

Roger Anthony Johns, M.D., M.H.S., Ph.D.

ACADEMIC POSITIONS:

Professor, Department of Anesthesiology and Critical Care Medicine. Johns Hopkins University School of Medicine, Baltimore, MD, 1999–present
Professor, Department of Medicine, Division of Pulmonary Critical Care Medicine. Johns Hopkins University School of Medicine, Baltimore, MD, 2006–present
Director (Chair), Anesthesiology and Critical Care Medicine, Johns Hopkins Hospital, Baltimore, MD, 1999–2003
Mark C. Rogers Professor and Chairman, Department of Anesthesiology and Critical Care Medicine Johns Hopkins University School of Medicine, Baltimore, MD, 1999–2003
Professor and Acting Chair of Anesthesiology, University of Virginia, Charlottesville, VA, July 1998–1999
Professor and Vice Chair of Anesthesiology, University of Virginia, Charlottesville, VA, April 1997–1998
Professor of Anesthesiology, University of Virginia, Charlottesville, VA, July 1995–June 1999
Associate Professor of Anesthesiology, University of Virginia, Charlottesville, VA, July 1991–June 1995
Assistant Professor of Anesthesiology, University of Virginia, Charlottesville, VA, August 1987–June 1991

EDUCATION AND TRAINING:

Ph.D. in Public Health (Department Health Policy and Management; Health Services Research.) Johns Hopkins University Bloomberg School of Public Health, 2013
Robert Wood Johnson Health Policy Fellow of the Institute of Medicine, National Academy of Sciences. American Political Science Association Congressional Fellow (Senator Hatch), 109th Congress, 2005–2006
Masters of Health Sciences in Health Policy and Management (Health Policy). Johns Hopkins Bloomberg School of Public Health, 2005
Darden Graduate School of Business Administration Health Sciences Center Executive Management Program, December 1997–October 1998
Fellow in Cardiac Anesthesia, Department of Anesthesiology, University of Virginia, Charlottesville, VA, 1985–1986
Research Fellow in Molecular Pharmacology, Department of Pharmacology, University of Virginia, Charlottesville, VA (Michael J. Peach, Ph.D., Supervisor), June 1985–July 1987
Resident in Anesthesiology, University of Virginia, Charlottesville, VA, 1983–1985 (Robert M. Epstein, M.D., Chairman), July 1, 1983–June 30, 1985
Intern in Mixed Internal Medicine/Anesthesiology, University of Virginia, Charlottesville, VA, July 1, 1982–June 1983
M.D., Wayne State University School of Medicine, Detroit, MI, 1981
B.S., Stanford University, Palo Alto, CA, 1977

LICENSURE:

Maryland State Board of Physician Quality Assurance, License
National Board of Medical Examiners Parts I, II, III
Commonwealth of Virginia Board of Medicine, License
Diplomat of the American Board of Anesthesiology, 1986

GRANT SUPPORT:

- RO1 GM137213 Toxic effects of anesthetics in developing white matter. Co-I Roger Johns, PI: David Mintz 4/1/2020 to 3/31/2024
- RO1 GM110675 Mechanistic actions of PDZ Domain mediated protein interactions on neural development and anesthetic-mediated neurotoxicity. PI: Roger Johns. 07/01/2020—06/30 2025. \$2,791,710
- RO1HL122606 DAMP proteins mediate HIMF-induced pulmonary hypertension. PI: Roger Johns 08/01/2018-06/30/2023 \$2,000,000
- RO1 GM110674-01 Targeting PDZ to unravel early anesthetic exposure-produced cognitive dysfunction. PI: Roger Johns. \$2,582,000; 4/1/2014 -3/31/2019.
- U52 HL123827-01 Targeting resistin and RELM-beta to treat pulmonary hypertension. PI: Roger Johns. \$8,300,000, 7/1/2014-6/30/2020
- Blaustein Pain Foundation Grant \$23,800. Role Shank 3 in Diminished Pain Responses in a Rodent Model of Autism Spectrum Disorder. PI: Roger Johns 2012-2013
- P50HL107182 Targeting resistin and RELM-beta to treat pulmonary hypertension. \$984,000 Roger A. Johns, Principle Investigator. May 1, 2011- April 30, 2014
- 2009-MSCRFII-0014-00 A novel stem cell therapy for spinal cord injury-induced chronic neuropathic pain. PI: Roger A Johns. \$1,500,000 direct costs (1,725,000 total). July 1, 2009-June 30, 2014
- 2009-2011 MSCRFII Role of hypoxia-induced mitogenic factor in regulating proliferation and differentiation of human stem cells. Irina Kolosova, PI. Roger Johns co-investigator 5% effort \$200,000 July 1, 2009- June 30, 2011
- P50 084946 Molecular Determinants of Pulmonary Arterial Hypertension. SCCOR, Co-Director with Paul Hassoun. 2006–2011 \$21,640,000 (total).
- P50 084946 Molecular Determinants of Pulmonary Arterial Hypertension. SCCOR, Project 4: HIMF/FIZZ in Pulmonary Hypertension/Right Heart Failure. Roger A. Johns, Principal Investigator 2006–2011 \$21,640,000 (total).
- RO1 GM49111 (yrs 14–18): Interaction of Anesthetics with Neuronal PDZ domains. Roger A. Johns, Principal Investigator. \$288,000 (direct, yr 14), \$1,868,000 (total) 2006–2010
- RO1 NS44219 Role of PSD93/Chapsyn-110 in Chronic Pain. Roger A. Johns, Principal Investigator \$2,007,875 (total) 2002–2009.
- RO1 HL39706-(yrs 15–19): NO, Hypoxia and Pulmonary Hypertension. Roger A. Johns, Principal Investigator, \$2,013,750 (total) 2002–2007 (renewal for yrs 20–24 pending review).
- Robert Wood Johnson Health Policy Fellow Grant (PI) 2005–2009, \$155,000.
- PGA HL99-024 Applied Genomics in Cardiopulmonary Disease. Co-Investigator (Joe Garcia, PI) \$16,000,000 (total) 2000–2005.
- RO1 GM49111 (yrs 09–14): NO Signaling in Mechanisms of Analgesia and Anesthesia. Roger A. Johns, Principal Investigator. \$1,334,083 (total) 2000–2005.
- RO1 HL39706 (yrs10-14): Regulation of NO Signaling in Pulmonary Vasculature. Roger A. Johns, Principal Investigator \$1,645,000 (total), 1997–2002.
- RO1 HL39706 (yrs 06-09): Regulation of NO Signaling in Pulmonary Vasculature. Roger A. Johns, Principal Investigator. \$1,175,714 (total), 1993–1997.
- Blaustein Pain Foundation Award. Specific Coupling of NMDA Receptor Activity to NO Signaling -Pathway in Spinal Nociceptive Mechanisms by PSD95. Roger A. Johns, Principal Investigator \$34,896 2000–2001.
- RO1 GM49111 (yrs 04-08): Anesthetics and Nitric Oxide Signaling. Roger A. Johns, Principal Investigator. \$1,219,000 (total), 1996–2000.
- RO1 GM49111 (yrs 01-03): Anesthetics and Nitric Oxide Signaling. Roger A. Johns, Principal Investigator. \$898,000 (total), 1993–1996.
- NHLBI T32 HL07284-19 Training Program in Basic Cardiovascular Research. Program Preceptor, 1994–1999 (Brian Duling, P.I.).

Computers in Medical Education Grant from the University of Virginia Computers in Medical Education Committee for development of computer-based anesthesia simulation training for medical students and residents. 1992–1993.

American Heart Association Grant in Aid, Regulation of Nitric Oxide Synthase by Nitric Oxide. Roger A. Johns co-investigator \$57,000, 1992–1994.

American Heart Association Grant in Aid, Nitric Oxide as a Selective Pulmonary Vasodilator. Roger A. Johns co-investigator with George F. Rich. \$62,000, 1991–1993.

NHLBI P01 HL19242, Regulation of Vascular Smooth Muscle Growth and Function; Richard A. Murphy, Principal Investigator. Roger A. Johns, Principal Investigator on sub-project 8: Endothelium-Vascular Smooth Muscle Cell Interactions. \$127,530, 1990–1994.

NHLBI T32 HLO7355, Hypertension Training Grant; Program Preceptor, 1988–1999.

NHLBI R29 HL39706, Oxygen Tension and Endothelium-Dependent Vasodilation. Roger A. Johns, Principal Investigator. \$349,797, 1988–1993.

NHLBI P01 -HL19242 (yrs 01-05): Vascular Smooth Muscle Program Project; Richard A. Murphy, Principal Investigator. Co-investigator on sub-project: Spin-Trapping of Endothelium-Derived Free Radicals, 1987–1990.

Anesthesiology Young Investigator/Parker B. Francis Investigator. Hypoxia and EDRF Release from Pulmonary Artery Endothelium. Roger A. Johns, Principal Investigator. \$62,000, 1987–1989.

Individual National Research Service Award. Role of Arachidonate Metabolites in Endothelium-Dependent Vasodilation. \$56,000, 1985–1987.

American Heart Association Fellowship, \$20,000, 1985–1986.

GRANTS ON BEHALF OF POSTDOCTORAL TRAINEES:

NRSA: Mechanism of feedback regulation of nitric oxide synthase. Fellowship on behalf of Gregory C. Dailey, Ph.D. 1994–1995.

American Heart Association, Virginia Affiliate. Sterol regulation of endothelial nitric oxide synthase expression. Fellowship on behalf of Timothy D. Le Cras, Ph.D. 1994–1996.

American Heart Association, Virginia Affiliate. Regulation of NO-cGMP signaling by endothelium-vascular smooth muscle interaction. Fellowship on behalf of L.V. Ravichandran, Ph.D. \$59,000, 1995–1997.

American Heart Association, Virginia Affiliate. Etiology of NO signaling pathway in hypoxia induced pulmonary hypertension. Fellowship on behalf of Chun Xue, M.D., Ph.D. \$59,000, 1995–1997

American Heart Association, Virginia Affiliate. Regulation of nitric oxide synthase gene expression by nitric oxide, Fellowship on behalf of Lesley Millatt, Ph.D. \$59,000, 1996–1998.

NRSA: Regulation of nitric oxide expression and role in pulmonary vascular remodeling. Fellowship on behalf of Timothy Quinlan, Ph.D. \$39,400, 1996–1998.

NRSA: HIMF in Human Pulmonary Hypertension. Fellowship on behalf of Daniel Angelini, PhD, 2006–2008

NRSA: Stem Cell Therapy for Chronic Pain Associated with Spinal Cord Injury. Fellowship on behalf of Orion Furmanksi, Ph.D. 2010-2012

NRSA: HIMF/FIZZ1/RELM-alpha Activates Macrophages in Pulmonary Hypertension. Fellowship on behalf of Lucas Meuchel, Ph.D. 2013-2015

PATENTS AND LICENSING:

- Use of nitric oxide signaling pathway inhibitors as novel analgesics and in decreasing anesthetic requirement (08/082,440).
- Novel monoclonal antibody to nitric oxide synthase (licensed).

