRE)	2014
(4) Berzingi, Seher	undergraduate (WVU)	2014 - 2016

Graduate

(1) Lin, Yen-Chang	PhD student (WVU)	2006-2011
(2) Huang, Jianying	PhD student (WVU)	2007-2012
(3) Newman, Mackenzie	PhD student (WVU)	2015 – 2020
(4) Sizemore, Gina	PhD student (WVU)	2016 – 2020

Medical school

(1) Jerry Noel	medical student (NYIT, summer)	2002
(2) Arinsburg, Suzanne	medical student (NYIT, summer)	2003-2005
(3) Patel, Neel	medical student (NYIT, summer)	2004
(4) Yousuf, Salman	medical student (NYIT, summer)	2004
(5) Daniel, Gold	medical student (NYIT, summer)	2003-2004
(6) Awan, Gulle	medical student (NYIT, summer)	2003-2004
(7) Lin, Diana	medical student (NYIT, summer)	2004
(8) Ruffolo, Michael	medical student (WVU, summer)	2007
(9) Nguyen, Tina	medical student (WVU SoM, summer)	2016

Postdoctoral supervision

(1) Li, Chenhong	MD/PhD	2006-2008
(2) Zhang, Qi	PhD	2007-2009
(3) Hu, Rong	MD	2008-2009
(4) Huang, Aijie	MD/PhD	2009-2010

Invited Lectures and Presentations: International

1. Han-Gang Yu and Ira Cohen, "Newly discovered cardiac pacemaker current", Shanghai Institute of Material and Sinica, Chinese Academy, July 20, 1993.
2. Han-Gang Yu and Ira Cohen, "Turning the heart inside out: role of local angiotensin II" University of Antwerp, Belgium, January 21, 1998
3. Han-Gang Yu, "HCN channels", 1st Symposium on Neurosciences for Young Chinese Scholars Worldwide, Chinese University of Science and Technology, Hefei, Anhui, China June 1-3, 2000.
4. Han-Gang Yu, "HCN channels", Gordon Conference on Neurosciences, University of Science and Technology, Hong Kong, June 4-8, 2000.
5. Han-Gang Yu, "HCN channels: molecular mechanism in rhythmic activity", 2nd Symposium on Neurosciences for Young Chinese Scholars Worldwide, ShiChuan University, ChengDu, China. August 4-8, 2002.

6. Han-Gang Yu, "HCN channels: molecular mechanism in rhythmic activity", Institute of Neuroscience, Chinese Academy of Science, Shanghai, China. Dec. 2, 2002.
7. Han-Gang Yu, "Selective Control of Heart Rhythm and Ventricular Rate at Molecular Level", First International Cardiology Conference, Shanghai, China, Dec. 5-7, 2009.
8. Han-Gang Yu, "Leptin in Cardiac Arrhythmia", Chinese Culture University, Taiwan, Sept 23-25, 2013
9. Han-Gang Yu, "Direct Leptin Modulation of Heart Rate and Ventricular Repolarization via its Receptor". 8th Annual International Congress of Cardiology China-2016, Theme: A fresh New Insight on Promotion of Healthy Hearts. December 2-4, 2016, Xi'an China.
10. Han-Gang Yu, "Alteration of Bioelectricity as a novel strategy for treatment of triple-negative breast cancer". 1st International Conference for Cancer and Oncology, Singapore, December 5-7, 2019.

Invited Lectures and Presentations: National

1. Han-Gang Yu, Michael Rosen, Ira Cohen, "Angiotensin II and Ito Plasticity", American Heart Association 70th Scientific Session at Orlando, FL, November, 1997.
2. Han-Gang Yu, "Molecular basis of voltage-dependent activation of pacemaker channels", American Heart Association 76th Scientific Session at Orlando, FL, November, 2003.
3. Han-Gang Yu, "Molecular basis of voltage-dependent activation of pacemaker channels", American Heart Association Scientist Development Grant awardee presentation, Manhattan (NY), November, 2004.
4. Han-Gang Yu, Junyuan Gao, Michael Rosen, Ira Cohen, "Cardiac memory: mechanism of inverted T-wave", Chicago 2000 World Conference on Medical Physics and Biomedical Engineering, Navy Pier, Chicago, July 23-28, 2000.
5. Jian-ying Huang and Han-Gang Yu, "Reduced tyrosine phosphorylation inhibits HCN4-573x channel independent of cAMP signaling", American Heart Association Scientific Session at Orlando, Florida, November 12-16, 2011.
6. Han-Gang Yu, "Leptin inhibits heart rate via its receptor", American Heart Association Scientific Session at Dallas, Texas, November 16-20, 2013.
7. Han-Gang Yu, "Novel hyperpolarization-activated cyclic nucleotide-modulated channel 1 mutation in a patient with profound sinus bradycardia". American Heart Association Scientific Session at Anaheim, California, November 11-15, 2017.
8. Han-Gang Yu, "Reversing Bioelectricity of Breast Cancer as a Novel Strategy for TNBC treatment", 7th Webinar on Breast Cancer, July 14, 2021.
9. Han-Gang Yu, "Sex-specific gene expression signature in obese human and rat cardiac hypertrophy", APS New Trends in Sex and Gender Medicine, Oct. 18-22, 2021.
10. Han-Gang Yu, "Reversing Bioelectricity of Breast Cancer as a Novel Strategy for TNBC treatment" (selected poster presentation). Great Lakes Breast Cancer Symposium, Oct. 25-26, 2021.
11. Han-Gang Yu, "Detecting Sars-cov-2 Orf3a and E Ion Channel Activity in Covid-19 Blood Samples". AHA Scientific Sessions, Nov 13-15, 2021.

