

DANIEL NYHAN, B.Sc, M.B., M.R.C.P.I., M.D.
**The Johns Hopkins University School of
Medicine**

CURRICULUM VITAE FOR ACADEMIC PROMOTION
The Johns Hopkins University School of Medicine

Daniel Nyhan

Date

DEMOGRAPHIC INFORMATION

Current Appointments

- 1988-Present Member Departmental Residency Recruitment/Interview Committee, Anesthesiology and Critical Care Medicine (ACCM), Johns Hopkins University School of Medicine, Baltimore, MD
- 1991-Present Chief, Cardiac Anesthesia, ACCM, Johns Hopkins University School of Medicine, Baltimore, MD
- 2001-Present Joint Appointment: Associate Professor, Surgery, Johns Hopkins University School of Medicine, Baltimore, MD
- 2002-Present Professor, Cardiac Anesthesia, ACCM, Johns Hopkins University School of Medicine, Baltimore, MD
- 2004-Present Executive Vice Chair, ACCM, Johns Hopkins University School of Medicine, Baltimore, MD
- 2007-Present Chair, ACCM Associate Professor's Faculty Development/Mentoring Committee
- 2007-Present ACCM representative, Clinical Practice Administration
- 2009-Present ACCM representative, Medical School Council / Faculty of Senate
- 2012-Present Fellowship Director, Cardiothoracic Anesthesia, ACCM, Johns Hopkins University School of Medicine

Personal Data

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Education and Training

- 1972-1975 University College Cork/National University of Ireland Pre-Clinical Basic Science
- 1975-1976 B.Sc. (Honors), Physiology, University College Cork/National University of Ireland (Mentors: Professor J. Sheehan and Professor JW Hall)
- 1976-1979 M.B., B.Ch., B.A.O. (Honors Degree) University College Cork/National University of

Ireland

1979-1980 Internship, Internal Medicine, Cork University Hospital

1980-1982 Senior House Officer, Internal Medicine, Cork University Hospital

1982-1985 Resident, Department of Anesthesiology/Critical Care Medicine (ACCM), The Johns Hopkins University School of Medicine, Baltimore, MD

1985-1986 Chief Resident, ACCM, The Johns Hopkins University School of Medicine, Baltimore, MD

1985-1986 Fellow, Division of Cardiac Anesthesia, ACCM, The Johns Hopkins University School of Medicine, Baltimore, MD (Director, Dr. T. Blanck)

1985-1987 Research Fellow, ACCM, The Johns Hopkins University School of Medicine, Baltimore, MD (Mentor: Dr. P.A. Murray)

Professional Experience

1975-1978 Instructor, Physiology, University College Cork/National University of Ireland

1975-1979 Instructor, Life Sciences, Regional College, Cork, Ireland

1986-1987 Instructor, Cardiac Anesthesia, ACCM, The Johns Hopkins University School of Medicine

1987-1991 Assistant Professor, Cardiac Anesthesia, ACCM, Johns Hopkins University School of Medicine

1990-1996 Fellowship Director, Cardiac Anesthesia, ACCM, Johns Hopkins University School of Medicine

1991-2002 Associate Professor, Cardiac Anesthesia, ACCM, Johns Hopkins University School of Medicine

1991-Present Chief, Cardiac Anesthesia, ACCM, Johns Hopkins University School of Medicine

2002-Present Professor, Cardiac Anesthesia, ACCM, The Johns Hopkins University School of Medicine

2008-2010 Fellowship Director, Cardiothoracic Anesthesia, ACCM, Johns Hopkins University School of Medicine

2012-Present Fellowship Director, Cardiothoracic Anesthesia, ACCM, The Johns Hopkins Univ School of Medicine

RESEARCH ACTIVITIES

Peer Reviewed Original Science Publications

1. Hall WJ, **Nyhan D**. Effect of phenylbutazone on salt and water fluxes across guinea-pig ileum. *Ir J Med Sci* 145:300, 1976.
2. **Nyhan D**, Quigley C, Bredin CP. Acute respiratory failure in pregnancy due to staphylococcal pneumonia. *Ir Med J* 76:320-321, 1983.
3. **Nyhan DP**, Geller HS, Goll HM, Murray PA. Pulmonary vasoactive effects of exogenous and endogenous AVP in conscious dogs. *Am J Physiol* 251:H1009-H1016, 1986.
4. Goll HM, **Nyhan DP**, Geller HS, Murray PA. Pulmonary vascular responses to angiotensin II and captopril in conscious dogs. *J Appl Physiol* 61:1552-1559, 1986.
5. **Nyhan DP**, Clougherty PW, Goll HM, Murray PA. Bradykinin actively modulates pulmonary vascular pressure-cardiac index relationships. *J Appl Physiol* 63:145-151, 1987.
6. **Nyhan DP**, Clougherty PW, Murray PA. AVP-induced pulmonary vasodilation during specific V1,

