

# Debra Anne Schwinn, MD

## CURRICULUM VITAE

Updated July 25, 2019



### MAJOR ADMINISTRATIVE POSTS, ROLES & ACCOMPLISHMENTS

- **Integrated Academic Health System Leader (2016-2019):** Associate Vice President for Medical Affairs, UI Health Care
- **College of Medicine Leader (2012-2016):** Dean of Medicine, Roy J. & Lucille A. Carver College of Medicine (CCOM); Member, UI Health Care Vice President for Medical Affairs (VPMA) Cabinet, UI Health Systems Board of Directors; Head, Board of Directors, UI Physicians (UIP) faculty practice plan; \$701M college budget FY16
- **National Research Leader:** Elected member of the National Academy of Medicine (age 45; 2002), Association of American Physicians (2005), ACCA medical honorary (2015), former NIH NIGMS Advisory Council member (2000-2004), Four editorial boards, twenty years of continuous NIH study section experience, National Academy of Science report chair (2019-present); **Schwinn h-index = 51 as of July 2019 (ResearchGate)**
- **Interdisciplinary Research & Clinical Programs:** *University of Iowa*, \$269.9M UI CCOM total external research funding FY15 (official VPR tally); 154.4M competitive external research grants awarded to CCOM FY15; Organized biomedical research into 5 broad themes: 1) Diabetes, Metabolism & Obesity, 2) Neurosciences, 3) Heart & Lung, 4) Cancer, 5) Infection, Inflammation & Immunity, created university-wide Neuroscience Institute 2016; *University of Washington (UW)*, Created University-wide Mitochondria & Metabolism Center; UW Interdisciplinary Center for Pain Relief
- **Research Space Development:** New UI research buildings included Pappajohn Biomedical Discovery Building (2015), new vivarium on the main CCOM campus and renovation of Oakdale university vivarium (opening slated 2017); total 532,057 nsf research space in UI CCOM 2016, with a further 51,000 nsf anticipated once vivarium project completed
- **Physician Practice Plan:** As Dean was Head of the Board for the Faculty Practice Plan, oversaw transformation of UI Physician (UIP) practice plan into a fiscally sound, vibrant group practice capable of taking on risk (took over management of new Iowa River Landing outpatient clinics for hospital)
- **Senior Leader Recruiter:** Recruited Chairs & Department Executive Officers and Center/Institute Directors at University of Iowa: Anesthesia, Cardiac Surgery, Internal Medicine, Orthopedics, Pathology, Radiology, Fraternal Order of Eagles Diabetes Research Center Director, Executive Dean, Vice Dean for Clinical Affairs & Director, UIP, UIP COO, and initiated recruitment of the Neurosciences Institute Director (2012-2016)
- **Department Chair:** Past Chair, Dept Anesthesiology & Pain Medicine, University of Washington, Seattle, WA (2007-2012)
- **Physician Scientist:** Active NIH funding as principal investigator of a molecular pharmacology laboratory (1990-2016)
- **Educator:** Oversaw rollout of novel mechanisms-based (New Horizons) medical curriculum at UI CCOM (initially created under prior Dean and implemented under my leadership); Created NIH-funded physician scientist fellowship program at Univ WA; Director, Duke University School of Medicine 3<sup>rd</sup> (research) year, planning team member organizing start of Duke-sponsored graduate medical school for Southeast Asia, based in Singapore
- **Clinician:** Board certified, practicing anesthesiologist (originally cardiac anesthesiology fellowship trained)
- **Board of Trustees:** International Anesthesia Research Society, Board of Trustees, 12 years (2002-2014); Sarnoff Cardiovascular Foundation (Scientific Board 4 yrs, then Board of Directors 5 yrs) (2004-2012); Chair, University of Iowa Physicians (UIP) Board of Trustees (2012-2016); Alumni Trustee, The College of Wooster, Wooster, OH, 4 yrs (2004-2007)
- **Institutional Boards:** Chair, Iowa Medical Mutual Insurance Company (IMMIC) Board of Directors; Chair, Medical Council, UI CCOM; University of Iowa Research Foundation [UIRF] Board Member, UI, Iowa City, IA) (2012-2016); Founding member, Medical Engineering Advisory Board for University of South Florida – Tampa (USF) (2017-2018)
- **Successful Fundraiser:** Led UI Carver College of Medicine during achievement of \$340 million in campaign fundraising toward goal of \$700 million (collaborative effort with VPMA, UI Foundation, and faculty; played key role in significant gifts totaling \$20 million)

### CONTACT INFORMATION

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University of Iowa Health Care, Iowa City, IA 52242-1109

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Telephone (work) (319) 353-7303

Fax (work) (319) 356-1120

Email (work) [debra-schwinn@uiowa.edu](mailto:debra-schwinn@uiowa.edu)

Email (personal) [dschwinn@stanfordalumni.org](mailto:dschwinn@stanfordalumni.org)

## EDUCATION / FACULTY POSITIONS / ACADEMIC AWARDS

ACADEMIC QUALIFICATIONS SUMMARY

I am an experienced leader of complex organizations. This includes a significant track record as a scientist, educator, clinician, academic medical center and university leader, as well as experience in fiscal turn-around of a clinical faculty practice plan and philanthropy. Throughout my career I have trained MS and PhD students in my laboratory, as well as mentoring a range of other trainees (high school students, undergraduates, professional students, residents, postdoctoral fellows), faculty, and leaders from multiple disciplines. Over the years I have been privileged to put together teams of people who have accomplished much, including creation of *de novo* centers/institutes across all 3 academic missions (research, education, clinical); these have occurred in both private (Duke University) and public (University of Washington, University of Iowa) settings. Over the years, academic leadership positions included Director of the Molecular Pharmacology Laboratory, Director of Perioperative Genomics, Program Director for Cardiovascular Genomics (Center for Genomic Medicine), Vice Chair for Research, Chair of a major clinical department (Anesthesiology), Dean of Medicine, Chair of Board for UIP (Iowa's clinical faculty practice plan), and Associate Vice President for Medical Affairs.

EDUCATION

- 1979 The College of Wooster, B.A. (Chemistry, with honors), Wooster, Ohio
- 1983 Stanford University School of Medicine, MD, Stanford, California
- 1983-1984 Internship, Internal Medicine, Pennsylvania Hospital (Univ. Pennsylvania), Philadelphia, PA
- 1984-1986 Residency, Anesthesiology, Hospital of the University of Pennsylvania, Philadelphia, PA
- 1986-1987 Clinical Fellowship, Cardiac Anesthesiology, Duke University Medical Center, Durham, NC
- 1987-1992 Research Fellowship, Departments of Biochemistry & Medicine, Advisor: Robert J. Lefkowitz, MD (Nobel Laureate 2012), Professor of Medicine & Biochemistry, Duke University Medical Center, Durham, NC;  $\alpha_1$ -adrenergic receptor pharmacology and molecular biology
- 1995 Transesophageal echocardiography training (Duke Cardiology Echo Lab, then Duke Hospital O.R.)
- 2000 Sabbatical, Functional Genomics / Genetics, National Human Genome Research Institute (NHGRI), NIH, Bethesda, MD, Sponsor: Eric Green, M.D., Ph.D. (currently Director of NHGRI, NIH)
- 2008 Harvard Leadership Development for Physicians and Scientists (Department Chairs & Chiefs), Harvard School of Public Health, Boston, MA
- 2016 Parker Palmer Center for Courage & Renewal, Academy for Leaders (2016 cohort), Bainbridge Island, WA; Harvard Law School Negotiations Institute (Intro & Advanced), Boston, MA; Strozzi School of Embodied Leadership, Petaluma, CA; Stanford Law Director's Course, Stanford, CA; Stanford Business Leading Change & Organizational Renewal, Stanford, CA; Iowa City Hospice volunteer training
- 2016-2017 New Ventures West Integral Coaching (professional integral coaching certificate course), San Francisco, CA; Leading Organizations to Health, Peaceful Valley, CO; Robert Fritz Organizational Development, Newfane, VT
- 2017 Internal Family Systems Level 1, 2-week retreat style training, Delray Beach, FL & Montpelier, VT

ACADEMIC HONORS

- 1975 Valedictorian, Malabar High School, Mansfield, Ohio
- 1976 Compton Scholarship to Highest Ranking Freshman, The College of Wooster
- 1976 American Chemical Society Outstanding Freshman Award, The College of Wooster
- 1977 John W. Chittum Prize in Organic Chemistry, The College of Wooster
- 1977 Joseph A. Culler Prize in General Physics, The College of Wooster
- 1977 Edward Taylor Prize for Academic Rank, The College of Wooster
- 1978 Phi Beta Kappa Prize, The College of Wooster
- 1978 James Kendall Cunningham Memorial Prize, The College of Wooster, awarded to the premedical student adjudged to be the most likely to succeed in medicine
- 1978 Francis and Elizabeth Twinen Scholarship for Premedical Studies, The College of Wooster
- 1979 Iota Sigma Pi, Chemistry honorary, The College of Wooster
- 1979 Galpin Prize for Overall Outstanding Graduate, The College of Wooster
- 1979 International Association for the Exchange of Students for Technical Experience, exchange student, Abbots Langley Hospital Pharmacy, Abbots Langley, England
- 1981 M.A. Cartland Shackford Medical Fellowship, Wellesley College Graduate Fellowship, awarded to one woman graduate from any U.S. college/university for medical school
- 1982 Soroptomist International Scholarship (for medical school), Sierra Pacific Region, San Francisco, CA
- 1983 American Society of Anesthesiology Preceptorship, Department of Anesthesiology, UCLA School of Medicine, Preceptor: Dr. Robert Reynolds, Los Angeles, CA