- Pharmacological manipulation of cell protein turnover through the stimulation or inhibition of ubiquitin activating enzyme by s-nitrosylation.
- The analgesic and anesthetic roles of cGMP-dependent protein kinase I-alpha inhibition (DM-3612).
- The analgesic and anesthetic role of inhibiting interactions of PSD93 and PSD95 with NMDA receptors (DM-3699; licensed to Traxion Therapeutics).
- Novel Hypoxia Inducible Mitogenic Factor (HIMF; a novel, potent angiogenic, mitogenic and vasoconstricting protein/cytokine) (DM-4061). (Patents approved for application to Pulmonary Hypertension, COPD and Cardiac Hypertrophy, wound healing. Additional 3 patents for human therapeutic antibody pending)
- pTAT-PDZ2 construct as therapy for chronic pain
- pTAT-PDZ2 construct to reduce MAC for anesthesia
- Targeting RELM proteins in pulmonary hypertension. U.S. patent issued,
- Targeting RELM proteins in cardiac hypertrophy. U.S. Patent issued
- Targeting RELM proteins in COPD . U.S. Patent issued
- Human resistin in wound healing. U.S. Patent issued.
- Human therapeutic antibodies to human resistin and resistin-like molecule beta (U.S. Patent Issued November 2020)
- Human Resistin and relmresumab in human COVID-19 (pending)

HONORS:

Elected member of the National Academy of Sciences, National Academy of Medicine (formerly Institute of Medicine) 2010-present
Foundation for Anesthesia Education and Research (FAER), Board of Directors (2013-present; Chair elect 2019-2021; Chair 2021-2024)
National Academy of Inventors (Elected 2016)
Robert Wood Johnson Health Policy Fellow of the Institute of Medicine, National Academy of Sciences. 2005–2008
WTG Morton Society (1999–2003), President 2002–2003, Alumni member 2003-present
Association of University Anesthesiologists (elected 5/91)
American Society of Pharmacology and Experimental Therapeutics (elected 1990)
Anesthesia Young Investigator/Parker B. Francis Investigator Award (1987–1989)
Association of Cardiovascular Anesthesiologists (elected 10/89)
University of Michigan Regents Scholar
Evans Scholar
National Merit Scholarship, Commendation
Michigan Competitive Scholar
Eagle Scout, gold palm

ADDITIONAL TRAINING:

Serving Leader Development Program. Third River Partners and Johns Hopkins University Department of Anesthesiology, January-November 2015
Johns Hopkins Medicine Leadership Program, 2002
Leadership program for Chiefs of Service. Harvard University School of Public Health. January 2000
Darden Graduate School of Business Administration, University of Virginia; Health Sciences Center Executive Management Program, December 1997–October 1998
Financial Management - Darden School of Business Administration, Univ. of Virginia. Fall 1995

Fiberoptic Bronchoscopy and Intubation (one month clinical rotation, Bernie Marsh, M.D., and
K.P. Wang, M.D., supervisors), Johns Hopkins University, 1984
Advanced Trauma Life Support, American College of Surgeons, 1985
Advanced Cardiac Life Support, American Heart Association, 1983, 2007, 2009, 2011, 2013, 2015

COMMITTEE AND ADMINISTRATIVE ACTIVITIES:

Departmental:

University of Virginia

Chair (Acting) University of Virginia Department of Anesthesiology, 1998–1999 (offered permanent position but accepted Chair at Johns Hopkins)
Chair's Advisory Committee, 1997–1999
Vice Chair, University of Virginia Department of Anesthesiology, 1997–1999
Chair, Clinical Research Committee, University of Virginia Department of Anesthesiology, 1997–1999
Chair, Committee to Select Department Business/Administrative Manager, University of Virginia Department of Anesthesiology, 1993
Coordinator of Cardiovascular Anesthesia Teaching Block, Department of Anesthesiology, University of Virginia, 1988–1999
Coordinator of Research Conference series, Department of Anesthesiology, University of Virginia, 1988–1999
Promotions Committee, University of Virginia, Department of Anesthesiology, 1995–1999
Education Committee, University of Virginia, Department of Anesthesiology, 1989–1999
Resident Selection Committee, University of Virginia, Department of Anesthesiology, 1988–1999
Coordinator of weekly Case Conference series, Department of Anesthesiology, University of Virginia Medical Center, 1984–85

The Johns Hopkins University:

Director (Chair), Department of Anesthesiology and Critical Care Medicine, The Johns Hopkins University, 1999–2003
Anesthetist-in-Chief, Johns Hopkins Medicine, 1999-2003
Executive OR Committee, Department of Anesthesiology, The Johns Hopkins University, 1999–2003 (Chair)
Quality Assurance Committee, Department of Anesthesiology, The Johns Hopkins University, 1999-2003
Service Executive Committee, Chair, Department of Anesthesiology, and The Johns Hopkins University, 1999–2003 (Chair)
Education Committee, Department of Anesthesiology, The Johns Hopkins University, 1999–present
Resident Selection Committee, Department of Anesthesiology The Johns Hopkins University 1999–2003
Operating Room Equipment and Supply Committee, Department of Anesthesiology The Johns Hopkins University 1999–2003
Program Director Residency Program, Department of Anesthesiology, Johns Hopkins University, 1999-2003
Promotion and Mentoring Committee, Department of Anesthesiology, The Johns Hopkins University, 1999–present (Chair 1999-2003)
Anesthesiologist and Society Program, Director 2006-2013
Committee on Philanthropy 2014—present
Finance Committee 2014-present
Promotions and Mentorship Committee 2014-present
Research Development Committee 2015-present (co-chair)

Medical School/University:

Wayne State University Medical School Curriculum Redesign Committee, 1977–1981 (elected each year)

Stanford University Biological Sciences Undergraduate Curriculum Committee, 1975–1977
(elected each year)

University of Virginia:

Executive Committee NIH Training Program in Basic Cardiovascular Research, University of Virginia Health System 1996–1999

Dean's Committee to review Department of Plastic Surgery, 1998

Dean's Committee to review Department of Dentistry, 1997

Search Committee for Chairman, Department of Internal Medicine, University of Virginia Health Sciences Center, 1995–1997

Research and Development Committee, University of Virginia Health Sciences Center, 1995–1999

Dean's Committee to Review Dentistry Department, University of Virginia, 1993

Faculty-Medical Student Advising Program, 1989–1999

Executive Committee, NIH Hypertension Training Program, University of Virginia, 1987–1999

Director and Developer of Translational Research Enhancement Program for Cardiovascular Research Training, University of Virginia Health System, 1995–1999

Executive Committee—Medical Scientist Training Program (MSTP), University of Virginia Health System, 1997–1999

Medical Policy Committee. University of Virginia Health System, 1998–1999

Graduate Medical Education Committee. University of Virginia Health System, 1998–1999

Operating room Executive Committee, University of Virginia Health system, 1998–1999

Medical Advisory Committee. University of Virginia Health System, 1998–1999

Clinical Chair's Committee, University of Virginia Health System, 1998–1999

Dean's Committee to review Department of Plastic Surgery Chair, University of Virginia Health System, 1998–1999

Johns Hopkins Medical Institutions:

Contracting Committee of the Clinical Practice Association 1999–2004

Executive Operating Room Committee (Co-chair) 1999–2003

Clinical Directors Communication Committee, Johns Hopkins Hospital, 1999–2003

Clinical Practice Association Advisory Board, Johns Hopkins Medicine, 1999–2003

Comprehensive Cancer Center Advisory Council Committee, Johns Hopkins Hospital, 1999–2003

The Johns Hopkins Hospital Medical Board Committee, Johns Hopkins Hospital, 1999–2003

The Advisory Board of the Medical Faculty, The Johns Hopkins University, 1999–2003

Search Committee for Chair, Department of Surgery, Johns Hopkins University, 2002–2003

Committee on Philanthropy, 2001–2003

Committee on Compliance Redevelopment of the Clinical Practice Association (Chair) 2002–2003

Committee on Operating Room Efficiency (co-Chair) 2001–2003

Innovations in Patient Care Fast Track Subcommittee on Training and Development, Johns Hopkins Hospital, 2001–2003 (Co-chair)

The Johns Hopkins Medicine United Way Campaign, Co-chairman 2000–2001; Chairman 2001–2002 and 2002–2003

Agenda Committee of the Advisory Board, The Johns Hopkins University, 2000–2002

Johns Hopkins Committee on Information Technology, 2000–2003

Innovations in Patient Care Executive Committee (Hopkins Program in Quality and Safety), 2002–present

X-Prize Committee, Johns Hopkins Medicine 2009–2010

Health policy advisor to Johns Hopkins University Government Affairs Office, 2008–present

National:

Elected Member National Academy of Medicine of the National Academy of Sciences (formerly the Institute of Medicine) 2010–present

Selection Committee Institute of Medicine Anniversary Fellow. 2014, 2016-17
Foundation for Anesthesia Education and Research (FAER), Elected to Board of Directors 2013-present
National Coalition on Health Care (NCHC) Policy and Strategic Planning Committee, 2008-present,
Institute of Medicine, Roundtable on Evidence Based Medicine, invited contributor, 2007-2008
Academy of Academic Mentors, Foundation for Anesthesia and Education Research, 2004-present (Founding Member), Elected to Council 2007, President 2009-2012
American Society of Anesthesiologists Subcommittee on Experimental Circulation, 1991-1994, 2004-present
American Society of Anesthesiologists Committee on Research, 1992-2018
WTG Morton Society (elected 1999; President, 2002-2003; Alumni member 2003-present)
Society of Academic Anesthesiology Chairs (1998-2003, elected to Council, 2001-2003)
American Society of Anesthesiologists Physician's Resource Committee, 1999-2003
National Library of Medicine Adviser/Consultant, 1997
American Board of Anesthesiology, Associate Examiner, 1997-2001
Multiple Editorial Boards listed below
See NIH, NSF, AHA, MRC, Veterans Grant Review Committees below
Association of University Anesthesiologists (AUA, elected 1991-present)
Scientific Advisory Board of the Association of University Anesthesiologists, 1992-1995
Society of Cardiovascular Anesthesiologists Research/Abstract Review Committee, 1991-1994
External Department Reviews/On-site consultations:
Ohio State University Department of Anesthesiology (2001)
Emory University Department of Anesthesiology (2001)
Brigham and Women's Hospital Department of Anesthesiology (2002)
University of Pennsylvania Department of Anesthesiology (2003)

HEALTH CARE POLICY/HEALTH SYSTEMS RELATED:

Elected Member, National Academy of Sciences Academy of Medicine (formerly the Institute of Medicine) 2010-present
X-Prize Committee, Johns Hopkins Medicine 2009-2010
Health policy advisor to Johns Hopkins University Government Affairs Office, 2008-present
National Coalition on Health Care Policy and Strategic Planning Committee, 2008-present
Robert Wood Johnson Health Policy Fellow of the Institute of Medicine, National Academy of Sciences. American Political Science Association Congressional Fellow 2005-2008
MHS in Health Policy and Management, Johns Hopkins Bloomberg School of Public Health, 2004-2006,
Ph.D. Health Policy and Management, Johns Hopkins Bloomberg School of Public Health (Health Services Research and Policy) 2013
Innovations in Patient Care Committee, Johns Hopkins Hospital, 2001-2006
Program for Chiefs of Clinical Service, Harvard School of Public Health, January 2000
Darden Graduate School of Business Administration Health Sciences Center Executive Management Program, December 1997-October 1998
Strategic Planning Committee Clinical Program Task Force, University of Virginia Health Sciences Center (Dean's Office), 1994-1995
Health Policy Forum (Don Detmer Director and Dean) University of Virginia 1992-1995
Health Services Foundation Leadership Retreat, University of Virginia, September, 1994
Invited member, AMSA Health Care Policy Program, Washington, DC, 1978
Stanford Students Studying the National Health Service, England, 1975 (15 credits related to health economics and policy. Didactic series on health economics and policy with

lecturers from Stanford, London School of Economics, Oxford and Officials of the National Health Service. Policy internship at Wexham Park Hospital, Slough, UK)
Economics of Health Care (Victor Fuchs, Ph.D., Professor) Stanford University, 1975–1976