- receptor block in conscious dogs. *Am J Physiol* 253:H493-H499, 1987.
7. Clougherty PW, **Nyhan DP**, Chen BB, Goll HM, Murray PA. Autonomic nervous system pulmonary vasoregulation after hypoperfusion in conscious dogs. *Am J Physiol* 254:H976-H983, 1988.
 8. Geller HS, **Nyhan DP**, Goll HM, Clougherty PW, Chen BB, Murray PA. Combined neurohumoral block modulates pulmonary vascular P/Q relationship in conscious dogs. *Am J Physiol* 255:H1084-H1090, 1988.
 9. Chen BB, **Nyhan DP**, Goll HM, Clougherty PW, Fehr HM, Murray PA. Pentobarbital anesthesia modifies pulmonary vasoregulation after hypoperfusion. *Am J Physiol* 255:H569-H576, 1988.
 10. **Nyhan DP**, Goll HM, Chen BB, Fehr DM, Clougherty PW, Murray PA. Pentobarbital alters pulmonary vascular response to neural antagonists. *Am J Physiol* 256:H1384-H1392, 1989.
 11. Weiss ME, **Nyhan D**, Peng Z, Horrow JC, Lowenstein E, Hirshman C, Adkinson NF, Jr. Association of protamine IgE and IgG antibodies with life-threatening reactions to intravenous problems. *N Engl J Med* 320:886-892, 1989.
 12. **Nyhan D**, Weiss M, Hirshman CA. Immunologic aspects of anesthetic agents. *Anesth Rev* 16:10-18, 1989.
 13. **Nyhan DP**, Chen BB, Fehr DM, Goll HM, Murray PA. Pentobarbital augments pulmonary vasoconstrictor response to cyclooxygenase inhibition. *Am J Physiol* 257:H1140-H1146, 1989.
 14. Dull DL, Eichhorn JH, **Nyhan D**, Orkin FK, Schwid HA. Safety in anesthesia. *Anesthesia Patient Safety Foundation Report* 4:37-48, 1989.
 15. Chen BB, **Nyhan DP**, Fehr DM, Goll HM, Murray PA. Halothane anesthesia causes active flow-independent pulmonary vasoconstriction. *Am J Physiol* 259:H74-H83, 1990.
 16. Rock P, Beattie C, Kimball AW, **Nyhan D**, Chen BB, Fehr DM, Derrer SA, Parker SD, Murray PA. Halothane alters the oxygen consumption-oxygen delivery relationship compared with conscious state. *Anesthesiology* 73:1186-1197, 1990.
 17. Fehr DM, **Nyhan DP**, Chen BB, Murray PA. Pulmonary vasoregulation by cyclooxygenase metabolites and angiotensin II after hypoperfusion in conscious pentobarbital-anesthetized and halothane-anesthetized dogs. *Anesthesiology* 75:257-267, 1991.
 18. Chen BB, **Nyhan DP**, Blanck TJJ. Hemodynamic effects and onset time of increasing doses of vecuronium in patients undergoing myocardial revascularization. *J Cardiothorac Vasc Anesth* 5:569-573, 1991.
 19. **Nyhan DP**, Chen BB, Fehr DM, Rock P, Murray PA. Anesthesia alters pulmonary vasoregulation by angiotensin II and captopril. *J Appl Physiol* 72:636-642, 1992.
 20. **Nyhan D**, Schultheis L. The role of oxygen-carrying capacity in myocardial ischemia. *Int Anesthesiol Clin* 30: 101-113, 1992.
 21. Nishiwaki K, **Nyhan DP**, Rock P, Desai PM, Peterson WP, Pribble CG, Murray PA. N-omega-nitro-L-arginine and the pulmonary vascular pressure-flow relationship in conscious dogs. *Am J Physiol* 262:H1331-H1337, 1992.
 22. Murray PA, Stuart RS, Fraser CD, Jr., Fehr DM, Chen BB, Rock P, Desai PM, **Nyhan DP**. Acute and chronic pulmonary vasoconstriction after left lung autotransplantation in conscious dogs. *J Appl Physiol* 73:603-609, 1992.
 23. Chen BB, **Nyhan DP**, Fehr DM, Murray PA. Halothane anesthesia abolishes pulmonary vascular responses to neural antagonists. *Am J Physiol* 262:H117-H122, 1992.
 24. Murray PA, Fehr DM, Chen BB, Rock P, Esther JW, Desai PM, **Nyhan DP**. Differential effects of general anesthesia on cGMP-mediated pulmonary vasodilation. *J Appl Physiol* 73:721-727, 1992.
 25. Nishiwaki K, **Nyhan DP**, Stuart R, Desai PM, Peterson W, Rock P, Pribble C, Murray P.

- Pulmonary vascular α 1-adrenoreceptor activity in conscious dogs after left lung autotransplantation. *J Appl Physiol* 74:733-741, 1993.
26. Nishiwaki K, **Nyhan DP**, Stuart RS, Rock P, Desai PM, Peterson WP, Murray PA. Abnormal responses to pulmonary vasodilators in conscious dogs after left lung autotransplantation. *Am J Physiol* 264: H917-H925, 1993.
 27. Nishiwaki K, Rock P, Stuart RS, **Nyhan DP**, Peterson WP, Murray PA. Pulmonary vascular β -adrenoreceptor activity in conscious dogs after left lung autotransplantation. *J Appl Physiol* 75:256-263, 1993.
 28. **Nyhan DP**, Pribble CG, Peterson WP, Nishiwaki K, Trempey GA, Desai PM, Rock P, Murray PA. Amrinone and the pulmonary vascular pressure-flow relationship in conscious control dogs and following left lung autotransplantation. *Anesthesiology* 78:1166-1174, 1993.
 29. Peterson WP, Trempey GA, Nishiwaki K, **Nyhan DP**, Murray PA. Neurohumoral regulation of the pulmonary circulation during circulatory hypotension in conscious dogs. *J Appl Physiol* 75:1675-1682, 1993.
 30. Desai PM, Nishiwaki K, Stuart RS, **Nyhan DP**, Murray PA. Humoral pulmonary vasoregulation in conscious dogs after left lung autotransplantation. *J Appl Physiol* 76:902-908, 1994.
 31. Trempey GA, **Nyhan DP**, Murray PA. Pulmonary vasoregulation by arginine vasopressin in conscious, halothane-anesthetized and pentobarbital-anesthetized dogs with increased vasomotor tone. *Anesthesiology* 81:632-640, 1994.
 32. **Nyhan DP**, Redmond JM, Gillinov AM, Nishiwaki K, Murray PA. Prolonged pulmonary vascular hyperreactivity in conscious dogs after cardiopulmonary bypass. *J Appl Physiol* 77:1584-1590, 1994.
 33. **Nyhan D**. Invited Review: Estafnous FG, Barash PG, Reves JG. Cardiac anesthesia. *Anesthesiology* 80:1184-1186, 1994.
 34. Rock P, Freed AN, **Nyhan DP**, Murray PA. Thoractomy increases peripheral airway tone and reactivity. *Am J Respir Crit Care Med* 151:1047-1052, 1995.
 35. **Nyhan DP**, Champagne EL, Hirschman CA, Hamilton RG, Frank SM, Baumgartner WA, Adkinson NF, Jr. Single doses of intravenous protamine result in the formation of protamine-specific IgE and IgG antibodies. *J Allergy Clin Immunol* 97:991-997, 1996.
 36. Zanaboni P, Murray PA, Simon BA, Zehr K, Fleischer K, Tseng E, **Nyhan DP**. Selective endothelial dysfunction in conscious dogs after cardiopulmonary bypass. *J Appl Physiol* 82:1776-1784, 1997.
 37. Simon BA, Zanaboni PB, **Nyhan DP**. Effect of hypoxia on respiratory system impedance in dogs. *J Appl Physiol* 83:451-458, 1997.
 38. Andreoni KA, Kazui M, Cameron DE, **Nyhan D**, Sehnert SS, Rohde CA, Bulkley GB, Risby TH. Ethane: a marker of lipid peroxidation during cardiopulmonary bypass in humans. *Free Radic Biol Med* 26:439-445, 1999.
 39. **Nyhan D**, Gaine S, Hales, M, Zanaboni P, Simon B, Berkowitz D, Flavahan N. Pulmonary vascular endothelial responses are differentially modulated after cardiopulmonary bypass. *J Cardiovasc Pharmacol* 34:518-525, 1999.
 40. Winters B, Mo X, Brooks-Asplund E, Kim SY, Shoukas A, **Nyhan D**, Berkowitz DE. Reduction of obesity, as induced by leptin, reverses endothelial dysfunction in leptin deficient obese (*lep/ob*) mice. *J Appl Physiol* 89:2382-2390, 2000.
 41. Marcucci C, **Nyhan D**, Simon BA. Distribution of pulmonary ventilation using Xe-enhanced computed tomography in prone and supine dogs. *J Appl Physiol* 90:421-430, 2001.
 42. **Nyhan D**, Kim S, Dunbar S, Li D, Shoukas A, Berkowitz D. Impaired contractile response in the