- 1987 Anaquest Award for the Outstanding Abstract Presentation at the 13<sup>th</sup> Annual Gulf Atlantic Anesthesia Residents' Conference, UNC, Chapel Hill, NC
- 1990 Research Award (1<sup>st</sup> place, co-winner), 44<sup>th</sup> Postgraduate Assembly in Anesthesiology
- 1992 Election to the Association of University Anesthetists (AUA, national anesthesiology faculty honorary)
- 1993 Election to the Association of Cardiac Anesthesiologists (ACA, national honorary), now emeritus
- 1993 Election to the American Society for Pharmacology and Experimental Therapeutics (ASPET)
- 1993 Stuart Pharmaceuticals/Society of Cardiovascular Anesthesiologists Fellowship Award
- 1994 Joseph S. Redding Critical Care Research Award, Southern Society of Anesthesiologists
- 1995 Resident Research Prize (1<sup>st</sup> place), Society of Cardiovascular Anesthesiologists
- 1995 Tenure, Department of Anesthesiology, Duke University Medical Center, Duke University**
- 1996 Senior Fellow, Center for the Study of Aging and Human Development, Duke University
- 1997 Election to AQA (Duke University Faculty Member) (honorary medical society)**
- 1998-1999 Member, 1999 Class of National Fellows, Executive Leadership in Academic Medicine (ELAM)
- 1998-2012 Elected to the Society for Basic Urologic Research (SBUR); emeritus member after 2012
- 2000 Visiting Investigator Program (VIP) Awardee, National Human Genome Research Institute (NHGRI), sabbatical
- 2000 Nominated, Davison Council Teaching Awards, Duke Medical School
- 2000 Highlighted alumnus from Stanford University School of Medicine (40 chosen out of 7000) for the 40<sup>th</sup> anniversary of the medical school
- 2000-2004 Member, NIH NAGMSC (NIGMS Advisory Council; *ad hoc* 2000, full member 2001-2004)**
- 2001 First Annual Foundation for Anesthesia Education & Research (FAER) Excellence in Research Honorary Lecture, American Society of Anesthesiology National Meeting, News Orleans (10/15/01)
- 2002 Duke University Medical Center Alumni Association's Distinguished Faculty Award
- 2003-2007 James B. Duke Professor (university-wide Endowed Chair), Duke University**
- 2002-2014 Board of Trustees, International Anesthesiology Research Society (IARS)
- 2002-Present Elected Member, National Academy of Medicine (NAM) of the National Academies of Science**
- 2003-Present Inaugural Fellow of the American Heart Association
- 2004-2011 Sarnoff Cardiovascular Research Foundation, Scientific Committee
- 2005-Present Elected to Fellowship in the Royal College of Anaesthetists
- 2005-2007 Vice Chair, Section 6, Institute of Medicine (IOM; now National Academy of Medicine)
- 2005-2009 Membership Committee, Institute of Medicine (IOM; now National Academy of Medicine)
- 2005-Present Elected Member, Association of American Physicians (AAP)**
- 2006 Jacob Ehrenzeller Outstanding Achievement & Service in Medicine Award (Pennsylvania Hosp, Philadelphia, PA)
- 2007 Tenure, UW Medicine, Department of Anesthesiology & Pain Medicine, University of Washington**
- 2007-2009 Chair, Section 6, Institute of Medicine (IOM; now National Academy of Medicine)
- 2007 American Society of Anesthesiologists (ASA) Excellence in Research Award winner
- 2008-2012 Washington State Academy of Science, Founding member
- 2010 Walter C. Randall Lecture in Biomedical Ethics, The American Physiological Society, Anaheim CA, 4/27/2010
- 2011-2013 Sarnoff Cardiovascular Research Foundation, Board of Directors
- 2011-2012 Chair, Board of Directors, Sarnoff Cardiovascular Research Foundation**
- 2011-2012 Allan J Treuer Endowed Professor of Anesthesiology, Univ Washington, School of Medicine, Seattle WA**
- 2012 American Society of Anesthesiologists (ASA) John W. Severinghaus (Plenary) Lecture, American Society of Anesthesiology National Meeting, Washington D.C. (10/16/12)
- 2012-Present Foundation for Anesthesia Education & Research national Academy of Research Mentors in Anesthesiology
- 2012-2013 Chair, Board of Trustees, International Anesthesiology Research Society (IARS)**
- 2012-Present Tenure, Roy J. & Lucille A. Carver College of Medicine, University of Iowa, Iowa City, IA**
- 2014 J.E. Wallace Sterling Lifetime Alumni Achievement Award, Stanford University Medical Center (Oct. 18, 2014) (<http://med.stanford.edu/alumni/alumni-community/class-notes/DebraSchwinn.html>)**
- 2015 American Clinical and Climatological Association Membership (medicine honorary, inducted October 2015)
- 2015 Corridor Business Journal 2015 Woman of Influence, Cedar Rapids, IA

## **FACULTY POSITIONS**

- 1989-1993 Assistant Professor of Anesthesiology (Cardiac Anesthesiology), Duke University Medical Center, Durham, NC
- 1992 Assistant Professor of Anesthesiology (full-time faculty with independent laboratory), Duke Univ Medical Center
- 1992-1994 Assistant Professor of Pharmacology, Duke University Medical Center, Durham, NC
- 1993-1995 Associate Professor of Anesthesiology, Duke University Medical Center, Durham, NC
- 1993-2007 Member of the Graduate Faculty, Departments of Pharmacology/Cancer Biology and Cell & Molecular Biology, Duke University, Durham, NC
- 1994-1998 Associate Professor of Surgery, Duke University Medical Center, Durham, NC

1994-1998 Associate Professor of Pharmacology/Cancer Biology, Duke University Medical Center, Durham, NC  
 1995-1998 Associate Professor of Anesthesiology (Tenure), Duke University Medical Center, Durham, NC  
 1998-2003 Professor of Anesthesiology (Tenure), Duke University Medical Center, Durham, NC  
 1998-2007 Professor of Surgery, Duke University Medical Center, Durham, NC  
 1999-2007 Professor of Pharmacology/Cancer Biology, Duke University Medical Center, Durham, NC  
**2003-2007 University-wide James B. Duke Endowed Chair of Anesthesiology, Duke University, Durham, NC**  
**2005-2007 Program Director for Cardiovascular Genomics, Center for Genomic Medicine, Institute for Genome Science & Policy, Duke University, Durham, NC**  
 2005-2007 Professor of Medicine (Cardiology), Duke University Medical Center, Durham, NC  
**2007-2012 Professor & Chair of Anesthesiology & Pain Medicine, Department of Anesthesiology & Pain Medicine (Tenure), University of Washington, Seattle, WA**  
 2007-2012 Adjunct Professor of Anesthesiology, Duke University Medical Center, Durham, NC  
 2007-2012 Adjunct Professor of Pharmacology, Member of the Graduate Faculty, University of Washington, Seattle, WA  
 2007-2012 Adjunct Professor of Genome Sciences, Member of the Graduate Faculty, University of Washington, Seattle, WA  
 2007-2012 Associate Medical Staff, Seattle Cancer Care Alliance (SCCA), Seattle, WA  
**2011-2012 Allen J. Treuer Endowed Professor of Anesthesiology, University of Washington, Seattle, WA**  
 2012-Present **Professor of Anesthesiology (Tenure)**, Pharmacology, and Biochemistry, Roy J. & Lucille A. Carver College of Medicine, University of Iowa, Iowa City, IA  
 2014-2016 Affiliate Professor of Anesthesiology & Pain Medicine, Department of Anesthesiology & Pain Medicine, University of Washington, Seattle, WA (UW affiliate status needed so NIH R37 awarded to University of Iowa Carver College of Medicine could be sub-contracted to Dr. Schwinn's laboratory group at UW)

### **ACADEMIC LEADERSHIP POSITIONS**

1992-2007 Director, Molecular Pharmacology Laboratories, Dept. of Anesthesiology, Duke University Medical Center, Durham, NC  
 2001-2005 Vice-Chair for Research, Department of Anesthesiology, Duke University Medical Center, Durham, NC  
 2001-2005 Chair, 3<sup>rd</sup> Year Medical Student Curriculum (research year), Duke Univ Medical School, Durham, NC  
 2001-2007 Director, Perioperative Genomics, Duke University Medical Center, Durham, NC  
 2005-2007 Program Director for Cardiovascular Genomics, Center for Genomic Medicine, Institute for Genome Science & Policy, Duke University, Durham, NC  
 2007-2012 Chair of Anesthesiology & Pain Medicine, Department of Anesthesiology & Pain Medicine (Tenure), University of Washington, Seattle, WA  
 2012-2016 Dean, Roy J. & Lucille A. Carver College of Medicine, University of Iowa, Iowa City, IA  
 2016-2019 Associate Vice President for Medical Affairs, University of Iowa Health Care, Iowa City, IA