Invited Lectures and Presentations: Local and Institutional

1. Han-Gang Yu, Ira Cohen, "Turning the heart inside out: role of local angiotensin II", Department of Pharmacology, Columbia University, 1997.
2. Han-Gang Yu, "Cardiac pacemaker channels", Department of Physiology, Southern Illinois University, Carbondale campus, January, 2002.
3. Han-Gang Yu, "Cardiac Pacemaker Channels", Department of Physiology, City University of New York, Sophie Davis Medical School, Jan. 2004.
4. Han-Gang Yu, "Cardiac Pacemaker Channels", Cardiology Grand Rounds, Cardiology, HSC/WVU, Jan. 2006

5. Han-Gang Yu, "Bradycardia: where is Pharmacological treatment?", Cardiology Grand Rounds, Cardiology, HSC/WVU, Feb. 2013
6. Han-Gang Yu, "Leptin in Cardiac Arrhythmia", Stony Brook University, July 2013
7. Han-Gang Yu, "Direct Leptin Modulation of Heart Rate and Ventricular Repolarization via its Receptor", Department of Physiology and Pharmacology, February 2016.
8. Han-Gang Yu, "Bioelectricity: Exploring Targeted Therapy in Triple-Negative Breast Cancer", Cancer Institute, West Virginia University, September, 2019.

Bibliography

Abstracts Presented

1. Hangang Yu, Gina Sizemore, Katy Smoot, Peter Perrotta. Detecting Sars-cov-2 Orf3a and E Ion Channel Activity in Covid-19 Blood Samples. *Circulation* 2021;144:A9404
2. Mackenzie Newman, Janelle Stricker, Han-Gang Yu. Exploring gene expression signature shared between obese Zucker rat and human cardiac hypertrophy. *Journal of Clinical and Translational Science* volume 2, June 2018, p.11
3. Mackenzie Newman*, Bryan J. Gall*, Kathleen Brundage, David P. Siderovski, Robert W. Hull, Hangang Yu. Novel Hyperpolarization-activated Cyclic Nucleotide-modulated channel 1 Mutation in a Patient with Profound Sinus Bradycardia. *Circulation*. **2017**;136:A14542-A14542.
4. Mackenzie Newman, Aniello M. Infante, Michael J. Watson, Robert W. Hull, Han-Gang Yu. BMI- and Gender-specific Increase of MAP2K3/p38 Activity in Human Cardiac Hypertrophy. *Circulation Research* **2016**;119:A140
5. Jianying Huang, Yen-Chang Lin, Kimberly Harding, Stan Hileman, Han-Gang Yu. (2013), Leptin inhibits heart rate via its receptor. *Circulation*, 2013; 128: A13439.
6. Jainying Huang, Han-Gang Yu. (2011), Reduced tyrosine phosphorylation inhibits HCN4-573x channel independent of cAMP signaling. *Circulation* 124: A13045.
7. Huang, J. Y. and Yu, H. G. (2010). Isoform- and Species-specific Proteolysis of Cardiac Pacemaker Channels. *Biophysical Society's 54th Annual Meeting. Biophysical Journal* 98(3): 538a.
8. Lin, Y. C., Huang, J. Y., Kan, H., Frisbee, J. C., and Yu, H. G. (2010) Rescue of a Trafficking Defective Human Pacemaker Channel via a Novel Mechanism. Biophy*sical Society's 54th Annual Meeting. Biophysical Journal* 98: 135a.
9. Huang, J. Y., Huang, A. J., Zhang, Q., Lin, Y. C., and Yu, H. G. (2009) A novel mechanism for inhibition of Hyperpolarization-activated Pacemaker Channels by Receptor-like Tyrosine Phosphatase alpha. *Biophysical Journal 96 (3): 669a.*
10. Li, C., and H.-G. Yu. 2008. Interplay of cAMP and Tyrosine Phosphorylation on Hyperpolarization-activated Pacemaker Channel Regulation. *Biophysical Journal* 94(2):2175-Pos.
11. Li, C., Q. Zhang, J. Huang, and H. Yu. 2007. Y531, not Y554, a major contributor to Src-mediated modulation of HCN4 channel function. *Biophys J.* 2007;445a:2176-Pos.
12. Arinsburg SA, Pastor D, Torres G, Hallas B, El-Maghrabi MR, Cohen IS, Yu HG (2005). Src changes gating of HCN4 channels through direct binding to the channel proteins. *Biophysical Journal* 88:465A.
13. Yu X, He L-L, Li Y, Zhang Y, Yao L-J, Li J, Zheng L-H, Ge J-B, Arinsburg SA, Yu HG, Zhou Z. Hyperpolarization-induced contraction by calcium influx through I_f channels in rat ventricular myocytes (2004). *Circulation* (Suppl. III), p191.
14. Han-Gang Yu and Ira S. Cohen (2003). Inhibition of tyrosine kinases differentially regulates HCN pacemaker channels. *Biophysical Journal* 84, 554a.
15. Ji-Ying Wu, Wei Wang, Han-Gang Yu, Ira S. Cohen (2002). Time dependent changes in the properties of HCN2 channels expressed in Xenopus oocytes. *Biophysical Journal* 82, 277a.
16. Alexei N. Plotnikov, Ravil Gainullin, Hangang Yu, Parag Chandra, Steven Feinmark, Ira S. Cohen, Peter Danilo, Jr, Michael R. Rosen, (2001). Cardiac memory depends on a Ca-modulated pathway that is not β-adrenergically determined. *Circulation* 104 (Supplement), II 110.