- pulmonary artery in a rat model of microgravity: role of nitric oxide. *J Appl Physiol* 92:33-40, 2002.
43. Haddadin AS, **Nyhan D**. Physiology of pulmonary circulation and its relevance to the cardiac anaesthetist. *Ann Card Anaesth* 5:209-219, 2002.
 44. Berkowitz DE, White R, Li D, Minhas K, Cernetich A, Kim S, Burke S, Shoukas AA, **Nyhan D**, Champion HC, Hare JM. Arginase reciprocally regulates nitric oxide synthase activity and contributes to endothelial dysfunction in aging blood vessels. *Circulation* 108:2000-2006, 2003.
 45. Jhaveri R, Kim SY, White AR, Burke S, Berkowitz DE, **Nyhan D**. Enhanced vasodilatory responses to milrinone in catecholamine precontracted small pulmonary arteries. *Anesth Analg* 98:1618-1622, 2004.
 46. Townsend SA, Jung AS, Hoe YS, Lefkowitz RY, Khan SA, Lemmon CA, Harrison RW, Lee K, Barouch LA, Cotecchia S, Shoukas AA, **Nyhan D**, Hare JM, Berkowitz DE. Critical role for the alpha-1B adrenergic receptor at the sympathetic neuroeffector junction. *Hypertension* 44:776-782, 2004.
 47. Jung AS, Harrison R, Lee KH, Ganut J, **Nyhan D**, Brooks-Asplund EM, Hare JM, Shoukas AA, Berkowitz DE. Simulated microgravity produces attenuated baroreflex-mediated pressor, chronotropic, and inotropic responses in mice. *Am J Physiol Heart Circ Physiol* 289:H600-H607, 2005.
 48. White AR, Ryoo SW, Li D, Champion HC, Steppan J, Wang D, **Nyhan D**, Shoukas AA, Hare JM, Berkowitz DE. Knockdown of arginase 1 restores NO signaling in the vasculature of old rats. *Hypertension* 47:245-251, 2006.
 49. Gao WD, Da T, **Nyhan D**. Increased cross-bridge cycling rate in stunned myocardium. *Am J Physiol Heart Circ Physiol* 290:H866-H893, 2006.
 50. Steppan J, Ryoo S, Schuleri KH, Gregg C, Hasan RK, White AR, Bugaj LJ, Khan M, Santhanam L, **Nyhan D**, Shoukas A, Hare J, Berkowitz DE. Arginase modulates myocardial contractility by a nitric oxide synthase-1 dependent mechanism. *Proc Natl Acad Sci USA* 103:4759-4764, 2006.
 51. Ryoo S, Lemmon C, Soucy KG, Gupta G, White AR, **Nyhan D**, Shoukas A, Romer LH, Berkowitz DE. Oxidized low-density lipoprotein-dependent endothelial arginase Hi activation contributes to impaired nitric oxide signaling. *Circ Res* 99: 951-960, 2006.
 52. Soucy KG, Ryoo S, Benjo A, Lim HK, Gupta G, Sohi JS, Elser J, Aon MA, **Nyhan D**, Shoukas AA, Berkowitz DE. Impaired shear stress-induced nitric oxide production through decreased NOS phosphorylation contributes to age-related vascular stiffness. *J Appl Physiol* 101:1751-1759, 2006.
 53. Benjo A, Thompson RE, Fine D, Hogue CW, Alejo D, Kaw A, Gerstenblith G, Shah A, Berkowitz DE, **Nyhan D**. Pulse pressure is an age-independent predictor of stroke development after cardiac surgery. *Hypertension* 50(4):630-635, 2007.
 54. Taday EC, Meck JV, Nyhan D, Shoukas AA, Berkowitz DE. Microgravity-induced changes in aortic stiffness and their role in orthostatic tolerance. *J Appl Physiol* 102:853-858, 2007. Associated Editorial published *J Appl Physiol* 103:1-2, 2007.
 55. Santhanam L, Lim HK, Lim HK, Miriel V, Brown T, Patel M, Balanson S, Ryoo S, Anderson M, Irani K, Khanday F, Di Costanzo L, **Nyhan D**, Hare JM, Christianson D, Rivers R, Shoukas A, Berkowitz DE. Inducible NO synthase-dependent S-nitrosylation and activation of arginase1 contribute to age-related endothelial dysfunction. *Circ Res* 2007;101:692-702, 2007. Associated Editorial: Katusic Z, Mechanisms of endothelial dysfunction induced by aging: Role of arginase I, *Circ Res* 101:640-641, 2007.
 56. Lim HK, Ryoo S, Benjo A, Shuleri K, Miriel V, Baraban E, Camara A, Soucy K, **Nyhan D**, Shoukas A, Berkowitz DE. Mitochondrial arginase II constrains endothelial NOS-3 activity. *Am J Physiol*