### **HONOR SOCIETIES & NATIONAL MEMBERSHIPS (past & present)**

<b>Alpha Omega Alpha</b> (medical honorary society)	Cardiac Muscle Society
American Society for Pharmacology and Experimental Therapeutics	Christian Medical and Dental Association
American Academy of Medical Ethics	Ex-Resident Association, Pennsylvania Hospital
<b>American Academy of Physicians</b> (honorary)	Heart Failure Society of America, Inc.
American Association for the Advancement of Science	Institute of Translational Health Sciences
<b>American Clinical and Climatological Association</b> (medical honorary society)	International Anesthesia Research Society
American Heart Association	International Society for Anaesthetic Pharmacology
American Medical Association	International Society for Heart & Lung Transplantation
American Scientific Affiliation	International Women's Leadership Association
American Society of Anesthesiologists	Iota Sigma Pi (chemistry honorary society)
American Society of Human Genetics	Iowa Medical Society
Association for Patient-Oriented Research	Iowa Society of Anesthesiologists
Assoc for International Development of Anesthesia	<b>National Academy of Medicine</b> (honorary)
Association of American Physicians	(prior name=Institute of Medicine)
Association of Anesthesiology Program Directors	New York Academy of Sciences
<b>Association of Cardiac Anesthesiologists</b> (honorary, emeritus)	North Carolina Society of Anesthesiologists (emeritus)
<b>Association of University Anesthesiologists</b> (honorary, emeritus)	Physicians for Social Responsibility
Catecholamine Society	Royal College of Anaesthetists
	Society for Basic Urology Research (emeritus)
	Society for Neuroscience
	Society of Academic Anesthesiology Chairs (emeritus)
	Society of Cardiovascular Anesthesia (emeritus)

Southern Medical Association (emeritus)  
Washington State Academy of Scientists (honorary)  
Washington State Medical Association (emeritus)

WA State Society of Anesthesiologists (emeritus)  
W. T. G. Morton Society (Anesthesiology Chair honor  
society) (emeritus)

### **ETHICS TRAINING / CERTIFICATION**

1992-1993 Member, Duke University Hospital Ethics Committee  
2000 National Human Genome Research Institute Ethics Fellows Course (yearlong), NIH, Bethesda, MD

### **RESEARCH SUMMARY**

It is my firm belief that excellence in research transcends department and college boundaries. The unifying theme of my personal research is mechanisms underlying the stress response, with studies ranging from basic science to clinical (where the operating room is a model of robust reproducible stress). Having been continuously funded by the NIH and other organizations for 27 years, national prominence in research was evidenced by election as a member of the *National Academy of Medicine* at age 45. I have served on four editorial boards. In addition, I have more than twenty years of study section experience including being Co-Chair of the Review Committee of the NIH Transformative R01 Award and serving as a NIH NIGMS Advisory Council member. I am currently chairing a report for the *National Academy of Science*.

**BASIC RESEARCH:** My NIH-funded (1989-2016) laboratory-based research focused predominantly on  $\alpha_1$ -adrenergic receptor ( $\alpha_1$ AR) regulation. After cloning cDNAs encoding novel  $\alpha_1$ AR subtypes, characterizing encoded proteins pharmacologically, ascertaining species-specific tissue distribution, my laboratory then turned to investigating mechanisms underlying regulation of the human  $\alpha_{1a}$ AR itself. This has included examining gene regions important in transcriptional regulation, specific receptor amino acids and kinases involved in agonist-induced  $\alpha_{1a}$ AR desensitization, as well as dissecting signaling pathways with the help of microarray and proteomics approaches. We have elucidated novel constitutive cycling of the human  $\alpha_{1a}$ AR, examined the role of lipid rafts in  $\alpha_{1a}$ AR signaling, studied transcriptional regulation of cascades of stress-induced genes, and most recently focused on naturally occurring genetic variability in human  $\alpha_{1a}$ ARs and resultant biologic consequences. Our research has implications for understanding mechanisms underlying human cardiovascular disease and even prostate disease. Most recently, my NIH-funded laboratory operated on the South Lake Union campus at the University of Washington, Seattle through April 2016.

**TRANSLATIONAL & CLINICAL RESEARCH:** I have completed clinical research trials as well. Historically these included studies designed to understand mechanisms underlying acute myocardial  $\beta$ AR desensitization during heart surgery. More recently perioperative genomics has been the research focus with a team of statistical geneticists, anesthesiology, surgery, and intensive care faculty examining the role of genetic variability on perioperative outcomes. Indeed, for 2 years I was Program Director for Cardiovascular Genomics in Duke's Institute of Genome Sciences & Policy, a University-wide institute. Taken together, our laboratory and clinical research has indeed transcended medical discipline, shedding light on mechanisms underlying acute and chronic stress responses.

**RESEARCH LEADERSHIP:** As a member of the National Academy of Medicine since 2002, an experienced scientific journal editorial board member and NIH (and other national) study section member, I have had an opportunity to view biomedical research from many leadership perspectives. From 2007 to 2012, while Professor and Chair in the Department of Anesthesiology & Pain Medicine at the University of Washington School of Medicine, my laboratory-based basic science studies continued while I led the department's research training grant, and moved the department from #22 in NIH funding to top 5 in NIH funding in 5 years. Then from 2012-2016, as Dean of the University of Iowa Roy J & Lucille A Carver College of Medicine, my own basic science laboratory continued operating at the University of Washington South Lake Union campus. At Iowa, NIH funding stabilized and then increased by \$13.8M in the first half of FY16 (first increase since 2008). New UI research buildings included the opening of the Pappajohn Biomedical Research Institute building (2015), new vivarium on the main CCOM campus and renovation of the Oakdale campus university vivarium (2017). In 2016, a total of 532,057 nsf research space exists in UI CCOM, with a further 51,000 nsf added once vivarium projects were completed.

**H-INDEX** Schwinn h-index = 51 as of July 2019 (49 excluding self-citations; ResearchGate)

### **JOURNAL EDITORIAL BOARD MEMBERSHIP**

1995-1998 Associate Editor, *Anesthesiology*  
1997-2000 Associate Editor, *Frontiers Biosci*  
2006-2009 Associate Editor, *Anesth Analg*  
2005-2010 Editor, *J Biol Chem*

### **JOURNAL REVIEWER (ad hoc)**

*American Heart Journal*  
*American Journal of Medicine*  
*American Journal of Physiology*  
*Anesthesia & Analgesia*  
*Anesthesiology*  
*Behavioral and Brain Functions*  
*Biochemistry Biophysica Acta*  
*Biochemical Pharmacology*  
*Brain Research Protocols*  
*British Journal of Anaesthesia*  
*British Journal of Pharmacology*  
*Canadian Journal of Anesthesiology*  
*Canadian Journal of Physiology & Pharmacology*  
*Chest*  
*Circulation Research*  
*Federation of American Societies for Experimental Biology Journal*  
*Federation of European Biochemical Societies Letters*

*Genome Research*  
*Journal of the American Medical Association*  
*Journal of Biological Chemistry*  
*Journal of Clinical Anesthesia*  
*Journal of Clinical Investigation*  
*Journal of Cardiothoracic & Vascular Anesthesia*  
*Journal of Cardiovascular Pharmacology*  
*Journal of Human Hypertension*  
*Journal of Pharmacology & Experimental Therapeutics*  
*Journal of Urology*  
*Life Sciences*  
*Molecular Endocrinology*  
*Molecular Pharmacology*  
*Nature*  
*Neurourology & Urodynamics*  
*Pharmacogenetics and Genomics*  
*Proceedings of National Academy of Sciences USA*  
*Urology*