SOCIETY MEMBERSHIPS:

American Society of Anesthesiologists
International Anesthesia Research Society
Society of Cardiovascular Anesthesiologists
Association of Cardiac Anesthesiologists
Association of University Anesthesiologists
American Association for the Advancement of Science
Federation of American Societies for Experimental Biology
American Society of Pharmacology and Experimental Therapeutics
American Thoracic Society
American Heart Association, Cardiopulmonary Council
American Medical Association
Virginia State Medical Society
Albemarle County Medical Society
Virginia Society of Anesthesiologists
American Society of Echocardiography
American Physiological Society
Baltimore County Medical Society
Johns Hopkins Medical-Surgical Association
Society for Neuroscience
Academy Health
Institute of Medicine, National Academy of Sciences
Foundation for Anesthesia Education and Research, Board of Directors, Chair Elect 2020

EDITORIAL BOARD AND JOURNAL REVIEW:

Pulmonary Circulation (Editor 2010-present)
American Journal of Physiology: Lung, Cellular, and Molecular Biology (Editor, 2000–present)
Anesthesiology (Editor, 1996–2006)
Anesthesiology (Associate Editor, 1991–1996)
Journal of Vascular Research (Editor, 1995-2002)
Journal of Cardiothoracic and Vascular Anesthesia (Editor, 1992–2000)
Intelligence Reports in Anesthesia (Editor, 1986, 1987)

Regular Invited Reviewer for:

American Journal of Physiology (Lung, Cell, Molecular Physiology)
American Journal of Physiology (Heart Circ Physiology)
American Journal of Physiology (Regulatory and Integrative Physiology)
Anesthesia and Analgesia
Archives of Otolaryngology—Head and Neck Surgery
Atherosclerosis, Thrombosis and Vascular Biology
Brain Research
British Journal of Pharmacology
Cell
Circulation Research
European Respiratory Journal
FEBS Letters
Investigative Urology

Journal of Applied Physiology
Journal of Clinical Anesthesia
Journal of Clinical Investigation
Journal of Neuroscience
Journal of Pharmacology and Experimental Therapeutics
Journal of Respiratory Cell and Molecular Biology
Journal of Vascular Research
Life Sciences
Lung Pharmacology
Nature Neuroscience
Nature
Neuron
Neuroreport
Neuroscience
Neuroscience Letters
Respiratory Medicine
Trends in Neuroscience
Thrombosis and Hemostasis

GRANT REVIEW:

National Institutes of Health—National Heart Lung and Blood Institute Study Section on Respiratory Integrated Biology and Translational Research (RIBT). 2015—present (ad hoc 1-2 times per year)
Foundation for Anesthesia Education and Research, ASA Health Services Research Study Section, 2015-present
Foundation for Anesthesia Education and Research, ASA Health Services Research Study Section. Chair, 2013-2015
Foundation for Anesthesia Education and Research, ASA Research Study Section, 1992–2009, 2013-present
National Science Foundation, ad hoc reviewer (1992, 1993)
Veteran’s Administration, ad hoc reviewer (1992, 1993, 1994, 1995)
National Institutes of Health NHLBI Lung Biology and Pathology A Study Section, June 1994, February 1995 (ad hoc)
National Institutes of Health NHLBI Lung Biology and Pathology A Study Section 1995–1999 (permanent member)
International Anesthesia Research Society Frontiers in Anesthesia Research Award Study Section, 1994–1995; 1996–1997 (Chairman); 1998–1999 (Chairman)
American Heart Association, Virginia Affiliate Peer Review Committee, 1995–1997
Medical Research Council, England, 1997; 1998 (ad hoc); 2001
National Institutes of Health – General Medicine: Surgery, Anesthesia and Trauma Study Section, 2000 (ad hoc)
National Institutes of Health—General Medicine: Surgery, Anesthesia and Trauma special study section 2008
National Institutes of Health –NHLBI, Respiratory Integrative Biology and Therapy Study Section, 2015, 2016 (ad hoc)
National Institutes of Health –NHLBI, Program Project Review Committee (Lung Biology), 2016, 2017, 2019
Johns Hopkins STARR Award grant committee, 2015-present

PUBLICATIONS IN REFEREED JOURNALS

- Johns RA, DiFazio CA, Longnecker DE: Lidocaine constricts or dilates rat arterioles in a dose-dependent manner. *Anesthesiology* 62:141-144, 1985.
- Lynch C, Johns RA: Diagnostic application of an axillary block in an infant. *Anesthesiology* 62:524-526, 1985.
- Berry FA, Lake CL, Johns RA, Rodgers BM: Mitral valve prolapse—another cause of intraoperative dysrhythmias in the pediatric patient. *Anesthesiology* 62:662-664, 1985.
- Johns RA, Finholt DA, Stirt JA: Anesthetic management of a child with dermatomyositis. *Can Anaesth Soc J* 33:71-74, 1986.
- Johns RA, Seyde WC, DiFazio CA, Longnecker DE: Dose-dependent effects of bupivacaine on rat muscle arterioles. *Anesthesiology* 65:186-191, 1986.
- DiFazio CA, Carron H, Grosslight KR, Moscicki JC, Bolding WR, Johns RA: Comparison of pH-Adjusted lidocaine solutions for epidural anesthesia *Anesth Analg* 65:760-764, 1986.
- Loeb AL, Johns RA, Milner P, Peach MJ: Endothelium-dependent relaxing factor in cultured cells. *Hypertension* 9(Suppl III):III 186-III 192, 1987.
- Johns RA, Stirt JA: Fat embolism syndrome. *Seminars in Anesthesia* 6:176-179, 1987.
- Loeb AL, Johns RA, Peach MJ: Extracellular calcium is not required for melittin-induced release of endothelium-derived relaxing factors from intact tissues or cultured endothelial cells, *Proceedings of Mechanisms of Vasodilation Symposium*. Edited by Vanhoutte PM. New York, Raven Press, 1988.
- Johns RA, Johnson A, Joob A, Peach MJ, Griffin E, Flanagan T, Kron IL: Internal manipulation of the canine mammary artery impairs endothelium-dependent vasodilation. *Surg Forum* 38:215-216, 1987.
- Johns RA, Kron IL, Carey RM, Lake CL: Atrial myxoma: Case report, brief review, and recommendations for anesthetic management. *J Cardiothorac Anesth* 2:207-212, 1988.
- Johns RA, Peach MJ: Para-bromophenacyl bromide inhibits endothelium-dependent arterial relaxation and cyclic GMP accumulation by effects produced exclusively in the smooth muscle. *J Pharmacol Exp Ther* 244:859-865, 1988.
- Johns RA, Izzo NJ, Milner PJ, Loeb AL, Peach MJ: Use of cultured cells to study the relationship between arachidonic acid and endothelium-derived relaxing factor. *Am J Med Sci* 31(4):287-292, 1988.
- Milner PG, Izzo NJ, Saye JA, Loeb AL, Johns RA, Peach MJ: Endothelium-dependent relaxation is independent of arachidonic acid release. *J Clin Invest* 81:1795-1803, 1988.
- D'Alauro FJ, Johns RA: Hypotension related to desmopressin administration following cardiopulmonary bypass. *Anesthesiology* 69:962-963, 1988.
- Johns RA, Peach MJ, Flanagan T, Kron IK: Probing of the canine mammary artery damages endothelium and impairs vasodilation resulting from prostacyclin and endothelium derived relaxing factors. *J Thorac Cardiovasc Surg* 97:252-258, 1989.
- Johns RA, Milner PJ, Izzo NJ, Saye J, Loeb AL, Peach MJ: EDRF release from cultured endothelial cells does not require phospholipase activation or arachidonate release. *Ann N Y Acad Sci* 559:455-456, 1989.
- Johns RA: Local anesthetics inhibit endothelium-dependent vasodilation. *Anesthesiology* 70:805-811, 1989.
- Johns RA, Linden JM, Peach MJ: Endothelium-dependent relaxation and cyclic GMP accumulation in the rabbit pulmonary artery are selectively impaired by hypoxia. *Circ Res* 65:1508-1515, 1989.

- Wills MH, Johns RA, Stone DJ, Moscicki JC, DiFazio CA: Vascular effects of 2-chloroprocaine and sodium metabisulfite on isolated rat aortic rings. *Reg Anesth* 14:271-273, 1989.
- Stone DJ, Johns RA: Endothelium-dependent effects of halothane, enflurane and isoflurane on isolated rat aortic vascular rings. *Anesthesiology* 71:126-132, 1989.
- Johns RA: Desmopressin is a potent vasorelaxant of aorta and pulmonary vessels isolated from rabbit and rat. *Anesthesiology* 72:858-864, 1990.
- Tracey WR, Linden JM, Peach MJ, Johns RA: Comparison of spectrophotometric and biological assays for nitric oxide and EDRF: Nonspecificity of the diazotization reaction for nitric oxide and failure to detect EDRF. *J Pharmacol Exp Ther* 252:922-928, 1990.
- Johns RA, Peach MJ, Linden JM, Tichotsky A: N^G -monomethyl L-arginine inhibits endothelium-derived relaxing factor-stimulated cyclic GMP accumulation in cocultures of endothelial and vascular smooth muscle cells by an action specific to the endothelial cell. *Circ Res* 67:979-985, 1990.
- Johns RA: Endothelium-derived relaxing factor: Basic review and clinical implications. *J Cardiothor Vasc Anesth* 5:69-79, 1991.
- Frankville D, Harper B, Lake C, Johns RA: Hemodynamic consequences of desmopressin administration after cardiopulmonary bypass. *Anesthesiology* 74:988-996, 1991.
- Linden J, Prater MR, Sullivan GW, Johns RA, Patel A: Contamination of adenosine deaminase by superoxide dismutase activity. Stabilization of endothelium-derived relaxing factor. *Biochem Pharmacol* 41:273-279, 1991.
- Johns RA, Rengasamy A: Endothelium-derived relaxing factor (EDRF): production from L-arginine. *Adv Exp Med Biol* 301:215-227, 1991.
- Tracey WR, Johns RA, Romero G, Peach MJ: Mechanism of phospholipase C-induced release of EDRF from pulmonary artery endothelium. *Am J Physiol* 261 (Cell Physiol 30):C927-C935, 1991.
- Rengasamy A, Johns RA: Characterization of EDRF/NO synthase from bovine cerebellum and mechanism of modulation by high and low oxygen tensions. *J Pharmacol Exp Ther* 259:310-316, 1991.
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- Tao F, Chen Q, Sato Y, Skinner J, Tang P, Johns RA: Inhalational Anesthetics Disrupt Postsynaptic Density Protein-95, Drosophila Disc Large Tumor Suppressor, and Zonula Occludens-1 Domain Protein Interactions Critical to Action of Several Excitatory Receptor Channels Related to Anesthesia. *Anesthesiology.* 2015 122:776-86 PMID: 25654436
- Johns RA, Takimoto E, Meuchel LW, Elsaigh E, Zhang A, Heller NM, Semenza GL, Yamaji-Kegan K. Hypoxia-inducible factor 1 α is a critical downstream mediator for hypoxia-induced mitogenic factor (FIZZ1/RELM α)-induced pulmonary hypertension. *Arterio Thromb Vasc Biol.* 2016. 36(1):134-44. PMID: 26586659
- Li C, Schaefer M, Gray C, Yang Y, Furmanski O, Liu S, Worley P, Mintz CD, Tao F, Johns RA. Sensitivity to isoflurane anesthesia increases in autism spectrum disorder Shank3^{+/ Δ c} mutant mouse model. *Neurotoxicol Teratol.* 2016 Nov 14. pii: S0892-0362(16)30133-7. doi: 10.1016/j.ntt.2016.11.002. PMID: 27856360
- Precision Medicine Workshop Group [Newman JH.....Johns RA.....Xiao L]: Enhancing Insights Into Pulmonary Vascular Diseases Through a Precision Medicine Approach. *American J Resp Crit Care Med* 195:1661-1670 2017
- Eunchai Kang^{1,2*}, Danye Jiang^{3*}, Yun Kyoung Ryu^{3*}, Sanghee Lim³, Minhye Kwak³, Christy D. Gray³, Michael Xu³, Michele Schaefer³, Roger A Johns³, Honjung Song^{1,2,4}, C. David Mintz³ Isoflurane Causes Cognitive Deficits and Disruption of Brain Circuit Development via Activation of the mTOR Pathway in a Mouse Model of Pediatric Anesthetic Neurotoxicity. *PLoS Biol* 15(7):e2001246., 2017 PMID: 28683067
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- Lin Q, Fan C, Skinner JT, Hunter EN, MacDonald AA, Illei PB, Yamaji-Kegan K, Johns RA. HIMF Licenses Macrophages for DAMP Activation to Initiate Pulmonary Vascular Remodeling. *J Immunology*, 2019 203:2862-2871 PMID: 31611261
- Lin Q, Fan C, Gomez-Arroyo J, Meuchel LW, Skinner JT, Fang X, Shu Z, Yamaji-Kegan, Johns RA. HIMF (Hypoxia-Induced Mitogenic Factor) signaling mediates the HMGB1 (High Mobility Group Box 1)-dependent endothelial and smooth muscle cell cross talk in pulmonary hypertension. *Arterio Thromb Vasc Biol*, 2019 39(12):2505-2519 PMID: 31597444