- Heart Circ Physiol* 293:H3317-H3324, 2007.
57. Tuday EC, **Nyhan D**, Shoukas AA, Berkowitz DE. Microgravity induced changes in aortic stiffness and its role in orthostatic intolerance, *J Appl Physiol* 102:853-858, 2007.
 58. Ryoo S, Gupta G, Benjo A, Lim HK, Camara A, Sikka G, Lim HK, Sohi J, Santhanam L, Soucy K, Tuday E, Baraban E, Hies M, Gerstenblith G, **Nyhan D**, Shoukas A, Christianson DW, Alp NJ, Champion HC, Huso D, Berkowitz DE. Endothelial arginase II: A novel target for the treatment of atherosclerosis. *Circ Res* 102:923-943, 2008.
 59. **Nyhan D**, Berkowitz DE. Perioperative blood pressure management: Does central vascular stiffness matter? *Anesth Analg* 107(4):1103-1106, 2008.
 60. Santhanam L, Christianson DW, **Nyhan D**, Berkowitz DE. Arginase and vascular aging. *J Appl Physiol* 105(5):1632-42, 2008.
 61. Tuday EC, **Nyhan D**, Shoukas AA, Berkowitz DE. Simulated microgravity-induced aortic remodeling. *J Appl Physiol* 106(6):2002-8, 2009.
 62. Kim JH, Bugaj LJ, Oh YJ, Bivalacqua TJ, Ryoo S, Soucy KG, Santhanam L, Webb A, Camara A, Sikka G, **Nyhan D**, Shoukas AA, Ilies M, Christianson DW, Champion HC, Berkowitz DE. Arginase inhibition restores NOS coupling and reverses endothelial dysfunction and vascular stiffness in old rats. *J Appl Physiol* 107(4):1249-57, 2009.
 63. Soucy KG, Lim HK, Attarzadeh DO, Santhanam L, Kim JH, Bhunia AK, Sevinc B, Ryoo S, Vazquez ME, **Nyhan D**, Shoukas AA, Berkowitz DE. Dietary inhibition of xanthine oxidase attenuates radiation-induced endothelial dysfunction in rat aorta. *J Appl Physiol* 108(5):1250-8, 2010.
 64. Santhanam L, Tuday EC, Webb AK, Dowzicky P, Kim JH, Oh YJ, Sikka G, Kuo M, Halushka MK, Macgregor AM, Dunn J, Gutbrod S, Yin D, Shoukas A, **Nyhan D**, Flavahan NA, Belkin AM, Berkowitz DE. Decreased S-nitrosylation of tissue transglutaminase contributes to age-related increases in vascular stiffness. *Circ Res* 107(1):117-25, 2010.
 65. Gregg CJ, Steppan J, Gonzalez DR, Champion HC, Phan AC, **Nyhan D**, Shoukas AA, Hare JM, Barouch LA, Berkowitz DE. β 2-Adrenergic receptor-coupled phosphoinositide 3-kinase constrains cAMP-dependent increases in cardiac inotropy through phosphodiesterase 4 activation. *Anesth Analg* 111:870-877, 2010.
 66. White AR, Ryoo S, Bugaj L, Attarzadeh DO, Thiyagarajan S, Chen K, Attwater S, Abbot B, Li D, Champion HC, Shoukas AA, **Nyhan D**, Hare JM, Berkowitz DE, Tuday EC. Early changes in vasoreactivity after simulated microgravity are due to an upregulation of the endothelium-dependent nitric oxide/cGMP pathway. *Eur J Appl Physiol* 110:395-404, 2010.
 67. Barodka VM, Joshi BL, Berkowitz DE, Hogue CW, Jr, **Nyhan D**. Review article: implications of vascular aging. *Anesth Analg* 112:1048-60, 2011.
 68. Steppan J, Barodka V, Berkowitz DE, **Nyhan D**. Vascular stiffness and increased pulse pressure in the aging cardiovascular system. *Cardiol Res Pract* 2011;2011:263585.
 69. Tuday E, Platts S, Nyhan D, Shoukas AA, Berkowitz DE. A retrospective analysis on gender differences in the arterial stiffness response to microgravity exposure. *Gravitational and Space Biology* 25:51-53, 2011.
 70. Khan M, Steppan J, Schuleri KH, Ryoo S, Tuday E, Bugaj L, Santhanam L, Berkowitz T, **Nyhan D**, Shoukas AA, Berkowitz DE. Upregulation of arginase-II contributes to decreased age-related myocardial contractile reserve. *Eur J Appl Physiol* 112:2933-2941, 2012.
 71. Barodka V, **Nyhan D**, Berkowitz D. About fACE: Perioperative use of angiotensin-converting enzyme inhibitors. *Circulation* 126:249-251, 2012.
 72. Khan M, Steppan J, Schuleri KH, Ryoo S, Tuday E, Bugaj L, Santhanam L, Berkowitz T, **Nyhan D**, Shoukas AA, Berkowitz DE. Erratum to: Upregulation of arginase-II contributes to decreased

age-related myocardial contractile reserve. *Eur J Appl Physiol.* 112:4189, 2012.

73. Jandu SK, Webb AK, Pak A, Sevinc B, **Nyhan D**, Belkin AM, Flavahan NA, Berkowitz DE, Santhanam L. Nitric oxide regulates tissue transglutaminase localization and function in the vasculature. *Amino Acids* 44:261-269, 2013.

Extramural Sponsorship

Current

09/20/2010-6/30/2014 R01HL105296 PI (Berkowitz) NIH/NHLBI

Transglutaminase 2 S-Nitrosylation: Role in Age-Related Vascular Stiffness

The goal of this project is to study an enzyme we have identified that creates “bridges” or “scaffolds” between other proteins in the vessel wall contributing to its stiffening, and plan to study its mechanism of regulation.

Percent effort: 0.5 calendar

Previous

- 2008-2012 NCC9582 National Space Biomedical Research Institute
Radiation, Endothelial Cell Senescence, Accelerated Aging, and Atherosclerosis
PI: Artin Shoukas
- 2006-2011 R01 AG17479 NIH/NIA
Aging, Fitness, & Failure: Mechanisms of Diastolic Dysfunction
PI: Levine
- 2005-2009 National Aeronautics and Space Administration
Ionizing Radiation and its Effects on Cardiovascular Function in the Context of Space Flight. PI: Dan E. Berkowitz Co-I: Daniel Nyhan
- 2004-2008 National Space Biomedical Research Institute
Mechanics of Cardiovascular Deconditioning. PI: Artin Shoukas, Co-I: Daniel Nyhan
- 2003-2008 National Institutes of Health
Arginase and the Aging Cardiovascular System. PI: Dan Berkowitz, Co-I Daniel Nyhan
- 2001 Women's Board of the Johns Hopkins Hospital
Effects of ATP-Sensitive Potassium Channel Activation Inhibition with Diazoxide on the Complications of Cardiac Surgery and Cardiopulmonary Bypass. PI: Daniel Nyhan
- 2001 Department of Anesthesiology/Critical Care Medicine
Effects of ATP-Sensitive Potassium Channel Activation Inhibition with Diazoxide on the Complications of Cardiac Surgery and Cardiopulmonary Bypass. PI: Daniel Nyhan
- 1989-1991 The Johns Hopkins Medical Institutions Career Development Award (CDA)
Pulmonary Vascular Effects of Cardiopulmonary Bypass. PI: Daniel Nyhan
- 1990-1991 Organon Pharmaceuticals
Hemodynamic and Pharmacodynamic Effects of High Dose Vecuronium in Patients Undergoing Myocardial Revascularization. PI: Daniel Nyhan
- 1990-1991 The Johns Hopkins Medical Institution Institutional Research Project Grant
Pulmonary Vascular Effects of Cardiopulmonary Bypass. PI: Daniel Nyhan
- 1990-1992 Winthrop Pharmaceuticals
Pulmonary Vascular Effects of Amiodarone. PI: Daniel Nyhan

- 1990-1995 NIH Clinical Investigator Award (CIA)
A Pulmonary Vascular Effects of Cardiopulmonary Bypass. PI: Daniel Nyhan
- 1996-1999 American Heart Association - Maryland Affiliate
Pulmonary Vascular Effects of Cardiopulmonary Bypass. PI: Daniel Nyhan