### **NIH STUDY SECTIONS AND NATIONAL RESEARCH COUNCILS**

1992-1993	NIH-Surgery, Anesthesiology and Trauma (SAT) Study Section, <i>ad hoc</i>
1993-1997	NIH-Surgery, Anesthesiology and Trauma (SAT) Study Section, full member
1999-2000	NIH-National General Clinical Research Center (GCRC) Study Section, full member
2000	NIH-NAGMSC (NIGMS Advisory Council), <i>ad hoc</i>
<b>2001-2004</b>	<b>NIH-NAGMSC (NIGMS Advisory Council), full member</b>
2001-2005	Member, Cardiopulmonary, Perioperative, & Critical Care Council (CPCC), American Heart Association (AHA, official liaison for the Society of Cardiovascular Anesthesiologists)
2003	National Science Foundation (NSF), grant reviewer ( <i>ad hoc</i> )
2003-Present	Inaugural Fellow, Cardiopulmonary, Perioperative, & Critical Care Council, AHA
2003-2005	Member, Functional Genomics & Translational Biology Interdisciplinary Working Group, AHA
<b>2003-Present</b>	<b>Member, National Academy of Medicine</b> (formerly known as the Institute of Medicine)
2004-2005	Member, Membership, Marketing, & Communications Committee, AHA
2004-2012	Member, Scientific Board of the Stanley Sarnoff Endowment
2005	Participant, The National Academies Keck Futures Initiative Conference – Keck Foundation “The Genomic Revolution: Implications for Treatment and Control of Infectious Disease,” November 2005
2008-2009	Member, US Critical Illness and Injury Trials Group (USCIITG) Organizing Committee
2009	Chair, Special Emphasis Panel (SEP) 2P01 GM047818-16 of the National Institutes of Genetic Medical Sciences (NIGMS) reviewing a Program Project Grant (PPG)
2009	Participant, NHLBI Pediatric Heart Network Perioperative Working Group, Bethesda MD, April 6-7, 2009
2009	Reviewer, NIH Director’s New Innovator Award, April 2009
2009	Member, Special Emphasis Panel (SEP) ZRG1 GGG-M (52) of the National Institutes of Genetic Medical Sciences (NIGMS) reviewing pharmacogenetics network projects, December 3-4, 2009
2010	Reviewer, operational review of the Department of Anesthesia and Surgical Services (DASS) at the National Institutes of Health (NIH) Clinical Center, January 26-27, 2010
2010	Reviewer, NIH Director’s New Innovator Award, April 2010
2010	Member, Special Emphasis Panel (SEP) ZRG1 BCMB-A (50), Transformative R01 Roadmap Review, June 2, 2010, San Francisco, CA
2010	Member, NIH Department of Anesthesia and Surgical Services (DASS), Chief Search Committee, Bethesda, MD
2011	Member, Special Emphasis Panel (SEP) ZRG1 BCMB-A (50), Transformative R01 Roadmap Review, April 6, 2011, Baltimore, MD
2011	Member, Pharmacogenomics Research Network (PGRN) External Scientific Panel (ESP), April 27 & 28, 2011, Baltimore MD
2012	Reviewer, NIH Director’s New Innovator Award, January & February 2012
2012	Member, Pharmacogenomics Research Network (PGRN) External Scientific Panel (ESP), April 20, 2012, Philadelphia PA
2012	Reviewer, Special Emphasis Panel (SEP) ZGM1 NDIA-C (01), National Institute of General Medical Sciences Panel, May 3, 2012
2012	NIH-NAGMSC (NIGMS Advisory Council), <i>ad hoc</i> (May 24-25, 2012)



2012	Reviewer, NIGMS T32 awards, July 19-20, 2012, Washington DC
2013	Reviewer, NIH Director's New Innovator Award (ZRG1 MOSS-65 DP2), January 1, 2013
2013	Member, Pharmacogenomics Research Network (PGRN) External Scientific Panel (ESP), April 29-30, 2013, Chicago IL
2015	Co-Chair, Review Committee for NIH Transformative R01 Award, April 21, 2015, Washington DC
2018	Chair, Review Panel for NIH NIGMS T-32 Institutional Clinical Postdoctoral Research Training Program Evaluation; results presented at NIGMS Advisory Council, Natcher Building, NIH, Bethesda, MD, May 25, 2018

### **NATIONAL ACADEMIES OF SCIENCE COMMITTEES AND REPORTS**

2002-Present	Elected Member, Institute of Medicine (IOM), now called the National Academy of Medicine (NAM) of the National Academies of Science
2005-2006	Committee on "Increasing Rates of Organ Donation," Committee member; 1/24/2005 – 8/29/2006; resulting consensus study report entitled <u>Organ Donation: Opportunities for Action (2006)</u> , Institute of Medicine. Washington, DC: The National Academies Press. 2006 ( <a href="https://doi.org/10.17226/11643">https://doi.org/10.17226/11643</a> )
2005-2007	NAM Membership Section Leader (Section 06 Vice Chair; 7/1/2005 -- 6/30/2007)
2005-2007	NAM Membership Committee (member; 7/1/2005 -- 6/30/2007)
2005-2007	Membership Section Liaison (IOM Section 06 liaison; 7/1/2005 -- 6/30/2007)
2007-2009	NAM Membership Section Leader (Section 06 Chair; 7/1/2007 -- 6/30/2009)
2007-2009	NAM Membership Committee (member; 7/1/2007 -- 6/30/2009)
2007-2009	Membership Section Liaison (IOM Section 06 liaison; 11/27/2007 -- 6/30/2009)
2019-2020	Committee on "Assessment of the Available Scientific Data Regarding the Safety and Effectiveness of Ingredients Used in Compounded Topical Pain Creams," Committee Chair, 2/8/2019 -- 5/31/2020; report <i>in progress</i>

### **RESEARCH EXPERIENCE**

1978	Research Assistant, Oak Ridge National Laboratory, (Al Narton, PhD, Chemistry Division) " <i>X-ray diffraction of tertiary-butyl alcohol and water solutions</i> "
1978	Research Assistant, Oak Ridge National Laboratory, (G.M. Brown, PhD Chemistry Division) " <i>Neutron diffraction of Ag-β-Alumina super ionic conductors</i> "
1978-1979	Senior Thesis Research (Biochemistry), The College of Wooster, (Charles Borders, PhD, Professor of Chemistry) " <i>Isolation and characterization of fructose-1,6-bisphosphatase from quail breast muscle</i> "
1979	Research Assistant, Ohio State Agricultural Research and Development Center, (K.I. Brown, PhD, Professor and Chairman Poultry Science) " <i>Isolation and separation of estrogens from chicken blood using high pressure liquid chromatography</i> "
1979-1980	Research Assistant, Department Cardiovascular Surgery, Stanford Univ. Medical School, (Charles Bieber, MD, Senior Research Associate; Edward Stinson, MD, Professor of CV Surgery) " <i>Retrospective analysis of clinical variables in first ten years of the cardiac transplantation program at Stanford University hospital</i> " and " <i>Characterization of monoclonal mouse anti-human thymocyte globulin (ATG) for use in cardiac transplantation</i> "
1987 - 1992	Clinical Research Fellowship, Division of Cardiothoracic Anesthesia, Department Anesthesiology, Duke Univ. Medical Center, (J.G. Reves, MD, Professor and Director, The Duke Heart Center and R.W. McIntyre, MD, Assist. Prof. Anesthesiology) " <i>α<sub>1</sub>-Adrenergic responsiveness in patients with impaired left ventricular function during CABG surgery</i> "
1988-1992	Research Fellowship, Department of Biochemistry, Duke Univ. Medical Center, (Robert J. Lefkowitz, MD, Professor of Biochemistry, Professor of Medicine) " <i>α<sub>1</sub>-Adrenergic receptor pharmacology and molecular biology</i> "
1992-2007	Director, Molecular Pharmacology Laboratories, Department of Anesthesiology, Duke University Medical Center
2000	Visiting Investigator Program (VIP), National Human Genome Research Institute (NHGRI), (sabbatical year); Genome Technology Branch (Eric Green, MD, PhD) and Genetic Disease Research Branch (Robert Nussbaum, MD), NIH, Bethesda, MD, " <i>α<sub>1a</sub>-Adrenergic receptor pharmacogenetics</i> "
2001-2005	Head, Perioperative Genomics, Duke University Medical Center, Durham, NC
2005-2007	Program Director for Cardiovascular Genomics, Center for Genomic Medicine, Duke's Institute for Genome Sciences & Policy, Duke University, Durham, NC
2009-2012	Director (PI), Anesthesiology Research Fellowship Training Program, Univ Washington, Seattle, WA
2012-2016	Dean, University of Iowa Carver College of Medicine (responsible for all research; see details later)

- 2016-2019 Education and health systems research (3-year medical education and how to incorporate community physicians into growing AMC faculty practice plans)
- 2017-2018 Founding member, Medical Engineering Advisory Board for University of South Florida – Tampa (USF)