- Ren X, Johns RA, Gao WD. EXPRESS: Right heart in pulmonary hypertension: From adaptation to heart failure. *Pulm Circ* 2019 Apr 3;9(3):2045894019845611.doi: 10.1177/2045894019845611. PMID39042134
- Lin Q, Johns RA. Resistin family proteins in pulmonary diseases. *Am J Physiol*, 2020 319: L422-434. PMID: 32692581
- Lin Q, Price SA, Skinner JH, Hu B, Fan C, Yamaji-Kegan K, Johns RA. Systematic evaluation and localization of resistin expression in normal human tissues by a newly developed monoclonal antibody. *PLoS One*. 2020, 15(7) :e0235546 PMID: 3260943
- Schaefer ML, Perez PJ, Wang M, Gray C, Krall C, Sun X, Hunter E, Skinner J, Johns RA. Neonatal isoflurane anesthesia or disruption of postsynaptic density-95 protein interactions change dendritic spine densities and cognitive function. *Anesthesiology* 2020, Oct 1;133(4)812-823 PMID: 32773681
- Bracamonte-Baran W, Gilotra TW, Rodriguez K, Talor M, Oh BC, Griffin J, Wittstein I, Sharma K, Skinner J, Johns R, Russell S, Anders R, Zhu Q, Halushka M, Branadacher G, Cihakova D: Endothelial stromal PD-L1 modulates CD8+ T cell infiltration after heart transplantation. *Circulation: Heart Failure*. 2021. IP address 162.129.251.65 (in press)
- Tao BD, Kumar S, Lin Q, Gomez-Arroyo J, Skinner JA, Gao W, Johns RA: Resistin-like Molecule α Dysregulates Cardiac Bioenergetics in Neonatal Rat Cardiomyocytes. *Frontiers in Cardiovascular Medicine*. 2021 (in press)

PUBLICATIONS SUBMITTED/IN REVIEW:

- Hazim El-Haddad, BS, Daniel J. Angelini Ph.D., Xingwu Teng, MD, PhD, Ari L. Zaiman, MD, PhD, Milena Gebaska, MD, PhD, Mobusher Mahmud, MD, Anna R. Hemnes, MD, Elizabeth A. Ketner, MS, Azeb Haile, MS, Djahida Bedja MS, Kathleen Gabrielson PhD, Alan Thoms-Chesley, PhD, Michael Crow, PhD, Roger A. Johns M.D., M.H.S., Hunter C. Champion M.D., Ph.D.: Hypoxia-Induced Mitogenic Factor (HIMF) is an autocrine/paracrine mediator of IL4 and IL6-mediated cardiac hypertrophy and failure. (In Revision)
- Furmanski O, Tao F, Li C, Skinner J, Ali Bangash M, Xiao B, Worley PF, Johns RA: Pain processing in a model of Phelan-McDermid Syndrome, an autism spectrum disorder, submitted
- Johns RA, Richards T, Bolen S, Hsien-Yen C, Colantuoni E, Clark MJ Weiner JP: Analysis of Diffusion in Bariatric Surgery Suggests Displacement of Gastric Bypass by Laparoscopic Gastric Banding: Implications for Surgical Efficacy in Obesity. *Obesity J*, submitted
- Johns RA, Richards T, Bolen S, Hsien-Yen C, Colantuoni E, Clark MJ Weiner JP: Surgeon and Facility Effects on Bariatric Surgery Outcomes Suggest Preventable Complications. *Obesity J*, submitted
- Chang HYS, Hua Wang, Yamaji-Kegan K, Johns RA*. RELM β induces airway smooth muscle proliferation via a PI3K/ERK1/2 mediated pathway. *Manuscript in revision*.
- Tao B, Gomez-Arroyo J, Fan C, Zhang A, Skinner J, Samad I, Hillel AT, Berger AE, Cheadle C, Yamaji-Kegan K, Johns RA. Resistin-like Molecule α dysregulates cardiac bioenergetics: Implications for right ventricular dysfunction in pulmonary arterial hypertension. *Manuscript in revision*.

Gomez-Arroyo J, Fang X, Skinner J, Meuchel LW, Yamaji-Kegan K, Dong J, Fan C, Zhu Z, Johns RA. Spatiotemporal overexpression of human resistin in mouse lungs results in vascular remodeling and pulmonary hypertension. *Manuscript in revision.*

INVITED ARTICLES:

Johns RA: Vascular endothelial cells mediate flow-dependent arterial dilation. *Intelligence Reports in Anesthesia* 4:6-7, 1986 (editorial).

Johns RA: Microvascular angina associated with impaired forearm vasodilator reserve. *Intelligence Reports in Anesthesia* 6:6-7, 1988 (editorial).

Johns RA: EDRF/nitric oxide: The endogenous nitrovasodilator and a new cellular messenger. *Anesthesiology* 75:927-931, 1991 (editorial).

Johns RA: Endothelium, anesthetics and vascular control. *Anesthesiology* 79:1381-1391, 1993.

Merin R, Johns RA: Anesthetic and coronary microvascular responses. *Anesthesiology* 81:1093-1096, 1994 (editorial)

Daugherty MO, Rich GF, Johns RA: Vascular endothelium. *Current Opinion in Anaesthesiology* 8:88-94, 1995.

Johns RA: Nitric oxide and minimum alveolar concentration: TKO or knockout. *Anesthesiology* 83:6-7, 1995 (editorial).

Johns RA: Nitric oxide, cyclic guanosine monophosphate and the anesthetic state. *Anesthesiology*, September 1996 (editorial).

Haddad E, Johns RA, Rich GF: Use of inhaled nitric oxide perioperatively and in intensive care patients. *Anesthesiology* 92(6):1821-1825 Clinical Concepts and Comment Section, 2000.

Johns RA: New mechanisms for inhaled NO: Release of an endogenous NO inhibitor? *Anesthesiology* 95 (1): 3-5, 2001.

Johns RA, Yamaji-Kegan K: Unveiling cell phenotypes in lung vascular remodeling. *Am J Physiol Lung Cell Mol Physiol*. 297(6):L1056-8 2009

Johns RA: TH2 Inflammation, HIMF/FIZZ1 and Pulmonary Hypertension/vascular remodeling in schistosomiasis. *Am J Respir Crit Care Med*. 81(3):203-5 2010

BOOKS:

Miller's Anesthesia 6th Edition. Pp. 1-3204 Associate Editor. R.D. Miller, editor. Churchill Livingstone 2005.

Learning Health Care System Concepts v.2008. Institute of Medicine Roundtable on Evidence Based Medicine. Listed Contributor.

INVITED BOOK CHAPTERS:

Johns RA, Peach MJ: Metabolism of arachidonic acid and release of endothelium-derived relaxing factors. In: *Relaxing and Contracting Factors*. Vanhoutte PM, ed. The Humana Press, New Jersey, 1988.

Peach MJ, Johns RA, Rose CE: The potential role of interactions between endothelium and smooth muscle in pulmonary vascular physiology and pathophysiology. In: *The Lung*. Edited by LeEnfant C. Vol

39, Pulmonary Vascular Physiology and Pathophysiology. Weir K and Reeves JT, eds. New York, Marcel Dekker, Inc., 1989.

Johns RA, Tracey WR: Metabolic functions of the lung. In: *Thoracic Anesthesia*. Kaplan J, ed, 2nd Edition, 1990.

Rich GF, Johns RA: Nitric oxide and the pulmonary circulation. In: *Advances in Anesthesia*. Mosby Year Book, Inc. Vol 11:1-24, 1994.

Johns RA: Nitric oxide-guanylyl cyclase signaling pathway. *Anesthesia: Biological Foundations* Lippincott-Raven Publishers, 1997.

Leisure GS, Johns RA: Bretylium tosylate. In: *Essence of Anesthesia Practice*. Roizen MF and Fleisher LA, eds. W.B. Saunders, 1997.

Morris J, Rich GF, Johns RA: Exogenous inhaled nitric oxide as a selective pulmonary vasodilator. In: *Seminars in Anesthesia* 15(1):47-60, 1996.

Haddad E., Millatt LJ, Johns RA: Inhaled nitric oxide: Clinical applications. In: *Lung Physiology*. Kadowitz P, ed., Marcel Dekker, 1999.

Moody EJ, Simon BA, Johns RA: The therapeutic gases: oxygen, carbon dioxide, nitric oxide, helium. In: *Goodman and Gilman's Pharmacological Basis of Therapeutics*, 10th Edition. Hardman JG and Limbird LE, eds. McGraw Hill, 2000.

Parr G, Johns RA: Bretylium Tosylate In: *Essence of Anesthesia Practice*. Roizen NF and Fleisher LA. eds, 2nd Edition. W.S. Saunders, 2001.

Simon, BA, Moody, EJ, Johns, RA: Therapeutic Gases. In: *The Pharmacological Basis of Therapeutics. Goodman and Gilman*, 11th edition, McGraw Hill, 2004.

Jhaveri R, Johns RA: Metabolic and hormonal functions of the lung. In: *Thoracic Anesthesia*. Slinger PDJ, ed. Lippincott Williams & Wilkins, 2004.

Nyhan D, Johns RA: Anesthesia for cardiac surgery. In: *Miller's Anesthesia*, 5th edition. Churchill Livingstone, 2005.

Johns RA: Vasodilators. In: *Anesthetic Pharmacology: Physiologic Principles and Clinical Practice*, 2nd Edition. Evers A, Maze M, Kharasch E, eds. Cambridge University Press, 2009.

OTHER PUBLISHED WORK:

Rivers RJ, Johns RA: The effect of sodium nitroprusside upon platelet function (letter). *Anesthesiology* 71:805, 1989.