EDUCATIONAL ACTIVITIES

Book Chapters

1. **Nyhan D**, Rogers MC, Zitzman W. Cardiopulmonary resuscitation. In: *Emergency Anesthesia*. Adams AP, Hewitt PB, Rogers MC, eds. Edward Arnold, London, 1986.
2. **Nyhan D**. Anesthesia management of patients with a cyanotic congenital heart disease requiring cardiac surgery. In: *Current Practice in Anesthesiology*. Rogers MC, ed. B.C. Decker, Philadelphia, 1988.
3. **Nyhan D**. Anesthesia for patients undergoing repair of transposition of the great vessels. In: *Current Practice in Anesthesiology*. 2nd Edition. Rogers MC, ed. B.C. Decker, Philadelphia, pp 125-130,1990.
4. Blank TJJ, **Nyhan D**. Cardiac and heart-lung transplantation. In: *Cardiac Anesthesia*. Kaplan JA, ed. Grune and Stratton, New York; pp 905-916,1993.
5. Heitmiller ES, Yaster M, **Nyhan D**. Anesthetic management of the pediatric cardiac surgical patient. In: *Critical Heart Disease in Infants and Children*. 2nd edition. Nichols DG, Cameron DE, eds. Mosby-Year Book, St. Louis; pp 275-318,1995.
6. Heitmiller ES, **Nyhan D**. Perioperative monitoring. In: *Critical Heart Disease in Infants and Children*. 2nd edition. Nichols DG, Cameron DE, eds. Mosby, St. Louis; pp 457-496,1995.
7. Traystman RJ, **Nyhan D**. Neurologic disorders in heart disease. In: *The Critically Ill Cardiac Patient: Multisystem Dysfunction and Management*. Kvetan V, Dantzer D, eds. Lippincott-Raven, Philadelphia; pp 127-133,1996.
8. **Nyhan D**. Single (including common) ventricle. In: *Essence of Anesthesia Practice*. Roizen MF, Fleisher LA, eds. WB Saunders, Philadelphia; p 294, 1997.
9. Dodd-o J, **Nyhan D**. Cardiac surgery intensive care. In: *ICU Care, House Officer Series*. Helfaer M, ed. Williams & Wilkins, Baltimore, MD; pp 177-194, 1998.
10. **Nyhan D**, Blanck T. Cardiac physiology. In: *Basic and Applied Science for Anesthesia*. Hemmings HC, Jr., Hopkins PM, eds. CV Mosby, London; Chapter 34, pp 361-370, 2000.
11. **Nyhan D**, Hastings L. Single (including common) ventricle. In: *Essence of Anesthesia Practice*. Roizen MF, Fleisher LA, eds. WB Saunders, Philadelphia; page 305, 2001.
12. Martinez E, **Nyhan D**. Anesthetic management of heart and lung transplants. In: *Heart and Lung Transplantation, 2nd Edition*. Baumgartner WA, Kasper EK, Theodore J, Reitz BA, eds. WB Saunders, Philadelphia, 2001.
13. Martin L, **Nyhan D**. Wetzel RC. Regulation of pulmonary vascular tone and blood flow. In: *Critical Heart Disease in Infants and Children, 3rd edition*. Nichols DG, Cameron DE, eds. Elsevier, Philadelphia, Chapter 17, 2004.
14. **Nyhan D**. Physiology of ventilation-perfusion matching. In: *Seminars in Anesthesia, Perioperative Medicine and Pain*. Ward DS, Campos JH, eds. 21:155-167, 2002.
15. **Nyhan D**, Johns RA. Management of patients undergoing cardiac surgery procedures. In: *Anesthesia, 8th Edition*. Miller RD, Fleisher L, Johns R, Savarese J, Weiner-Kronish J, Young W, eds. Churchill Livingstone, Philadelphia, 2004.

16. Parr G, **Nyhan D**. Cardiac anesthesia. In: *Current Therapy in Thoracic and Cardiovascular Surgery*. Yang SC, Cameron DE, eds. Mosby, Philadelphia; pp 481-488, 2004.
17. Hastings L, Heitmiller ES, **Nyhan D**. Perioperative monitoring. In: *Critical Heart Disease in Infants and Children*, 2nd edition. Nichols DG, Cameron DE, eds. Elsevier, Philadelphia. Chapter 19, 2005.
18. Grogan K, **Nyhan D**, Berkowitz DE. Pharmacology of anesthetic drugs. In: *Cardiac Anesthesia*, 5th edition. Kaplan JA, Reich D, Konstade S, Lake C, eds. Elsevier/Saunders, New York; Chap 9, pp 165-212, 2006.
19. **Nyhan D**, BlanckTJJ. Cardiac physiology. IN: *Mechanisms of Anesthetic Action*, 2nd Edition. IN: *Basic and Applied Science for Anesthesia*. Hemmings HC, Jr., Hopkins PM, eds. CV Mosby, London; Chapter 39.
20. Steppan J, Berkowitz DE, Martinez E, **Nyhan D**. Diastolic heart function and the elderly. In: *Aging and Anesthesia*. Sieber F, ed. McGraw-Hill, Philadelphia; Chapter 16, 2006.
21. Simmonds P, **Nyhan D**, Berkowitz DE. Cardiovascular pharmacological agents. In: *The Johns Hopkins Manual of Cardiac Surgical Care*, 2nd edition. Conte JV, Baumgartner WA, Owens SG, Dorman T, eds. Elsevier, Philadelphia, PA; Chapter 2, 2008.
22. Dorman T, **Nyhan D**. Postoperative hemodynamic management. In: *The Johns Hopkins Manual of Cardiac Surgical Care*, 2nd edition. Conte JV, Baumgartner WA, Owens SG, Dorman T, eds. Elsevier, Philadelphia, PA; Chapter 9, 2008.
23. Grogan K, **Nyhan D**, Berkowitz D. Pharmacology of anesthetic drugs. In: *Cardiac Anesthesia*, 5th edition. Kaplan JA, Reich D, Konstade S, Lake C, eds. Elsevier/Saunders, New York; Chapter 7, 2008.
23. Mitter N, **Nyhan D**, Berkowitz D. Pharmacology of anesthetic drugs. In: *Cardiac Anesthesia*, 6th edition. Kaplan JA, Reich D, Konstade S, Lake C, eds. Elsevier/Saunders, New York. Chapter 7, 2009.
24. Hensley N, **Nyhan D**, Berkowitz D. Pharmacology of anesthetic drugs. In: *Cardiac Anesthesia*, 7th edition. Kaplan JA, Reich D, Konstade S, Lake C, eds. Elsevier/Saunders, New York. Chapter 7, 2012.

Books/Monographs

1. **Nyhan D**. Guest Editor: Perioperative Care of the Cardiopulmonary-Compromised Patient. In *Problems in Anesthesia*. Lippincott-Raven. August, 2001.