17. Shi, W.; Yu, H.; Wu, J.; Zuckerman, J.; Wymore, R.; Dixon, J.; Robinson, R.; McKinnon, D.; Cohen, I.S. (2000). The distribution and prevalence of HCN isoforms in the canine heart and their relation to the voltage dependence of i_f. *Biophysical Journal* 78, 353A.
18. Wu, J.-Y., Cohen, I.S., Gaudette, G., Krukenkamp, I., Zuckerman, J., and Yu, H. (1999). Is i_f the only pacemaker current in mammalian atrium? *Biophysical Journal* 76, A306.
19. Yu, H., Wang, H.-S., Wymore, R.S., McKinnon, D., Gao, J., and Cohen, I.S. (1998). Effects of chronic exposure to angiotensin on Ito and Kv4.3. *Biophysical Journal* 74, A-158.
20. Yu, H., Rosen, M.R., Danilo, Jr., P., Steinberg, S.F., Wymore, R.S., Wang, H.-S., McKinnon, D., and Cohen, I.S. (1997). Angiotensin II alters Ito properties in cardiac ventricular myocytes. *Circulation* 96, I-295.
21. Y.M. Liu, H. Yu, C.Z. Li, I.S. Cohen, and M. Vassalle (1997). Actions of Cs^+ and Ba^{2+} on diastolic time-dependent currents in rabbit SA node myocytes. *FASEB: Experimental Biology 97*, 11, A496
22. Gao, J., Yu, H., Cohen, I.S., Mathias, R.T., Sun, X., Wang, Y. and Baldo, J.G. (1997). NA/K pump current in epicardial and endocardial canine ventricular myocytes. *Biophysical Journal* 72, A51.
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24. Ricard, P., Yu, H., Danilo, Jr., P., Gao, J., Wymore, R.S., Cohen, I.S., and Rosen, M.R. (1996). The role of the renin-angiotensin II system in cardiac T-wave memory. *Circulation* 94, I-6.
25. Liu, Y. M., Yu, H., and Cohen I.S. (1996). The role of phosphorylation in the regulation of i_f in rabbit SA node myocytes. *Biophysical Journal* 70, A393.
26. I.S. Cohen and Hangang Yu (1996). The pacemaker current i_f: implications for the differentiation of cardiac non-pacing regions from those that pace. "Canaux Ioniques" 7ème édition, La Londe les Maures, 18-21 Septembre 1996.
27. Gao, J., Yu, H., Cohen, I.S., Wymore, R.S., Rosen, M.R., Danilo, Jr., P. (1995). Long-standing cardiac memory in dogs is attributable to an altered activation threshold of i_{to}. *Circulation* 92, I-300.
28. Vassalle, M., Yu, H., Liu, Y., Tromba, C., and Cohen, I.S. (1995). Diastolic membrane currents in Purkinje and sinus node myocytes. *Biophysical Journal* 68, A107.
29. Robinson, R.B., Yu, H., Chang, F., Kuznetsov, V., and Cohen, I.S. (1994). The pacemaker current i_f exists in adult mammalian ventricular myocytes. *Biophysical journal* 64, A209.
30. Yu, H., Chang, F., and Cohen, I.S. (1993). The pacemaker current i_f exists in adult mammalian ventricular myocytes. *Biophysical journal* 64, A209.