McDowell T, Johns RA: CardiacAtlas (book review). *J Cardiothor Vasc Anes*, 1993.

Haddad E, Johns RA, Pajewski TN: Sevoflurane MAC and cerebellar cyclic GMP. *Anesthesiology*, Letter to the Editor. Lippincott Williams & Wilkins. May, 1999.

ABSTRACTS: available on request

INVITED PRESENTATIONS/VISITING PROFESSORSHIPS:

Lecture series on Airway Management and Intubation. Albemarle County Rescue Squad, 1985.

Role of Phospholipase in Endothelium-Dependent Vasodilation. Vascular Smooth Muscle Program Project Lecture Series. University of Virginia, 1987.

Endothelium-Dependent Vasodilation: Role of Phospholipase. Department of Anesthesiology, University of Chicago, April, 1988 (Visiting Professor).

Pulmonary Hypertension and Right Heart Failure. Departments of Anesthesiology and Pulmonary Medicine, University of Chicago, April, 1988 (Visiting Professor).

Volatile Anesthetics and Vascular Smooth Muscle. Symposium on Subcellular Mechanisms of Anesthetic Action on Muscle. Keynote speaker and scientific presentation. Augusta, GA, September, 1988.

Endothelium-Derived Relaxing Factor (Keynote Speaker). Symposium on Subcellular Mechanisms of Anesthetic Action on Muscle. Augusta, GA, September, 1988.

Postbypass Pulmonary Hypertension (panel). Association of Cardiac Anesthesiologists Annual Meeting, San Francisco, CA, October, 1988.

Smooth Muscle Physiology and Anesthetics. Workshop on Physiology and Pharmacology of Muscle as Related to Anesthesiology. American Society of Anesthesiologists Annual Meeting, San Francisco, CA, October, 1988.

Endothelium-Dependent Vasoactivity. Research Conference. Department of Anesthesiology, University of Washington, Seattle, WA, December, 1988 (Visiting Professor).

Endothelium-Vascular Smooth Muscle Interactions. Research Conference. Departments of Pharmacology and Anesthesiology, Yale University, January, 1989 (Visiting Professor).

Vascular Responses of Volatile Anesthetics: Mechanisms of Action. Grand Rounds. Department of Anesthesiology, Yale University, January, 1989 (Visiting Professor).

Endothelium-Derived Relaxing Factor: Interactions with Hypoxia in the Pulmonary Circulation. Research Conference. Department of Anesthesiology and Critical Care Medicine, Johns Hopkins University, November, 1989 (Visiting Professor).

Inhalational Anesthetics: Pharmacokinetics. Medical student pharmacology course. University of Virginia, March, 1990.

Inhalational Anesthetics: Pharmacodynamics. Medical student pharmacology course. University of Virginia, March, 1990.

N^G-monomethyl-L-arginine (LN^GMMA) impairs EDRF-stimulated cGMP accumulation in endothelial cell-vascular smooth muscle co-cultures by an action specific to the EC. Gordon Conference on Vascular Cell Biology. Meriden, NH, July, 1990.

Regulation of Endothelium-Derived Relaxing Factor and Inhibition by Hypoxia and Anesthetics. Symposium on Subcellular Mechanisms of Anesthetic Action in Muscle. Johns Hopkins University, Baltimore, MD, September, 1990 (Visiting Professor).

What is Relevant Anesthesia Research? (Workshop) American Society of Anesthesiologists Annual Meeting. Las Vegas, NV, October, 1990.

Endothelium-Derived Relaxing Factor: An Update. Association of Cardiac Anesthesiologists Annual Meeting. Las Vegas, NV, October, 1990.

Inhalational Anesthetics: Pharmacokinetics. Medical student pharmacology course. University of Virginia, January, 1991.

Inhalational Anesthetics: Pharmacodynamics. Medical student pharmacology course. University of Virginia, January, 1991.

Coronary Blood Flow and Cardiac Ischemia. Grand Rounds. Department of Anesthesiology, University of Pennsylvania, February, 1991 (Visiting Professor).

Endothelium-Derived Relaxing Factor. Research Seminar. Department of Anesthesiology, University of Pennsylvania, February, 1991 (Visiting Professor).

Hypoxia and Vascular Reactivity. Graduate Course in Vascular Cell Biology. Department of Physiology, University of Virginia, March, 1991.

What's New in Endogenous Vasodilators? The University of Chicago Department of Anesthesia and Critical Care Continuing Medical Education Conference. Chicago, IL, Dec 7, 1991.

Inhalational Anesthetics: Pharmacokinetics. Medical student pharmacology course. University of Virginia, January, 1992.

Inhalational Anesthetics: Pharmacodynamics. Medical student pharmacology course. University of Virginia, Charlottesville, VA, January, 1992.

EDRF/NO—A Novel Cell Messenger. Surgical Grand Rounds. University of Virginia, Charlottesville, VA, April 11, 1992.

Endothelium, Anesthetics and Vascular Control. Special Anesthesiology Symposium on Control of Vascular Tone. American Society of Anesthesiologists Annual Meeting. New Orleans, LA, October, 1992.

Reformation of a Noxious Gas: The Nitric Oxide Story. Joint Grand Rounds. Harvard Medical School, Beth Israel Hospital and Brigham and Women's Hospital. Boston, MA, November, 1992 (Visiting Professor).

Anesthesia and Major Noncardiac Surgery. Journal Club. Harvard Medical School, Beth Israel Hospital and Brigham and Women's Hospital. Boston, MA, November, 1992 (Visiting Professor).

The coronary circulation and myocardial ischemia. Grand Rounds. University of Michigan Department of Anesthesiology. Ann Arbor, MI, December, 1992 (Visiting Professor).

Reformation of a Noxious Gas: The Nitric Oxide Story. Research Conference. University of Michigan Department of Anesthesiology. Ann Arbor, MI, December, 1992 (Visiting Professor).

Endothelium and Cardiovascular Disease. Pediatric Cardiology Division, University of Virginia. Charlottesville, VA, December, 1992.

Nitric Oxide: Basic Mechanisms and Importance to the Anesthesiologist. Grand Rounds. Columbia University College of Physicians and Surgeons, Department of Anesthesiology, New York, January, 1993 (Visiting Professor).

Inhalational Anesthetics: Pharmacokinetics. Medical student pharmacology course. University of Virginia, Charlottesville, VA, January, 1993.

Inhalational Anesthetics: Pharmacodynamics. Medical student pharmacology course. University of Virginia, Charlottesville, VA, January, 1993.

Local Mediators in Vascular Control. Physiology Graduate Course 852. University of Virginia, Charlottesville, VA, March, 1993.

Regulation of Nitric Oxide—Guanylyl Cyclase Signaling in the Pulmonary Vasculature. Visiting Professor: Division of Pulmonary Medicine and Cardiovascular Pulmonary Research Laboratories. University of Colorado, August, 1993 (Visiting Professor).

The Nitric Oxide—Guanylyl Cyclase Signaling Pathway: Implications for the Gastroenterologist. Department of Gastroenterology. University of Virginia Charlottesville, VA, September, 1993.

Reform of a Noxious Gas: The Nitric Oxide Story. Robert M. Epstein Anesthesiology Symposium. University of Virginia. September, 1993.

Nitric Oxide in Pain and Anesthesia. Invited speaker and conference organizer. 6th International Congress on Pain, Anesthesia and Endocrinology. Chicago, IL, October, 1993.

Nitric Oxide and Cardiovascular Disease. Association of Cardiac Anesthesia Annual Meeting. Washington, D.C., October, 1993.

Nitric Oxide: Regulation, Interactions with Anesthetics and Clinical Implications. Ohmeda Pharmaceutical Division. New Jersey, December, 1993.

Inhalational Anesthetics: Pharmacokinetics. Medical student pharmacology course. University of Virginia, Charlottesville, VA, January, 1994.

Inhalational Anesthetics: Pharmacodynamics. Medical student pharmacology course. University of Virginia, Charlottesville, VA, January, 1994.

Nitric Oxide: Molecular Regulation and Role in the Pulmonary Circulation. Department of Anesthesiology Grand Rounds. Massachusetts General Hospital and Harvard Medical School. Boston, MA, April, 1994 (Visiting Professor).

Biochemical and Molecular Regulation of Nitric Oxide. Research Conference, Department of Anesthesiology. University of Pittsburgh. Pittsburgh, PA, April, 1994 (Visiting Professor).

Myocardial Stunning and Ischemia-Reperfusion Injury: New Concepts. Grand Rounds, Department of Anesthesiology. University of Pittsburgh. Pittsburgh, PA, April, 1994 (Visiting Professor).

Upregulation of Nitric Oxide Synthase Expression in Chronic Hypoxia-Induced Pulmonary Hypertension. FASEB Summer Research Conference on Endothelial Cell Biology. Copper Mountain, CO. June, 1994.

Nitric Oxide Signaling Pathway: Basic Mechanisms and Implications for Anesthesiologists. Grand Rounds, Department of Anesthesiology, Washington University. St. Louis, MO, July, 1994 (Visiting Professor).

Cell-Cell Interactions. NIH Conference: Male Infertility and Impotence. Charlottesville, VA, August, 1994

Nitric Oxide in Cardiovascular Physiology and Disease. Harvard Cardiothoracic Course. Boston, MA, September, 1994.

Reform of a Noxious Gas: The Nitric Oxide Story. Grand Rounds, Department of Anesthesiology. University of California at San Diego. November, 1994 (Visiting Professor).

New Concepts in Myocardial Stunning and Ischemia-Reperfusion Injury. Department of Anesthesiology. University of California at San Diego. November, 1994 (Visiting Professor).

Health Care Reform and the Academic Medical Center. Department of Anesthesiology. University of California at San Diego. November, 1994 (Visiting Professor).

Clinical Application of Inhaled Nitric Oxide. Department of Anesthesiology and San Diego Society of Anesthesiologists. University of California at San Diego. November, 1994 (Visiting Professor).

Nitric Oxide in the Cardiovascular System. Stengert Memorial Lecture. University of California at Davis. February, 1995 (Visiting Professor).

Regulation of the Nitric Oxide-Guanylyl Cyclase Signaling Pathway. Endocrinology Division, Department of Internal Medicine, University of Virginia. February, 1995.

Regulation of the Nitric Oxide Signaling Pathway and Its Role in the Pulmonary Vasculature. Department of Pathology, University of Virginia. March, 1995.

The Nitric Oxide Story. Japanese Society of Circulation Control (Keynote speaker), Kyoto, Japan. May, 1995.

Anesthesia and Nitric Oxide. New York Post-Graduate Assembly (organized session and presented lecture: A Nitric Oxide. A Goldilocks Perspective) New York, December, 1995.

Anesthetic Interactions with Nitric Oxide Signaling Pathway. (Keynote Speaker). Taiwan Society of Anesthesiologists. Taiwan, September, 1996.

Molecular Regulation of Nitric Oxide Synthase(s) and Applications to Lung Biology. Pfizer Pharmaceuticals Research and discovery Lecture Series. Groton, CT. August, 1996.

Nitric Oxide, Oxygen and Pulmonary Vascular Remodeling. Department of Anesthesiology, University of Alabama, March, 1997 (Visiting Professor).

Confessions of a Clinician Scientist. Department of Anesthesiology, University of Alabama, March, 1997 (Visiting Professor).

The NO Signal Transduction System in the Lung from Molecular Biology to Bedside Therapy. Invited Speaker FASEB Plenary Session entitled Nitric Oxide and the Lung. New Orleans, LA, April, 1997.