Selected Abstracts

1. **Nyhan D**, Redmond JM, Gillinov AM, Nishiwaki K, Murray PA. Pulmonary vasoconstriction is transient but vascular reactivity is increased in conscious dogs following closed-chest hypothermic cardiopulmonary bypass. *Circulation* 86:1-605,1992.
2. Riper DV, Harrow J, LaDuca F, **Nyhan D**. An in vitro test to predict heparin response. *Anesth Analg* 74:331, 1992.
3. **Nyhan D**, Zehr K, Nishiwaki K, Murray PA. Endothelium-dependent and -independent pulmonary vasodilation in conscious dogs before and after closed-chest, hypothermic cardiopulmonary bypass. *Am Rev Resp Dis* 147:A227,1993.
4. Rock P, Freed AN, **Nyhan D**, Murray PA. Left thoracotomy selectively increases peripheral left lung airway tone and reactivity. *Am Rev Resp Dis* 147:A259,1993.
5. Trempy GA, Lennon PF, Peterson WP, **Nyhan D**, Murray PA. Halothane anesthesia reverses the pulmonary vascular response to arginine vasopressin following pre-constriction with U46619.

FASEB 7:A542,1993.

6. Trempy GA, Lennon PF, Peterson WP, **Nyhan D**, Murray PA. Halothane and pentobarbital anesthesia alter the pulmonary vascular response to arginine vasopressin compared to that measured in conscious dogs. 15th Ann Mtg Soc Cardiovas Anesth, pg 360,1993.
7. Wallace LK, **Nyhan D**, Stuart RS, Murray PA. Hypoxic pulmonary vasoconstriction is not altered in conscious dogs following left lung autotransplantation. ALA/ATS Mtg, Boston, 1994.
8. Simon BA, **Nyhan D**, Rock P, Murray PA. Hypocapnic pneumonconstriction in response to pulmonary artery occlusion (PAO) is preserved after left lung autotransplantation (LLA). FASEB, 1994.
9. Simon BA, Zanaboni PB, **Nyhan D**. Absence of lung impedance response to unilateral hypoxic ventilation in intact dogs. 9th Internatl Symp Hypoxia Mountain Med, Artie Inst N Am/Univ Sydney, 1995.
10. Simon BA, Zanaboni PB, **Nyhan D**. Absence of lung impedance response to unilateral hypoxic ventilation in intact dogs. 9th Internatl Symp Hypoxia & Mountain Med (Hypoxia '95).
11. Zanaboni P, Murray PA, Fleisher K, Tseng E, **Nyhan D**. Attenuated pulmonary vascular response to acetylcholine in conscious dogs after cardiopulmonary bypass. FASEB, Washington, DC, 1996.
12. **Nyhan D**, Gaine SP, Hales MA, Zanaboni PA, Simon BA. Pulmonary vascular endothelial responses are altered following cardiopulmonary bypass. ASA, San Diego, CA, 1997.
13. **Nyhan D**, Gaine S, Hales MA, Zanaboni P, Simon BA, Berkowitz, D, Flavahan NA. Selective pulmonary endothelial dysfunction following cardiopulmonary bypass (CPB) in dogs. Amer Thor Soc Internatl Conf, San Francisco, CA, A823, p 349,1997.
14. Berkowitz DE, Brooks-Asplund E, Mo Z, Winters B, **Nyhan D**, Shoukas A. Impaired mesenteric microvascular reactivity and reversibility in rat model of microgravity. Circulation 100:1-134, A694,1999.
15. Gruber PJ, Walinsky PL, Peck EA, Zhang S, Kambouris NG, Tomaselli GF, **Nyhan D**, Baumgartner WA, Balsler JR. Altered ion channel expression following cardiopulmonary bypass. Circulation 100:1-270, A1406, 1999.
16. Berkowitz DE, Winters B, Mo Z, Brooks-Asplund E, Shoukas A, **Nyhan D**. Abnormal vasodilator responses in leptin deficient ob/ob mice. Circulation 100:1-834, A4403,1999.
17. Kim SY, Berkowitz DE, Jhaveri R, Shoukas A, **Nyhan D**. Differential influence of pulmonary vasoconstrictors on milrinone induced vasorelaxation. Anesth Analg 90(4S):SCA88, 2000.
18. Berkowitz DE, Kim S, Brooks-Asplund E, **Nyhan D**, Shoukas A. Myosin light chain phosphatase (Mic-P): a target for enhancing vascular contractile responses in cardiovascular deconditioning. Circulation 102:11349, A1716, 2000.
19. Kim S, Berkowitz, DE, Dunbar S, Shoukas A, **Nyhan D**. Impaired contractile responses in pulmonary artery in a rat model of microgravity: role of nitric oxide. Circulation 102:11236, A1150, 2000.
20. Jiang P, Berkowitz D, Frank S, Lima J, **Nyhan D**, Jhaveri R. Left ventricular wall thickness after cardiopulmonary bypass. SCA Abstract #116, Vancouver, BC, Canada; 2001.
21. **Nyhan D**, Kim S, Berkowitz DE, Shoukas A, Hare J. L-arginine and free radical scavengers attenuate NO-dependent vasodilator function in aging rat vasculature. SCA Abstract #130, Vancouver, BC, Canada; 2001.
22. Gruber PJ, Sprecher BS, Doty JR, Salazar JD, **Nyhan D**, Conte JV, Baumgartner WA, Misesk DE, Puravs E, Krause M, Hanash S, Balsler JR, Gruber SB. Comprehensive proteomic and genomic expression analysis of cardiopulmonary bypass. 3rd World Congress of Pediatric Cardiology and