Original Published Peer-Reviewed Articles

1. **Yu H-G (Corresponding author)**, Sizemore G, Martinez I and Perrotta P. Inhibition of SARS-CoV-2 Viral Channel Activity Using FDA-Approved Channel Modulators Independent of Variants. *Biomolecules*. 2022;12:1673.
2. **Yu, H.** "Depolarization or hyperpolarization: Emerging role of altered bioelectricity in breast cancer metastasis". eBioMedicine. 2022;76:103853.
3. **Yu, H. (Corresponding author),** Sizemore, G., Smoot, K., & Perrotta, P. (2021). Detecting SARS-CoV-2 Orf3a and E Ion Channel Activity in COVID-19 Blood Samples. Journal of Clinical and Translational Science, 1-18. doi:10.1017/cts.2021.856
4. **Hangang Yu (Corresponding author)**, PhD, Bryan Gall, PhD, Mackenzie Newman, PhD, Quincy Hathaway, PhD, Kathleen Brundage, PhD, Amanda Ammer, PhD, Peter Mathers, PhD, David Siderovski, PhD, Robert W. Hull, MD. "Contribution of Hyperpolarization-activated Cyclic Nucleotide-modulated (HCN) 1 Variant to Sinus Bradycardia: A Case Report". Journal of Arrhythmia. 2021;37(5):1337-1347. https://doi.org/10.1002/joa3.12598
5. Gina Sizemore, Sarah McLaughlin, Mackenzie Newman, Kathleen Brundage, Amanda Ammer, Karen Martin, Elena Pugacheva, James Coad, Malcolm D. Mattes, **Han-Gang Yu**. Opening large-conductance

potassium channels selectively induced cell death of triple-negative breast cancer. BMC Cancer 20: 595, 2020. PMCID: PMC7318490