**GRANTS -- Schwinn = PI unless otherwise listed:**

- 1988 Stuart Pharmaceuticals/Society of Cardiovascular Anesthesiologists Fellowship Award, " *$\beta$ -Adrenergic responsiveness during CABG: effect of preoperative ejection fraction*," \$5000
- 1988-1989 American Society of Anesthesiologists/AUA Fellowship Award, "*Elucidation of the molecular structure of the human  $\alpha_1$ -adrenergic receptor*," \$20,750
- 1990 Foundation for Anesthesia Education and Research Starter Grant, "*Biochemical and pharmacologic characterization of a new  $\alpha_1$ AR subtype*," \$30,000
- 1990-1995 NIH/NHLBI K08 #HL02490, Clinical Investigator Award, "*Molecular characterization of  $\alpha_1$ -adrenergic receptors*," \$343,680 / 5 years
- 1991 Pfizer Cardiovascular Medicine Award, The Duke Heart Center, "*Molecular biology and cardiovascular medicine*," \$14,000
- 1992-1993 Pfizer Central Research, "*Characterization of and expression studies on the human  $\alpha_1$ -adrenergic receptor genes*," \$298,530 / 2 years
- 1992-1993 SmithKline Beecham, "*Dose-ranging effects IV T3 on hemodynamic and post-operative support requirements in patients undergoing CABG with compromised cardiac function*," (TS-108), \$51,554
- 1992-1994 Proctor & Gamble, " *$\alpha$ -AR distribution in selected human ENT tissues*," \$150,000 / 3 years
- 1992-1995 American Heart Association grant-in-aid, " *$\beta$ AR desensitization during CPB*," \$120,000 / 3 years
- 1993-1994 Brocades Pharma BV (currently named Yamanouchi Europe), "*Testing of  $\alpha_1$ AR binding*," \$50,000
- 1993-1999 NIH/NHLBI R01 #HL49103, "*Molecular distribution of human adrenergic receptors*," \$926,018 / 5 yrs
- 1993-2007 NIH T32 GM007105, "*Graduate Training Program in Pharmacological Sciences*" (Kuhn=PI; Schwinn = mentor)
- 1994-1995 SmithKline Beecham, Unrestricted Educational Award, \$150,000
- 1995-1996 Yamanouchi, Europe " *$\alpha_1$ -Adrenergic receptors in gut vessels*," \$45,000
- 1996-1997 NIH Pilot Project #AG11268 (Pepper Aging Center Grant, Duke University), "*Effect of aging on acute myocardial  $\beta$ -Adrenergic receptor desensitization during cardiopulmonary bypass*," \$25,000
- 1996-1999 NIH/NIA R01 #AG13853, "*Transcriptional regulation of human  $\alpha_{1a}$ ARs*," \$345,826 / 3 years
- 1996-2001 NIH/NIA K02 #AG00745, "*Transcriptional regulation of human  $\alpha_{1a}$ ARs*," \$341,600 / 5 years
- 1996-2002 NIH/ NHLBI R01 #HL57447, "*Desensitization of  $\beta$ -adrenergic receptors during CPB*," \$1,264,764 / 5 yrs
- 1996-2008 NIH T32 GM008600, "*Integrated training in anesthesiology research*" (Warner=PI; Schwinn=mentor)
- 1997-1998 Roche Bioscience "*Distribution of  $\alpha_1$ -adrenergic receptor subtypes in human spinal cord*," \$48,743
- 1997-1999 Ohmeda Educational Award, \$50,000
- 1999-2000 Baxter Educational Grant, \$50,000
- 1999-2005 NIH/NHLBI R01 #HL49103, "*Molecular distribution/regulation of adrenergic receptors*," \$1,106,465 / 5 years (Years 6-10)
- 2000 NIH NHGRI Visiting Investigator Program (VIP) awardee, " *$\alpha_{1a}$ -Adrenergic receptor pharmacogenetics and hypertension*," \$236,468 (sabbatical research award)
- 2000-2003 Yamanouchi Europe, Educational Grant, \$250,000
- 2000-2006 NIH R01 AG17566, "*Pharmacology of vascular  $\alpha_1$ -adrenoceptors*," \$1,432,032 / 5 years
- 2004-2009 NIH R01 #HL075273, "*Genetics of myocardial adverse outcomes/graft failure in CABG (GENE-MAGIC)*" \$2,134,295 / 5 years (Schwinn=PI) (2007-2009, transferred to Mihai Podgoreanu, MD, [Duke] when moved to UW)
- 2006-2011 NIH T32 HL007101, "*Multidisciplinary heart & vascular diseases*" (Rockman=PI; Schwinn = mentor)
- 2006-2008 National Academies / Keck Futures Initiative, "*Creating an inexpensive diagnostic for malaria using combined nanotechnology & genomic approaches*," \$75,000 / 2 years (Schwinn = PI)
- 2006-2008 Duke Clinical Innovation Award, "*Predicting patients at risk for adverse perioperative events*," \$150,000/year (Podgoreanu & Schwinn=PI)
- 2007-2009 NIH/NIBIB EB001650-04, "*Bioengineering cardiovascular training grant*," (Regnier=PI; Schwinn=mentor)
- 2007-2012 NIH/NIBIB 2T32 EB001650, "*Bioengineering cardiovascular training grant*," (Regnier=PI; Schwinn=mentor)
- 2007-2013 NIH T32 HL07312, "*Experimental pathology of cardiovascular disease*," (Schwartz=PI; Schwinn=mentor)
- 2008-2012 FAER Medical Student Anesthesia Research Fellowship program, \$4000 per student, 1-2 students/summer (Schwinn = PI) to UW Department of Anesthesiology



- 2008-2012 NIGMS T32 GM086270, "Anesthesiology & Perioperative Medicine Research Training," Annual Direct Costs \$348,014 (Schwinn=PI) (2012, transferred to Tonya Palermo, PhD, [UW] when moved to UI)
- 2010-2012 NIH T32 NICHD HD057822, "Injury prevention center," (Rivara=PI; Schwinn=mentor)
- 1993-2016 NIH/NHLBI R37 HL49103 (MERIT AWARD), "Subcellular Distribution & Regulation of  $\alpha_{1a}$ -Adrenoceptors" \$1,250,000 / 5 years (MERIT award began in 2006) (Schwinn = PI)

#### **PHILANTHROPIC AWARDS (Schwinn initiated only)**

- 2003 \$250,000, Perioperative Genomics (Mason family) (donated to Dept Anesthesiology, Duke University)
- 2009 \$100,000 endowment, Treuer Education & Research funds (Treuer family), (donated to UW Anesthesiology)
- 2011 \$500,000, Allen J. Treuer Endowed Professor of Anesthesiology (Treuer family), (donated to UW Anesthesiology)
- 2011 \$1 million, Chan Gunn Endowed Professorship in Integrated Pain Medicine, (donated to University of Washington Department of Anesthesiology & Pain Medicine for Pain Center)
- 2013 \$2 million, Endowed Chair for Director of ICORE (IA Center for Outcomes Research), CCOM
- 2013 Dancing with the Stars (dancer) – to raise support for the local Hope Lodge (home for patients/families during treatment at UI), American Cancer Society, local affiliate chapter fund-raiser
- 2013 \$1.5 million, Endowed Professor in Otolaryngology (donated to UI CCOM)
- 2013 \$500,000, Pediatric Cleft Palate care (donated to UIHC/CCOM for new Children's Hospital ORs)
- 2014 \$1 million, International Health Project in Niger (Code family), (donated to UI CCOM)
- 2012-2016 Led UI Carver College of Medicine during achievement of \$340 million in campaign fundraising, toward a goal of \$700 million. Played key role in cultivation of 4 significant gifts (\$20M total): \$15M bequest to establish Deanship and several endowed chairs; \$2M to establish endowed chair, \$2M pledge for chair/gift to Children's Hospital, and \$1M for medical student international work.

#### **PUBLICATIONS – JOURNALS: PEER REVIEWED**

1. Bieber CP, Hunt SA, **Schwinn DA**, Jamieson SA, Reitz BA, Oyer PE, Shumway NE, Stinson EB. Complications in long-term survivors of cardiac transplantation. *Transplantation Proc* 1981; 8: 207-211 PMID:7022823
2. Hammer G, **Schwinn DA**, Wollman H. Postoperative complications due to paradoxical vocal cord motion. *Anesthesiology* 1987; 66: 686-687 PMID:3578883
3. **Schwinn DA**, Reves JG. Cardiovascular pharmacology: the adrenergic system. *Anesth Analg* 1987; 66:28-31
4. **Schwinn DA**, McIntyre RW, Hawkins ED, Kates RA, Reves JG.  $\alpha_1$ -adrenergic responsiveness during coronary artery bypass surgery: effect of preoperative ejection fraction. *Anesthesiology* 1988; 69: 206-217 PMID:2841891
5. Cotecchia S, **Schwinn DA**, Randall RR, Lefkowitz RJ, Caron MG, Kobilka BK. Molecular cloning and expression of the cDNA for the hamster  $\alpha_1$ -adrenergic receptor. *Proc Natl Acad Sci USA* 1988; 85: 7159-7163 PMID:2845398
6. McIntyre RW, **Schwinn DA**. Atrial natriuretic peptide. *J Cardiothorac Anesth* 1989; 3: 91-98 PMID:2535291
7. **Schwinn DA**, Reves JG. Time course and hemodynamic effects of  $\alpha_1$ -adrenergic bolus administration in anesthetized patients with myocardial disease. *Anesth Analg* 1989; 68: 571-578 PMID:2541637
8. Schwartz DM, Gennarelli TA, Young M, Fedder SL, **Schwinn D**. Intraoperative monitoring of brainstem auditory evoked potentials following emergency evacuation of a cerebellar vascular malformation. *J Clin Monitor* 1989; 5: 116-118 PMID:2723706
9. Cotecchia S, **Schwinn DA**, Lefkowitz RJ, Caron MG. The  $\alpha_1$ -adrenergic receptor as a paradigm of receptors coupled to guanine nucleotide binding proteins. *Neuropsychopharmacology* 1990: 64-69
10. **Schwinn DA**, Lomasney JW, Lorenz W, Szklut PJ, Freneau RT Jr, Yang-Feng TL, Caron MG, Lefkowitz RJ, Cotecchia S. Molecular cloning and expression of the cDNA for a novel  $\alpha_1$ -adrenergic receptor subtype. *J Biol Chem* 1990; 265: 8183-8189 PMID:1970822
11. **Schwinn DA**, McIntyre RW, Reves JG. Isoflurane-induced vasodilation: role of the  $\alpha$ -adrenergic nervous system. *Anesth Analg* 1990; 71: 451-459 PMID:1977331
12. **Schwinn DA**, Cotecchia S, Lorenz W, Caron MG, Lefkowitz RJ. The  $\alpha_{1c}$ -adrenergic receptor: a new member in the  $\alpha_1$ -adrenergic receptor family. *Trans Assoc Am Physicians* 1990; 103: 112-118 PMID:1966743
13. **Schwinn DA**. Beta-adrenergic receptor function in surgical patients. *Anesth Analg* 1991; 72: 412 PMID: 1847279
14. Lomasney JW, Cotecchia S, Lorenz W, Leung WY, **Schwinn DA**, Yang-Feng TL, Brownstein M, Lefkowitz RJ, Caron MG. Molecular cloning and expression of the cDNA for the  $\alpha_{1a}$ -adrenergic receptor: the gene for which is located on human chromosome 5. *J Biol Chem* 1991; 266: 6365-6369 PMID:1706716
15. **Schwinn DA**, Leone BJ, Spahn DR, Chesnut LC, Page SO, McRae RL, Liggett SB. Desensitization of myocardial  $\beta$ -adrenergic receptors during cardiopulmonary bypass: evidence for early uncoupling and late downregulation. *Circulation* 1991; 84: 2559-2567 PMID:1659956