Nitric Oxide: Will the Molecule of the Year Change Anesthetic Practice? New York Post-Graduate Assembly (organized session and presented lecture: Nitric Oxide and Anesthetics) New York, December, 1997.

Nitric Oxide, Oxygen and the Lung. Department of Anesthesiology, Columbia Presbyterian Medical Center, March, 1998 (Visiting Professor).

How to Become a Successful Clinician-Scientist in Anesthesiology, Columbia Presbyterian Medical Center, March, 1998 (Visiting Professor).

Nitric Oxide, Oxygen and Pulmonary Vascular Remodeling. Department of Anesthesiology, Medical College of Wisconsin, April, 1998 (Visiting Professor).

Nitric Oxide in Anesthesia and Analgesia. Department of Anesthesiology, Medical College of Wisconsin, April, 1998 (Visiting Professor).

Effect of Anesthetics on NO Synthase Activity. Keynote Speaker at the 25th Anniversary of the Foundation of the Department of Anesthesiology and Resuscitation at the Johann Wolfgang Goethe University, Frankfurt am Main, Germany June 27, 1998.

Molecular Regulation of NO Synthases by Hypoxia. Department of Physiology, Johann Guttenberg University. Mainz, Germany, June 29, 1998 (Visiting Professor).

Role of Nitric Oxide in the Development of Pulmonary Hypertension. Invited Speaker, XXth Congress of the European Society of Cardiology. Vienna, Austria August 23, 1998.

NO/cGMP Signaling Pathway in the Mechanism of Spinal Hyperalgesia. Department of Anesthesiology, MD Anderson Hospital, Houston, TX, February 16, 2000 (Visiting Professor).

Nitric Oxide in Plasticity of Hyperalgesia. Department of Anesthesiology, University of Maryland, Baltimore, MD, 2000.

Disruption of Post Synaptic Density Protein Interactions: Novel Mechanisms of Anesthesia. Department of Anesthesiology, Brigham and Women's Hospital, Boston, MA, August 23, 2001 (Visiting Professor).

Disruption of Post Synaptic Density Protein Interactions: Novel Mechanisms of Anesthesia, Department of Anesthesiology, Massachusetts General Hospital, Boston, MA, August 24, 2001 (Visiting Professor).

Invited lecturer to honor Dr. Vainutis Vaitkevicius 50 years of Clinical Practice. Karmanos Cancer Center, Detroit, MI, November, 2001 (Keynote Address).

Anesthetic Interactions at the Post-Synaptic Density. Department of Anesthesiology, University of Pittsburgh, November, 2002.

Disruption of Post Synaptic Density Protein Interactions: Novel Mechanisms of Anesthesia. Department of Anesthesiology, University of Geneva, Geneva, Switzerland, June, 2002 (Visiting Professor).

WTG Morton Society. Developing Academic Anesthesiologists. Palm Desert, CA February 2003.

WTG Morton Society. Future Direction in Anesthesiology Practice. Naples, FL February 2003.

Visiting Professor, Department of Anesthesia University of Medicine and Dentistry, New Jersey, November 10, 2004.

Post-synaptic Density Proteins: Novel Therapeutic Targets for Hyperalgesia. Keynote address, 2004 Annual Meeting and Scientific Conference of The Chinese Association for the Study of Pain (CASP). April 10-11, 2004.

A Novel-Hypoxia-Induced Mitogenic Factor in Lung with Vasoconstrictive and Angiogenic Properties. Eighth Pan Arab Congress of Anesthesia, Beirut, Lebanon, September 23, 2004.

Impaired NMDA Receptor-Mediated Postsynaptic Function and Dependent Persistent Pain in Mice Lacking PSD-93. Eighth Pan Arab Congress of Anesthesia, Beirut, Lebanon, September 25, 2004.

Postsynaptic Density Proteins in Mechanisms of Anesthesia. National Institutes of Mental Health, Bethesda MD December, 2004.

New Concepts in the Etiology and Therapy of Pulmonary Hypertension. Visiting Professor, Yale University Department of Anesthesiology. May 31, 2005.

The Massachusetts Health Plan: A Model for National Health Care Reform? Institute of Medicine August 26, 2006.

Making Sausage in Health Policy—The 109th Congress, an Insider's Perspective. Seminar in Health Policy Series. Department of Health Policy and Management. Johns Hopkins Bloomberg School of Public Health. September 11, 2006.

Hypoxia Induced Mitogenic Factor in the Molecular Pathophysiology of Pulmonary Hypertension. Cardiac Anesthesiology Seminar. Johns Hopkins University. January 18, 2007.

Physicians and Advocacy: Embryonic Stem Cell Legislation in the 109th and 110th Congresses. Physician and Society Course, Johns Hopkins University School of Medicine. January 24, 31 and February 7, 2007.

Pay for Performance: What's an Anesthesiologist to Do? University of Utah 52nd Postgraduate Course in Anesthesiology. Salt Lake City UT, February 14, 2007.

Safety and Quality in the Operating Room. University of Utah 52nd Postgraduate Course in Anesthesiology. Salt Lake City UT, February 14, 2007.

Science Policy: Drugs, Bugs and Stem Cells. University of Utah 52nd Postgraduate Course in Anesthesiology. Salt Lake City UT, February 14, 2007.

The Massachusetts Health Plan and State Based Health Care Reform: Will It Work for You? University of Utah 52nd Postgraduate Course in Anesthesiology. Salt Lake City UT, February 14, 2007.

Politics and Health Policy on Capitol Hill—The Process of Advancing Legislation. For Course 308.602, The Role of Government in Health Policy. Department of Health Policy and Management. Johns Hopkins Bloomberg School of Public Health. April 4, 2007.

Development and Mentoring of Clinician Investigators in Anesthesiology: A Case History. Grand Rounds. Department of Anesthesiology and Critical Care Medicine. Johns Hopkins University. September 27, 2007.

Health Reform '08: What the candidates propose. Maryland Society of Anesthesiologists. Annapolis, MD, December 2007.

Case conference presentation. Johns Hopkins Department of Anesthesiology. December 2007.

Physicians and Advocacy: Embryonic Stem Cell Legislation in the 109th and 110th Congresses. Physician and Society Course, Johns Hopkins University School of Medicine. January 24, 31 and February 7, 2008 (6 hours teaching).

Presidential Candidates and Health Reform. Hospital Financial Management Association Annual Meeting, March 7, 2008.

Case conference. Johns Hopkins Department of Anesthesiology/CCM, March 10, 2008.

Hypoxia Induced Mitogenic Factor—a novel mediator of PAH and Asthma. Department of Medicine, Division of Allergy and Immunology. Johns Hopkins University. April 2008.

Health Reform '08: Home Run or Strikeout? Association of University Anesthesiologists Annual Meeting. Durham, NC, May 2008.

Johns RA: MAGUK proteins in chronic pain mechanisms. 12th World Congress on Pain. International Association for the Study of Pain. Glasgow, Scotland, August 2008 (invited lecture).

Health Reform and Health Policy Issues in the 2008 Election. American Society of Anesthesiologist's Annual Meeting. Orlando, FL October 2008.

A Novel Family of Pleiotropic Cytokines. Department of Pharmacology, Johns Hopkins University, November 6, 2008.

Intraoperative and didactic teaching of anesthesiology and critical care medicine at the medical school and two hospitals in Asmara, Eritrea, January 21-February 4, 2009

Hypoxia-Induced Mitogenic Factor. Department of Hygeine, Bloomberg School of Public Health. September 2009

Physicians and Advocacy. Physician and Society Course. Johns Hopkins Medical School. Four 2 hour sessions Fall 2009

Intraoperative and didactic teaching of anesthesiology and critical care medicine at Benin Teaching Hospital, Benin City, Nigeria. November 8-15, 2009

Intraoperative and didactic teaching of anesthesiology and critical care medicine at Korle Bu Hospital, Accra, Ghana November 16-20, 2009

Nitric Oxide/cGMP in Pulmonary Hypertension: Dead or Alive? Invited speaker. 4th International meeting Pulmonary Vascular Research International. Lisbon, Portugal, January 2010

HIMF/FIZZ1 in Pulmonary Hypertension and Cardiac Hypertrophy. Division of Cardiac Anesthesia Johns Hopkins Medicine. March 11, 2010

A FAER Funded Research Career: From Gene to Therapy in Pulmonary Hypertension. Foundation for Anesthesia Education and Research 2010 Honorary Lecturer. American Society of Anesthesiology Annual meeting, Denver, CO October 2010.

Physicians and Advocacy. Physician and Society Course. Johns Hopkins Medical School. Four 2 hour sessions Fall 2011

RELM Proteins in Pulmonary Hypertension. Invited speaker at Pulmonary Vascular Research Institute Annual Meeting, Panama City, Panama January 2011

New Concepts in Pulmonary Hypertension: From Gene to Therapy. Invited speaker for the 2011 Emmanuel Papper Annual Lecture. Columbia University. New York, NY November 2011

Physicians and Advocacy. Physician and Society Course. Johns Hopkins Medical School. Four 2 hour sessions Fall 2012

Johns Hopkins Medicine: Excellence and Discovery. Zhicheng Hospital. Three Gorges, China. November 2012

From Gene to Therapy: Resistin-like proteins in Pulmonary Hypertension. Shenzhen University School of Medicine and Shenzhen Biotechnology Institute. Shenzhen, China November 2012

Molecular Scaffolding Proteins in Anesthesia and Chronic Pain. Chaoyang Hospital Department of Anesthesiology. Capital Medical University. Beijing, China. November 2012

From Gene to Therapy: Resistin-like proteins in Pulmonary Hypertension. Plenary Speaker, 2012 Association of University Anesthesiologist's Annual Meeting. Cleveland, OH May 2012

MAGUK Proteins in Anesthesia, Analgesia and Autism. Crawford W. Long Lecture. Emory University, Atlanta, GA March 2013

Physicians and Advocacy. Physician and Society Course. Johns Hopkins Medical School. Four 2 hour sessions Fall 2013

Physicians and Advocacy. Physician and Society Course. Johns Hopkins Medical School. Four 2 hour sessions Fall 2014

MAGUK Proteins in Anesthesia, Analgesia and Autism. Mechanism of Anesthesia Conference. Bonn Germany June 2015

Inhaled Nitric Oxide: Treating the Patient or the Doctor? Chinese Society of Anesthesiologists Annual Meeting Keynote Lecturer, Xian, China September 2015

RELM Proteins in Pulmonary Hypertension: From Gene to Therapy. Chinese Society of Anesthesiologists Annual Meeting Keynote Lecturer, Xian, China September 2015

RELM Proteins in Pulmonary Hypertension: From Gene to Therapy. Invited to deliver the Annual Ralph Waters lecture. Department of Anesthesiology, University of Wisconsin. August 2015

Physicians and Advocacy. Physician and Society Course. Johns Hopkins Medical School. Four 2 hour sessions Fall 2015