6. Szu-Yuan Wu, Nam-Nhut Phan, Shih-Hsin Ho, Yu-Heng Lai, Tsai chih-hung, Yang Chung-Han, Kuan-Lun Li, **Han-Gang Yu**, Jung-Chieh Wang, Pung-Ling Huang, Yen-Chang Lin. (2018). Metabolomic Assessment of Arsenite Toxicity and Novel Biomarker Discovery in Early Development of Zebrafish Embryos. Toxicology Letters, 290:116-122. PMID: 29551592
7. Zhong P, Vickstrom CR, Liu X, Hu Y, Yu L, Yu HG & Liu QS. (2018). HCN2 channels in the ventral tegmental area regulate behavioral responses to chronic stress. eLife 7:e32420. PMID: 29256854
8. N-N Phan, C-Y Wang, K-L Li, C-F Chen, C-C Chiao, **H-G Yu**, P-L Huang, Y-C Lin. Distinct Expression of CDCA3, CDCA5, and CDCA8 Leads to Shorter Relapse Free Survival in Breast Cancer Patient. Oncotarget. 2018; 9:6977-6992. PMID: 29467944
9. Thuy TD, Phan NN, Wang CY, **Yu HG**, Wang SY, Huang PL, Do YY & Lin YC. (2017). Novel therapeutic effects of sesamin on diabetes-induced cardiac dysfunction. Mol Med Rep 15, 2949-2956. PMID: 28358428
10. Mackenzie Newman, Tina Nguyen, Michael J Watson, Robert W Hull, **Han-Gang Yu** (2017). Transcriptome Profiling Reveals Novel BMI- and Sex-specific Gene Expression Signatures for Human Cardiac Hypertrophy. Physiological Genomics, 49(7):355-367. PMCID: PMC5538878
11. **Hangang Yu**, Sarah McLaughlin, Mackenzie Newman, Kathleen Brundage, Amanda Ammer, Karin Martin, James Coad. Altering Calcium Influx for Selective Destruction of Breast Tumor. BMC Cancer (2017) 4;17(1):169. doi: 10.1186/s12885-017-3168-x. PMID: 28259153
12. Seher Berzingi, Mackenzie Newman, **Han-Gang Yu**. Altering Bioelectricity on Inhibition of Human Breast Cancer Cells. Cancer Cell International, (2016) 16:72. PMCID: PMC5034549
13. Yen-Chang Lin, Jianying Huang, Stan Hileman, Karen Martin, Robert Hull, Mary Davis, **Han-Gang Yu** (2015). Leptin Decreased Heart Rate Associated with Increased Ventricular Repolarization via Its Receptor. American Journal of Physiology - Heart and Circulatory Physiology, 309, H1731-H1739. PMID: 26408544
14. Jianying Huang, Yen-Chang Lin, Stan Hileman, Karen H. Martin, Robert Hull, **Han-Gang Yu**. (2014). PP2 prevents beta-adrenergic stimulation of cardiac pacemaker activity. J Cardiovasc Pharmacol 2014; 63(6) 533-43. PMID: 24566462.
15. Yen-Chang Lin, Jianying Huang, Hong Kan, Vince Castronova, Jeffery C. Frisbee, **Han-Gang Yu**. Defective Calcium Inactivation Causes Long QT in Obese Insulin-Resistant Rat. AJP –Heart & Circulation, 302, H10130-H1022, 2012. PMID: 22198168
16. Jian-Ying Huang and **Han-Gang Yu**. Reduced Tyrosine Phosphorylation Inhibits HCN4-573x Channel Independent of cAMP Signaling. Circulation. 124:A13045, 2011.
17. **Han-Gang Yu** and Yen-Chang Lin (2011). Future of cardiac pacemaker – an update of biological pacemaker patents. Recent Patents on Biomedical Engineering. 4(1), 6-19.
18. **Han-Gang Yu** and Yen-Chang Lin (2011). Biological Pacemaker – Main Ideas and Optimization, in "Modern Pacemakers - Present and Future", Mithilesh Kumar Das (Ed.), ISBN: 978-953-307-214-2, pp.449-472.
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21. Qi Zhang, Aijie Huang, **Han-Gang Yu**. Associated Changes in HCN2 and HCN4 Transcripts and I(f) Pacemaker Channels in Myocytes. BBA-Biomembrane, 1788:1138-1147, 2009.
22. Jefferson C. Frisbee, John M. Hollander, Robert W. Brock, **Han-Gang Yu**, and Matthew A. Boegehold. Intergration of skeletal muscle resistance arteriolar reactivity for perfusion responses in the metabolic syndrome. Am J Physiol Regul Integr Comp Physiol 296: R1771-1782, 2009.
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28. Rebecca A. Ruffle, Andrew C. Mapley, Manmeet K. Malik, Salvatore V. Labruzzo, Janet M. Chabla, Riya Jose, Brian H. Hallas, **Han-Gang Yu**, Judith M. Horowitz, German Torres. Distribution of constitutively expressed MEF-2A in adult rat and human nervous systems. Synapse 59: 513-520, 2006.
29. Arinsburg SS, Cohen IS, **Yu HG**. Constitutively active Src tyrosine kinase changes gating of HCN4 channels through direct binding to the channel proteins. J. Cardiovascular Pharmacology 47: 578-586, 2006.
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32. Sui S., **Yu HG**, Hu HY, Shi YH, Song GQ. NMR study on solution configuration of mHCN1 pore peptide. Acta Biochimica et Biophysica Sinica 35: 59-63, 2003.
33. Plotnikov AN, **Yu H (equal contributor)**, Geller JC, Gainullin RZ, Chandra P, Patberg KW, Friezema S, Danilo, P, Cohen IS, Feinmark S, Rosen MR. The role of L-type calcium channels in pacing-induced short-term and long-term cardiac memory in canine heart. Circulation 107:2844-2849, 2003.
34. **Han-Gang Yu**. Molecular Determinants for the Gating of Pacemaker Channels. 2Nd International Chinese Neuroscientist Meeting (mini-review). Cheng-Du, China, Aug 4-9, 2002.
35. **H. Yu,** J. Wu, I. Potapova, R.T. Wymore, B. Holmes, J. Zuckerman, Z. Pan, H. Wang, W. Shi, R. Robinson, M.R. El-Maghrabi, W. Benjamin, J. Dixon, D. McKinnon, I.S. Cohen, and R. Wymore. MinK-related peptide 1: a beta subunit for the HCN ion channel family, enhances expression and speeds kinetics. Circulation Research 88: e84 - e87, 2001.
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