16. Lysaught MT, **Schwinn DA**. Promises and pitfalls: ethical dimensions of genetic engineering and anesthesiology. *Semin Anesth* 1991; 10: 141-156 PMID:11651352
17. Liggett SB, **Schwinn DA**. Multiple potential regulatory elements in the 5' flanking region of the  $\beta_3$ -adrenergic receptor. *DNA Seq* 1991; 2: 61-63 PMID:1666313
18. **Schwinn DA**, Page SO, Middleton JP, Lorenz W, Liggett SB, Yamamoto K, Lapetina EG, Caron MG, Lefkowitz RJ, Cotecchia S. The  $\alpha_{1c}$ -adrenergic receptor: characterization of signal transduction pathways and mammalian tissue heterogeneity. *Mol Pharmacol* 1991; 40: 619-626 PMID:1658600
19. **Schwinn DA**, Correa-Sales C, Page SO, Maze M. Functional effects of activation of  $\alpha_1$ -adrenergic receptors by dexmedetomidine: *in vivo* and *in vitro* studies. *J Pharmacol Exper Ther* 1991; 259: 1147-1152 PMID:1684815
20. Berkowitz DE, **Schwinn DA**. New advances in receptor pharmacology. *Curr Opin Anesth* 1991; 4: 486-496
21. Lu CD, **Schwinn DA**. Management of a difficult intubation during acute myocardial ischemia following a failed angioplasty. *J Cardiothor Vasc Anesth* 1992; 6: 335-337 PMID:1611001
22. Thomas RF, Holt BD, **Schwinn DA**, Liggett SB. Long term agonist exposure upregulation of  $\beta_3$ -adrenergic receptor expression via multiple cAMP response elements. *Proc Natl Acad Sci USA* 1992; 89: 4490-4494 PMID:1374904
23. Scheinin M, **Schwinn DA**. The locus coeruleus: site of hypnotic actions of  $\alpha_2$ -adrenoceptor agonists? *Anesthesiology* 1992; 76: 873-875 PMID:1350888
24. **Schwinn DA**, Lomsney JW. Pharmacological characterization of cloned  $\alpha_1$ -adrenoceptor subtypes: selective antagonists suggest the existence of a fourth subtype. *Eur J Pharmacol* 1992; 227: 433-436 PMID:1359975
25. Hoehe MR, Berrettine WH, **Schwinn DA**, Hsieh WT. A two-allele PstI RFLP for the  $\alpha_{1c}$ -adrenergic receptor gene (ADRA1C). *Hum Mol Genet* 1992; 1: 349 PMID:1363873
26. Kwatra MK, **Schwinn DA**, Scheurs J, Blank JL, Kim CM, Benovic JL, Krause JE, Caron MG, Lefkowitz RJ. The substance P receptor, which couples to  $G_{q/11}$ , is a substrate of  $\beta_1$ -adrenergic receptor kinase 1 and 2. *J Biol Chem* 1993; 268: 9161-9164 PMID:7683643
27. Liggett SB, Freedman NJ, **Schwinn DA**, Lefkowitz RJ. Structural basis for receptor subtype specific regulation revealed by a chimeric  $\beta_3/\beta_2$ -Adrenergic receptor. *Proc Nat Acad Sci USA* 1993; 90: 3665-3669 PMID:8386380
28. **Schwinn DA**. Adrenoceptors as models for G protein-coupled receptors: structure, function and regulation. *Br J Anaes* 1993; 71: 77-85 PMID:8343342
29. Franiak RJ, **Schwinn DA**. Acute myelogenous leukemia: implications of acute blast crisis and cardiopulmonary bypass. *J Cardiothor Vasc Anesth* 1993; 4: 455-457 PMID:8400103
30. Price DT, **Schwinn DA**, Lomasney JW, Allen LF, Caron MG, Lefkowitz RJ. Identification, quantification, and localization of mRNA for three distinct  $\alpha_1$ -adrenergic receptor subtypes in human prostate. *J Urol* 1993; 150: 546-551 PMID:7686987
31. **Schwinn DA**. Cardiovascular Pharmacology. *Anesth Analg* 1994; 78: 152-164
32. Price DT, Lefkowitz RJ, Caron MG, Berkowitz D, **Schwinn DA**. Localization of mRNA for three distinct  $\alpha_1$ -adrenergic receptor subtypes in human tissues: implications for human  $\alpha_1$ -adrenergic physiology. *Mol Pharmacol* 1994; 45: 171-175 PMID:8114668
33. Peterseim DS, Chesnut LC, Meyers CH, D'Amico TA, Van Trigt P, **Schwinn DA**. Stability of the  $\beta$ -adrenergic receptor/adenylyl cyclase pathway of pediatric myocardium after brain death. *J Heart Lung Transplant* 1994; 13: 635-640 PMID:7947880
34. Price DT, Chari RS, Berkowitz DE, Meyers WC, **Schwinn DA**. Expression of  $\alpha_1$ -adrenergic receptor subtype mRNA in rat tissues and human SK-N-MC neuronal cells: implications for  $\alpha_1$ -adrenergic subtype classification. *Mol Pharmacol* 1994; 46: 221-226 PMID:8078485
35. Berkowitz DE, Price DT, Bello EA, Page SO, **Schwinn DA**. Localization of mRNA for three distinct  $\alpha_2$ -adrenergic receptor subtypes in human tissues: evidence for species heterogeneity and implications for human pharmacology. *Anesthesiology* 1994; 81: 1235-1244 PMID:7978483
36. **Schwinn DA**. Adrenergic receptors: unique localization in human tissues. *Adv Pharmacol* 1994; 31: 333-341 PMID:7532987
37. **Schwinn DA**, Johnston GI, Page SO, Mosley MJ, Wilson KH, Worman NP, Campbell S, Fidock MD, Furness LM, Parry-Smith DJ, Peter B, Baily DS. Cloning and pharmacologic characterization of human  $\alpha_1$ -adrenergic receptors: sequence corrections and direct comparisons with other species homologues. *J Pharmacol Exper Ther*, 1995; 272: 134-142 PMID:7815325
38. Margolis JO, McGrath BJ, Kussin PS, **Schwinn DA**. Do Not Resuscitate (DNR) orders during surgery: ethical foundations for institutional policies in the United States. *Anesth Analg* 1995; 80: 806-809 PMID:7893039
39. Berkowitz DE, Nardone NA, Smiley RM, Price DT, Kreutter DK, Freneau RT, **Schwinn DA**. Distribution of  $\beta_3$ -adrenoceptor mRNA in human tissues. *Eur J Pharmacol* 1995; 289: 223-228 PMID:7621895
40. Michel MC, Kenny B, **Schwinn DA**. Classification of  $\alpha_1$ -adrenoceptor subtypes. *Naunyn Schmiedeberg's Arch Pharmacol* 1995; 352: 1-10 PMID:7477417