INDIVIDUALS MENTORED BY DR. ROGER JOHNS WHO SPENT AT LEAST ONE YEAR WITH HIM AND ARE NOW INDEPENDENT INVESTIGATORS OR CURRENTLY IN HIS LABORATORY

| MENTEE | TRAINING TIME IN JOHNS LABORATORY | CURRENT POSITION | COMMENTS |
|---------------------------------|--|--|--|
| W. Ross Tracey, Ph.D. | 1989-1991 Postdoctoral Fellow | Senior Research Scientist, Department of Cardiovascular and Metabolic Diseases, Pfizer Pharmaceuticals, Groton, CT | Leads a research team investigating ischemia-reperfusion and preconditioning in the heart. Directs research fellow grant program |
| Appavoo Rengasamy, Ph.D. | 1989-1993 Postdoctoral Fellow | Senior Research Scientist, National Institute of Occupational Safety and Health, Pittsburgh, PA | Studies lung oxidant injury and ultrafine particle nanotechnology |
| George F. Rich, MD, PhD | 1991-1994 Joined my laboratory as a new Assistant Professor where we developed his research program and independent funding in inhaled nitric oxide research | Professor and Chair of Anesthesiology, Professor of Bioengineering. Harrison Teaching Professor. University of Virginia, Charlottesville, VA | Studies lung physiology and the effects of anesthesia on endothelium and vascular smooth muscle |
| L.V. Ravichandran, Ph.D. | 1992-1997 Postdoctoral Fellow | Senior Scientist, Invitrogen, LaJolla, CA | Leads a team developing siRNA and miRNA technologies |

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| Xinhua Zhan, M.D. | 1992-1998 Rockefeller Exchange Fellow, 2001-2003 Postdoctoral Fellow | Assistant Project Scientist, Department of Anesthesiology, UCSF | Studies anesthetic mechanisms and vascular biology with Philip Bickler. Recently accepted a research faculty position at UC Davis (first RO1) |
| Timothy D. Le Cras, Ph.D. | 1993-1996 Postdoctoral Fellow | Associate Professor (with Tenure) of Pediatrics, Children's Hospital, University of Cincinnati | Independent NIH RO1 funded research program studying lung injury and vascular remodeling molecular mechanisms |
| Thomas Pajewski, M.D., Ph.D. | 1993-1996 Assistant Professor doing anesthetic mechanism research in my laboratory | Associate Professor (tenure) of Anesthesiology and Neurosurgery, Director of Neuroanesthesia, University of Virginia, Charlottesville, VA | Now studies clinical outcomes related to neuroanesthesia and anesthetic neurotoxicity. |
| Chun Xue M.D., Ph.D. | 1993-1995 Postdoctoral Fellow | Senior Research Scientist, NOVARTIS Pharmaceuticals, Basel Switzerland. Pharmaceutical Entrepreneur | Developed several startup pharmaceutical companies in Hong Kong, USA, CHINA |
| Zhiyi Zuo, M.D., Ph.D. | 1994-1997 Postdoctoral Fellow, then resident in Anesthesiology 1997-2000 | Professor of Anesthesiology, Neurosurgery and Neuroscience with tenure at University of Virginia. Robert M. Epstein Endowed Professor | FAER starter grant, multiple NIH RO1 grants, 2005 ASA Presidential Scholar Award, IARS Frontiers in Anesthesia Award. Research areas: 1) regulation of glutamate transporters; 2) preconditioning-induced neuroprotection; and 3) selective gene silencing for the treatment of Alzheimer's disease |
| Lesley Millatt, Ph.D. | 1995-1999 Postdoctoral Fellow | Research Scientist, Faculte de Pharmacie, Universite de Lille II, Lille, France | Studies vascular biology, angiogenesis. Leads research team at Genfit, Lille FR |

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| Lisa Palmer, Ph.D. | 1995-1999 Research Associate and Research Assistant Professor | Associate Professor of Anesthesiology and Pediatrics | AHA, NIH RO1 and Defense Department funding. Studies nitric oxide oxidative mechanisms in pulmonary hypertension and lung injury. Special expertise in transcriptional regulation. 2012-present Co-Director NIH PPG |
| Elie Haddad, M.D. | 1996-1999 Postdoctoral Fellow (following his Anesthesiology Residency) | Associate Professor of Anesthesiology, University of Lille, Lille, France | After several years as a clinician-scientist at the University of Lille, I have heard that he recently moved to a clinical practice position. |
| Dechun Li, M.D., Ph.D. | 1997-1999 Postdoctoral Fellow at Virginia, 2000-2004 Assistant Professor at Johns Hopkins | Associate Professor, Pulmonary Medicine Division of Internal Medicine Department, St. Louis University, St. Louis, MO | NIH RO1-funded independent laboratory. Studies broncho-pulmonary dysplasia and lung development |
| Yuan Xiang Tao, Ph.D. | 1997-1999 Postdoctoral Fellow at Virginia, 2000-2002 Instructor at Johns Hopkins Advanced to Associate Professor at Hopkins. | 2002-2006 Assistant Professor at Johns Hopkins, 2006-2013 Associate Professor at Johns Hopkins. 2013-present Professor and Vice Chair for Research, Robert Wood Johnson School of Medicine and Dentistry. | Multiple NIH awards (RO1, R21) and foundation grants supporting an independent laboratory program with 6 fellows. Has gained international recognition for his research in molecular mechanisms of chronic pain. Rita Allen Award |
| Frank Jung, M.D., Ph.D. | 1997-1999 Performed research component of his Cardiology Fellowship in my lab | Assistant Professor of Cardiology, University of Frankfurt, Frankfurt Germany | Studied cardiac apoptosis and transcriptional oxidative mechanisms in the heart. Recently moved to the Dean Health System in Madison, WI |
| Gotaro Shirakami, M.D. | 1998-1999 Visiting Research Fellow from Kyoto University | Professor and Chair of Anesthesiology at Kagawa University, Kagawa, Japan | Studies clinical and physiologic actions of vasoactive peptides and molecules. Appointed Chair of Anesthesiology 2008 |

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| Peizhong Mao, Ph.D. | 2000-2003 Postdoctoral Fellow | Assistant Professor of Anesthesiology, Oregon Health Sciences University, Portland, OR | Funded by AHA. Molecular Biology and Gene Regulation |
| Xingwu Teng, Ph.D. | 2000-2005 Postdoctoral Fellow | Research Scientist, Cell Biology, Lerner Research Institute, Cleveland Clinic Foundation, Cleveland, Ohio | Now a practicing pharmacist. |
| Klaus Wagner, M.D. | 2002-2003 Research Sabbatical in my laboratory | Professor of Anesthesiology, University of Luebeck, Luebeck Germany. Now De[artment Chair. | Interested in hypoxic gene regulation, lung development. Funded by German government. |
| Feng Tao, M.D., Ph.D. | 2000-2004 Postdoctoral Fellow, 2004-2006 Research Associate | 2006-2008, Instructor, Johns Hopkins. 2008-2013, Assistant Professor, Johns Hopkins ACCM Tenured Associate Professor, Baylor University 2014-present. RO1 funded in pain biology. | Splits his time between working as a co-PI on my anesthetic mechanisms grant and my MAGUK protein chronic pain grant and developing his own program in pain research program in two areas: 1) Mechanism of Stargazin in mediating NMDA-AMPA interactions in neuropathic pain and 2) Stem cell therapy for chronic pain following spinal cord injury. Has independent RO1 on Glu Receptors and Chronic Pain |
| Wen-Jinn Liaw, M.D., Ph.D. | 2001-2002 Visiting Assistant Professor in my laboratory | Professor (tenure) and Chair of Anesthesiology and Director of Critical Care Medicine, Tri-Service General Hospital/National Defense Medical Center, Taipei 114, Taiwan, Republic of China. Evolved to CEO of institution key medical center in Taichung, TW. | Independent, government-funded research program in pain biology and mechanisms of opiate tolerance based on work developed in my laboratory. President of Taiwan Society of Anesthesiologists |

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| Reda Girgis, M.D. | 2001-2006 Developed and carried out his KO8 award in my laboratory. | Associate Professor of Pulmonary Medicine, Johns Hopkins University. Now Director of Lung Transplant program associated with Michigan State University School of Medicine. | Recently received his second RO1 award and is a co-investigator on our SCCOR grant. Focus is basic and clinical aspects of pulmonary hypertension. Now clinician investigator and Director of Lung Transplant program. |
| Qingning Su, Ph.D. | 2003—March 31, 2009 | Professor of Molecular and Cell Biology Biotechnology Research Center, Shenzhen University Building W2-A2, High-Tech Industrial Park Shenzhen, Guangdong, China 518057 (Beginning April 1, 2009) Now has his own therapeutic antibody production company in Shenzhen, CN | Studying molecular mechanisms of chemotaxis by the HIMF/FIZZ family of proteins. Mitochondrial structure in cardiac pathology. Has independent institutional and Chinese Government funding to study molecular mechanisms of mitochondrial transport along cytoskeleton and delivery of energy to allow certain cellular processes. |
| Kazuyo Yamaji, Ph.D. | 2004-2007 Postdoctoral Fellow | 2007-2012. Research Associate, Johns Hopkins. 2012-present Assistant Professor, Johns Hopkins ACCM 2019-present Associate professor of Anesthesiology (basic science) University of Maryland. | Splits her time between my SCCOR grant, later CADET Grant in Pulmonary Hypertension and developing her own program based on studies of the role of HIMF/FIZZ1 in tumor growth. Has Pulmonary Foundation Grant and first RO1 from NHLBI in immune mechanisms in pulmonary hypertension. |

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| Daniel Angelini, Ph.D. | 2005-2009 Postdoctoral Fellow | Lung research for Department of Defense, Aberdeen Proving Grounds., MD | Working on my SCCOR grant studying HIMF/FIZZ in human pulmonary hypertension. Has his own research program related to lung injury and lung toxicity |
| Blaine Easley, MD, PhD | 2008-2010) New Assistant Professor | Associate Professor, Department of Anesthesiology and Critical Care Medicine, Baylor(Pediatric Cardiac and PICU). Now Professor at Texas Children's Hospital. | Independent Clinician Investigator in area of cerebrovascular monitoring. Funding from industry and NIH. |
| Andres Poloczek, M.D, Ph.D. | 2008-present. Postdoctoral Fellow | | Working on our SCCOR grant studying the single nucleotide polymorphisms of RESISTIN and RELM-B in asthma and pulmonary hypertension. Additional clinical studies of HIMF/resistin in sepsis and asthma. Plans on starting Anesthesiology residency after one more year in lab. Long term academic clinician-scientist commitment. |
| Irina Kolosova, Ph.D. | 2008-12. Research Associate 2012-2013 Research Associate in Division of Cardiology, University of Maryland | Now organizes clinical trials in Oncology at Johns Hopkins. | Working on our SCCOR grant and my RO1 investigating the effect of the HIMF/FIZZ family of proteins on stem cell growth, differentiation and tissue repair. Also developing her own research direction and submitting a stem cell grant as PI this winter. |

Table needs updating for Changsheng Li, Sufan Fang, Bingdong Tao, Ailan Zhang, David Mintz, Christy Gray, Qing Lin, Jiana Li, Yun Wang, Patric Perez, Katrienn Von Raemdonk All in lab in the 2013-2018 years.

ALL LABORATORY TRAINEES (1 month or more):

Undergraduates:

David Swett (1988) Dental student, Medical College of Virginia,
Richard Klass (1988) Medical student, University of Michigan
Muraya Gathinji (2001–2003) Neurosurgery resident, UCLA
Gregory Kapp (2004–2006) Postdoctoral Fellow UCSF Quantitative Biology Laboratory
Noah Weiner (2008) Undergraduate, LeHigh University
Dawn Zhu (2008) as high school student. Undergrad at MIT. Now is an Orthopedic Resident at Johns Hopkins 2001-2002.
[Stopped tracking these after 2008. Numerous]
Andrew MacDonald (2017-2019 part time). Now Research Scientist at Thermo-Fisher

Graduate Students:

Gwen Wise (1988–1991) Pharmacology Graduate Student, Research Scientist at Merck-Dupont
Caroline Krall (2019-present) Graduate student currently in my laboratory and the Center for Molecular Medicine.