- Cardiac Surgery, Toronto, ON, Canada; 2001.
23. Jung A, Harrison R, **Nyhan D**, Cottechia S, Shoukas AA, Hare J, Berkowitz DE. Attenuated arterial pressure and contractility responses in alpha 1 B-adrenergic receptor KO mice. 73th Scientific Session, AHA, Anaheim, CA; 2001. Abs #111203.
 24. Kim S, **Nyhan D**, Hare J, Shoukas A, Berkowitz DE. Endothelial dependent and independent vascular adaptive changes to zero gravity: lessons from a rodent model. 73th Scientific Session, AHA, Anaheim, CA; 2001.
 25. Lemmon C, Townsend S, **Nyhan D**, Shoukas AA, Berkowitz D. The role of alpha-1 adrenergic receptor subtypes in electrically-stimulated vs exogenous norepinephrine-induced microvessel vasoconstriction. 74th AHA, Chicago, IL; 2002.
 26. Berkowitz DE, White R, Li D, Champion H, Kim S, Burke S, Shoukas A, **Nyhan D**, Hare J. Upregulation of arginase mediates endothelial dysfunction in aging blood vessels. 74th, AHA, Chicago, IL; 2002.
 27. Berkowitz DE, White R, Li D, Champion H, Kim S, Burke S, Shoukas A, **Nyhan D**, Hare J. Vasopressin mediated potentiation of adrenergic vasoconstriction in the rat mesentery. SCA. Miami Beach, FL; 2003. (Abstract #125)
 28. White AR, Berkowitz DE, Li D, Champion H, Kim S, Burke S, Shoukas A, **Nyhan D**, Hare J. Upregulation of arginase mediates endothelial dysfunction in aging blood vessels. SCA. Miami Beach, FL; 2003. (Abstract 1130MP-171)
 29. Berkowitz DE, Shoukas A, **Nyhan D**, Hare JM. Critical role for alpha-1 B-adrenergic receptor at the sympathetic neuroeffector junction. ASA, San Francisco, CA; 2003 (Poster).
 30. White AR, Anderson J, Jeon BH, Aon M, Shoukas AA, **Nyhan D**, Hare JM, Berkowitz DE. Arginase inhibition reduces reactive oxygen species production in old rat blood vessels. AUA. Sacramento, CO, 2004 (Poster).
 31. Borowicz LM, Grega MA, Bailey MM, Weller J, Martinez E, Seines QA, McKhann GM, **Nyhan D**. The use of diazoxide in cognitive outcomes following CABG. National Jewish 6th Annual Exploring Outcomes Conference, "Leading the Way in Disease Management". Boulder, CO. 2004.
 32. Gregg C, Phan A, Barouch L, **Nyhan D**, Shoukas A, Hare, JM, Berkowitz DE. Beta₂ AR-coupled P13 kinase constrains cAMP/PKA dependent increases in cardiac inotropy through cAMP dependent PDE activation. 52nd AUA, Baltimore, MD; 2005. (Poster presentation).
 33. Stepan J, Ryoo S, Gregg C, White AR, Bugaj LJ, Khan M, Santham L, **Nyhan D**, Shoukas AA, Hare JM, Berkowitz DE. Arginase modulates myocardial contractility by a NOS-1 dependent mechanism. 75th AHA; Dallas, TX; 2005.
 34. Ryoo S, Lemmon C, White R, **Nyhan D**, Shoukas A, Romer LH, Berkowitz DE. Ox-LDL-dependent arginase activation contributes to impaired NO signaling and endothelial dysfunction. 75th AHA; Dallas, TX; 2005.
 35. Benjo AM, Ryoo S, White AR, Lim H, Pellakuru L, Anderson M, **Nyhan D**, Berkowitz DE. Arginase inhibition attenuates vascular stiffness in aged rats. World Congress of Cardiology 2006.
 36. Benjo AM, Tran H, Pellakuru L, Lussman C, Gupta G, White AR, Daher JPL, Gerstenblith G, **Nyhan D**, Levine BD, Shoukas AA, Berkowitz DE. Effect of ALT-711 and exercise on age-related myocardial dysfunction and ventricular-vascular coupling. 76th AHA; Chicago, IL; 2006.
 37. Benjo AM, Berkowitz DE, Gerstenblith G, Fine D, Thompson R, **Nyhan D**. Influence of pulse pressure on adverse events following cardiac surgery. 76th AHA; Chicago, IL; 2006.
 38. Benjo AM, White AR, Ryoo S, Lim H, Gupta G, Anderson M, Pellakuru L, Shoukas A, Gerstenblith G, **Nyhan D**, Berkowitz DE. Vascular stiffness is attenuated by arginase inhibition in aged rats. American College of Cardiology, New Orleans, LA; 2007.

39. Benjo AM, Tran H, White AR, Pellakuru L, Gupta G, Santhanam L, Daher JPL, Lussman C, **Nyhan D**, Gerstenblith G, Shoukas A, Levine B, Berkowitz DE. Sumative effect of ALT-711 and exercise in improving age-related arterial stiffness, myocardial dysfunction and ventricular-vascular (W) coupling. American College of Cardiology, New Orleans, LA; 2007.
40. Lim H, Lim J, Ryoo S, Shuleri K, Benjo A, Soucy K, **Nyhan D**, Shoukas A. Mitochondrial arginase II constrains/regulates endothelial NOS activity. Amer Heart Assoc, Orlando, FL; 2007.
41. Santhanam L, Berkowitz DE, Tuday E, Steppan J, Nyhan D. The Role of Transglutaminase-2 in Vascular Stiffness. SENS 5, Queens College, Cambridge, UK, September 2, 2011.

Teaching

- | | |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1988-Present | School of Perfusion, lecturer for basic science curriculum, The Johns Hopkins Medical Institutions |
| 1988-Present | Physiology Course Lecturer for Medical Students, The Johns Hopkins Medical Institutions |
| 1988-Present | Multiple Departmental and Cardiac Subspecialty Lectures each year within ACCM and its subspecialty teaching programs, The Johns Hopkins Medical Institutions |
| 1986-1996 | Faculty for Department and Office of Continuing Education: "Hemodynamic Monitoring" course and "Airway Management" course |
| Ongoing | Residents/Fellows: Grand Rounds/Conferences/Journal Clubs/Lecturer |
| Ongoing | Medical Student Lectures |

Mentoring

- | | |
|-----------|----------------------------------------------------------------------------------------------|
| 1990-1992 | William Peterson, MD |
| 1991-1993 | Gregory Trempy, MD; Eric Shampaine, MD; Maureen Del Re, MD; Glenn Gilmore, MD |
| 1992-1993 | Harry Greenspun, MD; Marvin Appel, MD; Vivian Hou, MD |
| 1992-1994 | Christopher McQuitty, MD; Lee Wallace, MD; Ronald Bank, MD |
| 1994-1995 | Jeffrey Balser, MD |
| 1996-1998 | Wendy Bernstein, MD; MaryBeth Brady |
| 1997-1998 | Mary Louise Roper, MD; Ahmad Chaudhry, MD |
| 1998-2000 | Mary Wheeler, MD |
| 1999-2000 | Peter Jiang, MD; Charles Lancelotta, MD |
| 2000-2001 | Gary Kaneshige, MD |
| 2000-2001 | Stephen Aufderheide, MD; Chistos Kountentis, MD |
| 2001-2002 | Rojack Tan, MD; Wei Dong Gao, MD; Mike Faulkner, MD (ICU & Cardiac) |
| 2001-2003 | Ala Haddadin, MD (ICU & Cardiac) |
| 2002-2003 | Edward Verde, MD (ICU & Cardiac); James Weller, MD |
| 2003-2004 | Kelly Grogan, MD; Matthew Caldwell, MD; Izumi Harukuni, MD |
| 2004-2005 | Prasert Sawasdiwpachai, MD (ICU & Cardiac) |
| 2005-2006 | Muhammad Durrani, MD; Paul Simmonds, MD |
| 2006-2007 | Nicholas Mantel, MD; Jay Levine, MD; Brenda MacKnight, MD; James DeMeester, MD |
| 2007-2008 | Roy Kan, MD; Michelle Isac, MD; Ana Fernandez, MD |
| 2008-2009 | Mohammed Ojodu, MD; Vischaslau Barodka, MD; Leo Hsiao, MD; Alexis Bilbow, MD |
| 2009-2010 | Tricia Desvarieux, MD; Rabi Panigrahi, MD; Darcy Towsley, MD; Michele Sumler, MD |
| 2010-2011 | Charles Brown, MD; John Coleman, MD; Romeo Kaddoum, MD; Rosanne Sheinberg, MD |
| 2011-2012 | Robert Black, MD; Sanjay Dwarakanath, MD; Adam Evans, MD; Nadia Hensley, MD; Neadum Odum, MD |