41. Smith MS, Schambra UB, Wilson KH, Page SO, Hulette C, Light AR, **Schwinn DA**.  $\alpha_2$ -adrenergic receptors in human spinal cord: specific localized expression of mRNA encoding  $\alpha_2$ -adrenergic receptor subtypes at four distinct levels. *Mol Brain Res* 1995; 34: 109-117 PMID:8750866
42. Kirshbom PM, Tsui SS, DiBernardo LR, Meliones JN, **Schwinn DA**, Ungerleider RM, Gaynor JW. Blockade of endothelin-converting enzyme reduces pulmonary hypertension after cardiopulmonary bypass and circulatory arrest. *Surgery* 1995; 118: 440-444 PMID:7638762
43. Kwatra MK, Schreurs J, **Schwinn DA**, Innis MA, Caron MG, Lefkowitz RJ. Immunoaffinity purification of epitope-tagged human  $\beta_2$ -adrenergic receptor to homogeneity. *Protein Expr Purif* 1995; 6: 717-721 PMID:8746622
44. D'Amico TA, Meyers CH, Koutlas TC, Peterseim DS, Sabiston DC, Van Trigt P, **Schwinn DA**. Desensitization of myocardial  $\beta$ -adrenergic receptors and deterioration of left ventricular function after brain death. *J Thor Cardiovasc Surg* 1995; 110: 746-751 PMID:7564442
45. Kirshbom PM, Jacobs MT, Tsui SS, DiBernardo LR, **Schwinn DA**, Ungerleider RM, Gaynor JW. Effects of cardiopulmonary bypass and circulatory arrest on endothelium-dependent vasodilation in the lung. *J Thorac Cardiovasc Surg* 1996; 111: 1248-1256 PMID:8642827
46. Bennett-Guerrero E, Jimenez JL, White WD, D'Amico EB, Baldwin BI, **Schwinn DA**. Cardiovascular effects of intravenous triiodothyronine in patients undergoing coronary artery bypass graft surgery: a randomized, double-blind, placebo-controlled trial. *J Amer Med Assoc* 1996; 275: 687-692 PMID:8594265
47. Berkowitz DE, Richardson C, Elliott DA, Leslie JB, **Schwinn DA**. Hypotension resistant to therapy with  $\alpha$ -receptor agonists complicating cardiopulmonary bypass: lithium as a potential cause. *Anesth Analg* 1996; 82: 1082-1085 PMID:8610874
48. Chen B, Leverette RD, **Schwinn DA**, Kwatra MM. Human Gq: cDNA and tissue distribution. *Biochim Biophys Acta* 1996; 1281: 125-128 PMID:8664309
49. Lacey JP, Donatucci CF, Price DT, Page SO, Bennett SA, Tenniswood MT, **Schwinn DA**. Effects of androgen deprivation on prostate  $\alpha_1$ -adrenergic receptors. *Urology* 1996; 48: 335-341 PMID:8753753
50. Bello EA, **Schwinn DA**. Molecular biology and medicine: a primer for the clinician. *Anesthesiology* 1996; 85: 1462-1478 PMID:8968195
51. Kirshbom PM, Page SO, Jacobs TM, Tsui SS, Bello E, Ungerleider RM, **Schwinn DA**, Gaynor JW. Cardiopulmonary bypass and circulatory arrest increase endothelin-1 production and receptor expression in the lung. *J Thor Cardiovasc Surg* 1996; 113: 777-783 PMID:9104988
52. Tan JP, Seidler FJ, **Schwinn DA**, Page SO, Slotkin TA. A critical period for the role of thyroid hormone in development of renal  $\alpha$ -adrenergic receptors. *Pediatr Res* 1997; 42: 93-102 PMID:9212043
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54. Richardson CD, Donatucci CF, Page SO, Wilson KH, **Schwinn DA**. Pharmacology of tamsulosin: saturation binding isotherms and competition analysis using cloned  $\alpha_1$ -adrenergic receptor subtypes: comparison with alfuzosin, doxazosin, prazosin, terazosin, and (+)YM617. *Prostate* 1997; 33: 55-59 PMID:9294627
55. Bennett-Guerrero E, Kramer DC, **Schwinn DA**. Effect of chronic and acute thyroid hormone reduction on perioperative outcome. *Anesth Analg* 1997; 85: 30-36 PMID:9212118
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60. Scanga DR, **Schwinn DA**. Transcriptional regulation of  $\alpha_1$ -adrenergic receptors. *Front Biosci* 1998; 3: 348-353 PMID:9497274
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62. Lee K, Richardson CD, Razik MA, Kwatra MM, **Schwinn DA**. Multiple potential regulatory elements in the 5' flanking region of the human  $\alpha_{1a}$ -adrenergic receptor. *DNA Seq* 1998; 8: 271-276 PMID:10520459
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- during cardiopulmonary bypass: impairment of the adenylyl cyclase moiety. *Anesthesiology* 1998; 89: 602-611 PMID:9743395
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  66. Smith MS, Schambra UB, Wilson KH, Page SO, **Schwinn DA**.  $\alpha_1$ -adrenergic receptors in human spinal cord: specific localized expression of mRNA encoding  $\alpha_1$ -adrenergic receptor subtypes at four distinct levels. *Mol Brain Res* 1999; 63: 254-261 PMID:9878769
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  70. Rudner XL, Berkowitz DE, Booth JV, Funk BL, Cozart KL, D'Amico EB, El-Moalem H, Page SO, Richardson CD, Winters B, Marucci L, **Schwinn DA**. Subtype specific regulation of human vascular  $\alpha_1$ -adrenergic receptors by vessel bed and age. *Circulation* 1999; 100: 2336-2343 PMID:10587338
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  72. **Schwinn DA**. Latest results of the research on  $\alpha_1$ -adrenoceptor subtypes. *Drugs of Today* 2000; 36: 7-9
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  74. **Schwinn DA**. Novel role for  $\alpha_1$ -adrenergic receptor subtypes in lower urinary tract symptoms. *Br J Urol Intl* 2000; 86: Suppl 2:11-22 PMID:11501613
  75. Kilts JD, Gerhardt MA, Richardson MD, Sreeram G, Mackensen GB, Grocott HP, White WD, Davis RD, Newman MF, Reves JG, **Schwinn DA**, Kwatra MM.  $\beta_2$ -adrenergic and several other G protein-coupled receptors in human atrial membranes activated both  $G_s$  and  $G_i$ . *Circ Res* 2000; 87: 705-709 PMID:11029407
  76. Shapiro RE, Winters B, Hales M, Barnett T, **Schwinn DA**, Flavahan N, Berkowitz DE. Endogenous circulating sympatholytic factor in orthostatic intolerance. *Hypertension* 2000; 36: 553-560 PMID:11040235
  77. Price DT, Rudner X, Michelotti GA, **Schwinn DA**. immortalization of a human prostate stromal cell line using a recombinant retroviral approach. *J Urol* 2000; 164: 2145-2150 PMID:11061945
  78. Michelotti GA, Price DT, **Schwinn DA**.  $\alpha_1$ -adrenergic receptor regulation: basic science and clinical implications. *Pharmacol Ther* 2000; 88: 281-309 PMID:11337028
  79. Smith MS, **Schwinn DA**. *In situ* hybridization of adrenergic receptor mRNA in brain. *Methods Mol Biol* 2000; 126: 519-533 PMID:10685433
  80. Newman MF, Booth JV, Laskowitz DT, **Schwinn DA**, Grocott HP, Mathew JP. Genetic predictors of perioperative neurological and cognitive injury and recovery. *Clin Anaesth* 2001; 15: 247-276
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**Note:** **NORG** = Neurological Outcomes Research Group; **CARE** = Cardiac Anesthesia Research Endeavors; **POP** = Periooperative Organ Protection Research Group; **PEGASUS** = Periooperative Genetics & Safety Outcomes Study Investigators

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199. Stafford Smith M, **Schwinn DA**. "In Situ Hybridization of Adrenergic mRNA in Brain" in *Adrenergic Receptor Protocols*, vol. ed. Machida CA, in *Methods of Molecular Biology*, ed. Walker J. pp. 519-533; The Humana Press Inc, Totowa, NJ, 2000
200. Booth JV, **Schwinn DA**. "Sites of Drug Action" in *Basic and Applied Science for Anesthesia*, ed. Hemmings H, Hopkins P. pp. 65-72; Mosby International, Philadelphia, 2000
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203. Brzezinski M, Michelotti GA, **Schwinn DA**. "Genomics and proteomics" in *Foundation of Anesthesia*, 2<sup>nd</sup> edition, ed. Hemmings HC Jr., Hopkins PM. pp. 71-78; Mosby Press, London, 2005
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205. Body SC, **Schwinn DA**. "Genomics of Perioperative and Procedural Medicine" in *Genomic and Personalized Medicine*, ed. Willard HF, Ginsburg GS. pp. 794-800; Elsevier, New York, 2008
206. Shafer SL, Flood P, **Schwinn DA**. "Basic Principles of Pharmacology Related to Anesthesia" in *Anesthesiology* 7<sup>th</sup> edition, ed. Miller RD. pp. 479-513; Elsevier Churchill Livingstone, New York, 2010

#### **PUBLICATIONS – THESES, BOOK REVIEWS, FORWARDS**

207. **Schwinn DA**. Isolation and purification of fructose-1,6-bisphosphatase from quail breast muscle. Senior thesis, The College of Wooster, 1979
208. **Schwinn DA**. Why we do what we do: understanding self-motivation, by Deci, EL and Flast, R, Penguin Books, NY, 1995; book review in SELAM News, Allegheny Health Systems, 1999; 2: 13-14
209. **Schwinn DA**, Mackensen GB. "Forward to the second edition." *Core Topics in Cardiac Anesthesia*, 2<sup>nd</sup> ed. Eds. Jonathan H. Mackay and Joseph E. Arrowsmith. Cambridge UK: Cambridge University Press, April 2012

#### **PUBLICATIONS – LETTERS TO EDITOR**

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#### **PUBLICATIONS – NON-REFEREED**