Medical Students:

George Proctor (1990–1991) Assistant Professor of Psychiatry, Loma Linda University
James Spaeth (1990, 1992) Associate Professor and Director of Cardiac Anesthesia, University of Cincinnati Children's Hospital
Christian Reikersdorfer (1990) Anesthesiologist, Dean Health System, Madison, WI
Eric Erenson (1991) fourth year medical student
Mike Muro (1993–94) Anesthesiologist (Pain Medicine) Roswell, GA
Bella Davi (1994) second year medical student
Paul Reynolds (1994) Anesthesiology, (Pain Medicine), Stanford, CA
Aalya Hassan (1998) Resident in Internal Medicine, University of Virginia, Charlottesville, VA
Abere Karibi-Ikiriko (2002) Resident, Howard University, Washington DC
[Stopped tracking med students and undergraduates in lab after moving to Hopkins. Always have summer students in the lab and often undergraduates throughout the school year.]

Post-Doctoral Fellows and Research Associates:

W. Ross Tracey, Ph.D. (1989–1991) Senior Research Scientist, Department of Cardiovascular and Metabolic Diseases, Pfizer Pharmaceuticals, Groton, CT
Appavoo Rengasamy, Ph.D. (1989–1993) Senior Research Scientist, National Institute of Occupational Safety and Health, Pittsburgh, PA.
L.V. Ravichandran, Ph.D. (1992–1997) Senior Scientist, Invitrogen. La Jolla, CA
Timothy D. Le Cras, Ph.D. (1993–1996) Associate Professor of Pediatrics Children's Hospital, University of Cincinnati
Gregory C. Dailey Ph.D. (1993–1995) Physician Assistant, Trauma Surgery and Critical Care, Stigler, OK
Paul Koberna, M.D. (1993–1994) Pulmonologist, Internal Medicine, State College, PA
Chun Xue M.D., Ph.D. (1993–1995) Senior Research Scientist, NOVARTIS Pharmaceuticals Basel Switzerland
Zhiyi Zuo, M.D., Ph.D. (1994–1996) Professor of Anesthesiology, University of Virginia
Lesley Millatt, Ph.D. (1995–1999) Research Scientist, Faculte de Pharmacie, Universite de Lille II, Lille, France.
Elie Haddad, M.D. (1996–1999) Associate Professor of Anesthesiology, University of Lille, Lille, France
Dechun Li, M.D., Ph.D. (1997–1999) Associate Professor, Pulmonary Medicine Division of

- Internal Medicine Department, St. Louis University, St. Louis, MO
- Yuan Xiang Tao, Ph.D. (1997-1999) Associate Professor, Johns Hopkins University, Baltimore, Maryland
- Xinhua Zhan, M.D. (1997–1998; 2001–2003) Assistant Project Scientist, Department of Anesthesiology, UCSF, San Francisco, CA
- Frank Jung, M.D., Ph.D. (1997–1999) Assistant Professor of Cardiology, University of Frankfurt, Germany
- Gotaro Shirakami, M.D. (1998–1999) Professor and Chair of Anesthesiology, Kagawa University, Kagawa, Japan
- Peizhong Mao, Ph.D. (2000–2003) Assistant Professor, Department of Anesthesiology and Peri-operative Medicine, Oregon Health and Science University, School of Medicine, Portland, Oregon
- Wen-Jinn Liaw, M.D., Ph.D. (2001–2003) Professor, Tri-Service General Hospital/National Defense Medical Center, Taipei 114, Taiwan, Republic of China
- Xingwu Teng, Ph.D. (2000–2005) Research Scientist, Cell Biology, Lerner Research Institute, Cleveland Clinic Foundation, Cleveland, Ohio
- Ming Fang, M.D., Ph.D. (2000–2001) Assistant Professor, Johns Hopkins University, Baltimore, Maryland. Now private practice Anesthesiologist
- Feng Tao, M.D., Ph.D. (2000–2014) Associate Professor, Baylor College of Dentistry, Texas.
- Qingning Su, Ph.D. (2003–present) Instructor, Department of Anesthesiology and Critical Care Medicine, Johns Hopkins University School of Medicine
- Ya-Chun Chu, M.D. (2004–2005) Associate Professor, Department of Anesthesiology, Veterans General Hospital, Taipei, Taiwan, ROC
- Kazuyo Yamaji, Ph.D. (2004–2007), Postdoctoral Fellow. (2007-present) Research Associate, Department of Anesthesiology and Critical Care Medicine, Johns Hopkins University School of Medicine
- Yuko Sato, Ph.D. (2004–2008) Research Scientist. Osaka Pharmaceutical Company, Osaka, Japan
- Daniel Angelini, Ph.D. (2005–present) Associate Scientist. Aberdeen Proving Grounds Lung Research Division, U.S. Army Department of Defense
- Chun-Ling Fan, Ph.D. (2005–present) Research Associate, Department of Anesthesiology and Critical Care Medicine, Johns Hopkins University School of Medicine
- Andres Poloczek, M.D. (2008–2010) Postdoctoral Fellow, Johns Hopkins Bloomberg School of Public Health
- Irina Kolosova, Ph.D. (2008–2012) Assistant Professor, University of Maryland, Division of Cardiology
- Orion Furmanski, Ph.D. (2009-present)
- Yun Wang, MD, PhD (2009-2011) Visiting Scientist (Beijing, CN)
- Lucas Meuchel, Ph.D. (2012-2014) Postdoctoral fellow (resident in Anesthesiology University of Oregon)
- Chang Sheng Li, M.D., Ph.D. (2011-present) Visiting Scientist. (Beijing, CN)
- David (Cyrus) Mintz, MD PhD. (2014-2017) Served as primary mentor for K08 award. Now Assistant Professor of Anesthesiology at Johns Hopkins as PI on RO1 and Maryland TEDCO Stem Cell grant.
- Christy Gray MD, PhD. (2016-present), Assistant Professor, Johns Hopkins Department of Anesthesiology

Qing Lin PhD (2017-present) Research Associate, Johns Hopkins Department of Anesthesiology
Jianna Li, PhD (2018-present) Associate Professor, Department of Molecular Biology and
Oncology, Shenzhen University
Michele Shaefer, PhD (2014-present) Research Associates, Johns Hopkins Department of
Anesthesiology.

Anesthesiology Fellows and Residents:

Michael Wills, M.D. (1988) Private practice
Britton Harper, M.D. (1989) Private practice
David Frankville, M.D. (1989) Assistant Professor of Anesthesiology, University of California,
San Diego
Mark Uggeri, M.D. (1991–92) Private practice
Tom Pajewski, M.D., Ph.D. (1990) Associate Professor of Anesthesiology, University of
Virginia
John Brendel, M.D. (1991–1993) Private Practice Wisconsin
Thomas McLoughlin, M.D. (1991–1992) Uniformed Armed Services Medical School and
Walter Reed Hospital
Paul Zelenkov, M.D. (1991–93) Private practice, Clinical Adjunct Professor of Anesthesiology,
University of Colorado
Julio Gonzalez, M.D. (2000–2001) Assistant Professor, P. Universidad Catolica De Chile,
Santiago, Chile
Pedro Mendez, M.D. (2000–2001) Assistant Professor, Department of Anesthesia and Critical
Care Medicine, Johns Hopkins University School of Medicine
William Stotz, M.D. (2000–2003) Attending Physician, INOVA, Fairfax, VA
Adam Carinci, M.D. (2005–present) Resident in Anesthesiology, Johns Hopkins
Steve Gibson, MD, PhD (2010-2011) Instructor in Anesthesiology, Johns Hopkins
Christy Gray, MD, PhD (2013-2014), Resident in Anesthesiology, Johns Hopkins

Faculty:

David J. Stone, M.D. (1988–1989) Professor of Anesthesiology and Neurosurgery
George F. Rich, M.D., Ph.D. (1991–1994) Professor and Chair of Anesthesiology and
BioMedical Engineering University of Virginia
Thomas Pajewski, M.D., Ph.D. (1993–1996) Associate Professor of Anesthesiology, University
of Virginia
Lisa Palmer, Ph.D. (1995–1999) Associate Professor of Anesthesiology and Pediatrics,
University of Virginia
Reda Girgis, M.D. (2001–2006) Assistant Professor of Pulmonary Medicine, Johns Hopkins
University
Klaus Wagner, M.D. (2002–2003) Professor of Anesthesiology, University of Luebeck,
Luebeck, Germany
Blaine Easley, MD, PhD (2008–2009) Assistant Professor, Department of Anesthesiology and
Critical Care Medicine. Johns Hopkins University School of Medicine
Steve Gibson, MD, PhD (2011—2012) Assistant Professor Oklahoma University, Department of
Anesthesiology and Critical Care Medicine.
Wei Dong Gao, MD PhD (2016-present) Associate Professor of Anesthesiology/CCM , Johns
Hopkins University

Christy Gray, MD, PhD (2016-present) Assistant Professor of Anesthesiology/CCM, Johns Hopkins University

David Mintz MD, PhD (2014-present) Assistant Professor of Anesthesiology/CCM, Johns Hopkins University

Delores Njoku MD (2018-present) Associate Professor of Anesthesiology/CCM at Johns Hopkins

CLINICAL CARDIAC ANESTHESIA FELLOWS TRAINED:

Britton Harper, M.D. (1989) Private practice

Donald Raithel, M.D. (1989) Private practice

David Frankville, M.D. (1989) Associate Professor of Anesthesiology, University of California, San Diego

Ryan Lesh, M.D. (1990) Associate Professor of Anesthesiology and Physiology, Columbia University

Cathy Jo Wilson, M.D. (1990) Private practice

Robert Lubanski, M.D. (1990–1991) Private practice

Michael Hahn, M.D. (1990–1991) Private practice

Mark Uggeri, M.D. (1991–1992) Private practice

Thomas McLoughlin, M.D. (1991–1992) Uniformed Armed Services Medical School and Walter Reed Hospital

Steve Roberts, M.D. (1991–1992) Private practice

Elliot Williams, M.D. (1991–1992) Private practice

Paul Zelenkov, M.D. (1992–1993) Private practice, Adjunct Professor of Anesthesiology University of Colorado

Doug Murphy, M.D. (1992–1993) Private practice

Steven Holmes, M.D. (1992–1993) Private practice

Catherine Cooper, M.D. (1993–1994) Associate Professor of Anesthesiology, Medical College of Virginia

Jolanta Kieterakus, M.D. (1993–1994) Private practice

Christian Reikersdorfer, M.D. (1994-1995)

Eric Hansen, M.D. (1997–1998) Private practice

Chip Lanceolatta (1999–2000) Private practice

Steve Aufderheide (2000–2001) Private practice

Al Haddadin (2002–2003) Assistant Professor of Anesthesiology, Yale University

Forty-two additional clinical cardiac anesthesiology fellows at Johns Hopkins (2000-2018)

OTHER RESEARCH EXPERIENCE:

Development of computer analysis and algorithm development of visual evoked potentials in assessment of traumatic brain injury, Holden Electrophysiology Lab, Department of Neurology, Wayne State University School of Medicine, 1978–1980 (Robert L. Maulsby, M.D. and John Gilroy, M.D., supervisors)

Enkephalin receptor assay applied to pain and stress studies, Nancy Pritzker Laboratory, Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, 1976 (Huda Akil, Ph.D. and Jack Barchas, M.D., supervisors)

Circadian rhythms in neurospora, Department of Biological Sciences, Stanford University, 1975–1976 (Dow Woodward, Ph.D., supervisor)