2012-2013 Vivek Arora, MD; Jennifer Dietrich, MD; Steve Gibson, MD; Michael Mantinan, MD;
Jochen Steppan, MD

CLINICAL ACTIVITIES

Certification and Boards

1979 Education Commission for Foreign Medical Graduates
1980 Visa Qualifying Examination (V.Q.E.) (London)
1982 M.R.C.P.I. Member, Royal College of Physicians, Ireland
1983 F.L.E.X. (Massachusetts)
1984 Maryland License
Maryland Drug License
DEA License
1986 Anesthesiology Board Certification – Diplomate, American Board of Anesthesiologists

SYSTEM INNOVATION AND QUALITY IMPROVEMENT ACTIVITIES

Production of guidelines and/or protocols:

2009 Garnered ACGME Accreditation for Cardiothoracic Anesthesia Fellowship Program
2013 Service / Patient Care Safety in Cardiovascular Anesthesiology
- Multiple initiatives including institution of VAD protocols, glycemic protocols, etc.
- Educational/Orientation/Safety program for cohort of CRNA providers in CVDL/EP

ORGANIZATIONAL ACTIVITIES

Institutional Administrative Appointments

1988-Present Member Departmental Residency Recruitment/Interview Committee
1991-1997 Chairman, Cardiac Service Quality/Assurance Committee
1991-1997 Member, Institutional Cardiovascular Task Force
1991-1998 Member, Departmental Education Committee
1991-Present Chief, Division of Cardiac Anesthesia Services (encompassing both intra- and post-operative Cardiac Intensive Care Unit (CICU) services
1995 Initiated Intensivist Services for Cardiac Surgery Patients at JHH (in conjunction with Dr. William Baumgartner. Model replicated by other Institutions (e.g., U. Penn, Dr. T. Gardner)
1996-Present Member, Departmental Service Executive Committee
2005-Present PPC Committee
2007-2008 Cardiac Surgery Chief Search Committee
2007-Present Faculty Senate
2007-Present Chair, ACCM Associate Professor's Faculty Development/Mentoring Committee
2009-Present Medical School Council
On-going Residents/Fellows: Grand Rounds/Conferences/Journal Clubs/Lecturer
On-going Lecturer for basic science curriculum, School of Perfusion
On-going Medical Student Lectures
On-going Member Planning Committee for "Critical Care Tower"

Editorial Activities

Editorial board appointments

Editorial Board, *Journal of Cardiothoracic and Vascular Anesthesia*
Consultant/Reviewer - *Anesthesiology*

Journal peer review activities

Anesthesia and Analgesia
European Journal of Pharmacology
Journal of Applied Science
American Journal of Physiology

Advisory Committees, Review Groups/Study Sections

Professional Societies

American Society of Anesthesiologists
Association of Cardiovascular Anesthesiologists
Association of University Anesthesiologists: Educational Committee Member
Council on Circulation Research
Maryland/DC Society of Anesthesiologists
Royal College of Physicians of Ireland
Society for Cardiovascular Anesthesia: Education Committee 1998-2000

RECOGNITION

Awards, Honors

1975 Welcome Trust Medical Scholarship, Medical Research Council
1975 Welcome Trust Medical Scholarship, Medical Research Council
1975 Henry Hutchinson Scholarship, Pharmacology, National University of Ireland
1977 College Scholar, University College, Cork, National University of Ireland
1977 College Scholar, University College, Cork, National University of Ireland
1984 Merel Harmel Resident of the Year, Anesthesiology and Critical Care Medicine, Johns Hopkins University, Baltimore, Maryland

Invited Talks, Panels

National

1988-Present Multiple Grand Rounds, ACCM, The Johns Hopkins Medical Institutions
1988-Present Multiple Grand Rounds, Division of Cardiac Surgery, The Johns Hopkins Medical Institutions
1988 ASA Regional Refresher Course Lecturer, Washington, DC. "Acid-Base Management During Hypothermia"
1989 ASA Annual Meeting, Chairperson, Scientific Session, New Orleans, LA
1989 Visiting Professor, Department of Anesthesiology, Uniformed Services Medical Center, Bethesda, MD
1990 Visiting Professor, Department of Anesthesiology, Fairfax Medical Center, Fairfax, VA
1992 Visiting Professor, Department of Anesthesiology, Uniformed Services Medical Center,

Bethesda, MD

- 1992 Visiting Professor, Department of Anesthesiology, Cornell Medical Center, New York, NY
- 1994 Visiting Professor, Department of Anesthesiology, University of Illinois, Urbana, IL
- 1994 Visiting Professor, Department of Anesthesiology, Massachusetts General Hospital, Boston, MA
- 1995 Visiting Professor, Department of Anesthesiology, Fairfax Medical Center, Fairfax, VA
- 1996 Visiting Professor, Department of Anesthesiology, University of Texas, Galveston, TX
- 1999 Chairman, Educational Symposium, Society of Cardiovascular Anesthesiologists, Chicago, IL
- 2000 Visiting Professor, Department of Anesthesiology, Vanderbilt University, Nashville, TN
- 2000 Invited Speaker, Association of Cardiovascular Anesthesiologists, San Francisco, CA
- 2010 Invited Speaker, Association of Cardiovascular Anesthesiologists, San Francisco, CA
- 2010 Visiting Professor, Cleveland Clinic Foundation, Cleveland, OH
- 2011 Visiting Professor, New York University School of Medicine, New York, NY

International

- 1991 World Congress of Anesthesia, The Hague, Netherlands, "Current Concepts in CPR"
- 1991 World Congress of Anesthesia, The Hague, Netherlands, "Cardiac Electrophysiology, Interpretation and Significance"
- 1997 Invited Keynote Speaker, Association of Anesthetists and Intensivists of Ireland
- 2007 Invited Speaker, Association of Cardiovascular Anesthesiologists, Montreal, Canada
- 2007 Invited Speaker, FESBE-Federacao de Sociedades de Biologia Experimental, Brazil
- 2009 Invited Speaker, Biennial Meeting, University College Cork, Ireland
- 2010 Invited Speaker, The 3rd Annual Meeting of Chinese Society of Anesthesiology on Organ Transplantation. The International Conference on Anesthesia Research and Clinical Management of Organ Transplantation, Hangzhou, China, April 2010.
- 2010 Invited Speaker, Winter College Lecture, Dublin, Ireland, November, 2010
- 2011 Invited Speaker, SENS5, Queens College, Cambridge, UK, August, 2011
- 2011 Visiting Professor, Grand Rounds, NYU, September 2011