220. **Schwinn DA**. Diffraction pattern and structure of tertiary-butyl alcohol and water solutions at 25°C. Internal publication, Oak Ridge National Laboratory, 1978
221. **Schwinn DA**. Small-angle x-ray and neutron scattering from liquids. Internal publication, Oak Ridge National Laboratory, 1978
222. **Schwinn DA**. Anesthesiology--the third world. Annual Report of the Department of Anesthesiology, Duke University Medical Center, 1987
223. Reves JG, **Schwinn DA**. Management of the patient with end-stage cardiac disease for non-cardiac surgery. *Amer Soc Anesth Refresher Course* 1987; Lecture 264: 1-7
224. **Schwinn DA**. Genetic engineering and its future implications for anesthesia. *Amer Soc Anesth Refresher Course* 1990; Lecture 236: 1-7
225. **Schwinn DA**. How is FAER support helping my career? *Amer Soc Anesth Newsletter*, 1991
226. **Schwinn DA**. Women in medicine: the hardest part. *Physician* 1993; 5: 10-11
227. **Schwinn DA**. Anesthesia and neurotransmitters - a clinician's view. *Amer Soc Anesth Refresher Course* 1995; Lecture 124: 1-6
228. **Schwinn DA**. Cardiovascular pharmacology: the clinician's view. *Amer Soc Anesth Refresher Course* 1996; Lecture 121: 1-6
229. **Schwinn DA**. Anesthesia and neurotransmitters -- a clinician's view. Cardiovascular Implications. *ASA Refresher Course Book* 1997; 169-181
230. **Schwinn DA**. Understanding anesthesia receptors & neurotransmission. *Amer Soc Anesth Refresher Course* 1997 Lecture # 226:1-6
231. **Schwinn DA**. Podgorneau M, Booth JV. The adrenergic receptors in clinical medicine. *Proceedings from 23<sup>rd</sup> Ann Meeting Soc Cardiovasc Anesth*, 2001: 25-31.
232. **Schwinn DA**. Anesthesia and genetics: why genetics is relevant to O.R. anesthesiologists. *Anesth Analg* 2003. *IARS Scientific Sessions 2003 Review Course*
233. Michelotti GA, **Schwinn DA**. The new genomics: microarrays. *Assoc Univ Anesth Newsletter*, Feb 2003
234. **Schwinn DA**. Running the race: search for novel  $\alpha_1$ -adrenergic receptor subtypes: FAER seed funding for biochemistry and molecular pharmacology training. *Amer Soc Anesth Newsletter*, March 2012
235. **Schwinn DA**. Leaders in academic medicine: Debra Schwinn, Associate Vice President for Medical Affairs at University of Iowa's Carver College of Medicine. *Blog.osmosis.org*, November 2016 (see URL below) <https://blog.osmosis.org/2016/11/06/leaders-in-medical-education-dr-debra-schwinn-associate-vice-president-for-medical-affairs-at-university-of-iowas-carver-college-of-medicine/>

#### **PUBLICATIONS – SOURCE**

Schwinn DA = source for Stazyk K. Careers in medicine: spotlight on specialties: anesthesiology. *Assoc Amer Med Coll Choices Newsletter*, Fall 2012

#### **PUBLICATIONS – ABSTRACTS**

Numerous abstracts have been presented at national and international meetings in anesthesiology, cardiovascular medicine, urology, genetics, biochemistry, and pharmacology.

### **EDUCATION SUMMARY**

Education is an integral part of a professor's life. I have given formal lectures and led learning sessions at Duke University, University of Washington, and University of Iowa to College of Medicine students and PhD graduate students, participated in small group problem-based learning in medical pharmacology (1<sup>st</sup> year medical students), and directed the entire 3<sup>rd</sup> year curriculum (research year) at Duke Medical School (2001-2005; n=100 students per year). I also have worked one-on-one with undergraduates, medical students and graduate students in my laboratory (Duke, UW), as well as with anesthesiology residents and senior cardiac anesthesiology fellows in the operating room (Duke, UW, UI). In 2003-2005 I was part of the planning team organizing the start of a new Duke-sponsored graduate medical school for Southeast Asia, based in Singapore. In addition, I have lectured in many departments and institutions across the United States and internationally and have trained basic science postdoctoral fellows and physician scientists in my laboratory. These activities continued at the University of Washington from 2007-2012 and intermittently at the University of Iowa 2012-present. More recently, I have worked closely with 5 students (MD, DO, MHA, and undergraduate) at the University of Iowa on 2 health systems

projects. Over the last decade, I have also enjoyed creating new faculty/fellowships designed to enhance academic depth and create leaders in a fiscally sustainable way. In terms of passing on knowledge to the next generation, I am most proud that many of my students have won research prizes and gone on to have successful academic careers themselves.

#### **DESCRIPTION OF FORMAL TEACHING ACTIVITIES/TEACHING AWARDS/PROGRAM DEVELOPMENT**

1984-1986	Assistant Instructor in Anesthesia, University of Pennsylvania, one-on-one medical student teaching
1987-2007	Duke University Medical Center, anesthesia resident and medical student lectures
1987-2007	Basic and Advanced Cardiac Life Support Instructor, several teaching sessions per year at Duke University Medical Center
1988	Advanced Cardiac Life Support Instructor, ACLS course director, Wake Medical Center, Raleigh, NC, March 26-27, 1988
1989-2007	Division of Cardiothoracic Anesthesia lectures, Department of Anesthesiology, Duke Heart Center, Duke University Medical Center
1993	Graduate school course lectures, Pharmacology 234 "Interdisciplinary Approach to Pharmacology," Department of Pharmacology, Duke University School of Medicine
1993-2002	Pharmacology medical student lectures, Pharmacology 200 "Medical Pharmacology" and "Problems in Pharmacology," Department of Pharmacology, Duke University School of Medicine
1996-2002	Head, Duke Heart Center Education Committee, DUMC
1998	Nominated, Davison Council Teaching Awards, Duke University School of Medicine
2001-2005	Chair, 3 <sup>rd</sup> Year Medical Student Committee (research year), Duke Medical School
2001-2005	Member, Duke Medical School Curriculum Committee
2002-2005	<b>Leadership Committee, Development of the joint Duke University/Singapore Graduate Medical School for Southeast Asia</b>
2007-2012	Problem-based teaching sessions for anesthesia residents at the VA Puget Sound Health Care System, Seattle, WA
2009-2012	Development of faculty/fellowship program in Department of Anesthesiology & Pain Medicine, UW Medicine, Seattle, WA
2011-2012	Lectures for University of Washington School of Medicine fellow, resident and faculty development courses, Seattle, WA
2012-2016	Various discussions with MSTP and medical students, residents, fellows, and faculty, University of Iowa Carver College of Medicine, Iowa City, IA
2013-2015	Nominator, MacArthur Genius Award

#### **TEACHING – DUKE UNIVERSITY**

*Numerous lectures in the following departments:*

1986-2007	Cardiac Anesthesiology Conferences, Department of Anesthesiology
1987-2007	Anesthesiology Resident Teaching Lectures, Department of Anesthesiology
1990-2007	Anesthesiology Research Conferences, Department of Anesthesiology
1990-2007	Medical Student Lectures (BLS and ACLS) - Duke University Medical School
1990-1997	Medical Student Lectures, Cardiovascular Study Tract Research Seminar Series, Duke University Medical School Research Curriculum
1990-2007	Grand Rounds, Department of Anesthesiology (intermittent)
1991-2007	Grand Rounds, Department of Surgery (intermittent)
1991-2007	Perfusionist Conferences, Department of Surgery (intermittent)
1993-2007	Pharmacology Seminars, Department of Pharmacology (intermittent)
1993-2007	Pharmacology Graduate Student Lectures, Department of Pharmacology (intermittent)
1993-2002	Medical Pharmacology Course, Department of Pharmacology, DUMC
1993-2007	Problems in Pharmacology, Department of Pharmacology, DUMC
2000	Medical Genetics Course, Department of Genetics, DUMC

#### **TEACHING –UNIVERSITY OF WASHINGTON**

2007-2012	Grand Rounds, Department of Anesthesiology & Pain Medicine (intermittent), UW Medicine
2007-2012	Pharmacology Graduate Student Lectures, Department of Pharmacology (intermittent)
2007-2012	Problem Based Learning Discussions, VA Puget Sound Health Care System, Department of Anesthesiology & Pain Medicine (intermittent), UW Medicine
2007	Grand Rounds, Department of Cardiology, UW Medicine
2007	Pathology Seminar, Department of Pathology, UW Medicine

2008	Seminar, Cardiovascular Research Center, UW Medicine
2008	Grand Rounds, Department of Neurosurgery, UW Medicine
2010	Panel on the Future of Research at UW Medicine, School of Medicine Chairs' Retreat, UW Medicine
2011	Faculty Development Seminar, " <i>Developing Leadership Skills: A Crucial Next Step</i> ," UW Medicine
2011	Resident/Fellow Seminar, " <i>The Practice of Medicine, Today and in the Future</i> ," UW Medicine
2012	Teaching Scholar Program, " <i>Leading Change</i> ," UW Medicine

### **TEACHING – UNIVERSITY OF IOWA**

2012-2013	Medical Scientist Training Program Gatherings, Roy J. and Lucille A. Carver College of Medicine (CCOM), Iowa City, IA
2012-2016	Numerous talks with medical students, residents and fellows, faculty, alumni, visitors, legislators, etc., Roy J. and Lucille A. Carver College of Medicine, Iowa City, IA
2012-2016	Fireside chats and town halls with medical students
2015-2016	LCME accreditation review committees formed for planned site visit in 2017-2018
2012-Present	Teaching of anesthesia residents and sRNAs (student CRNAs) in the operating room
2018-Present	New anesthesia resident 1:2 introduction to the operating room
2018-Present	Medical student problem-based learning discussions (PBLD), 2-week anesthesia rotation, "What is anesthesia?" "Pre-anesthesia evaluation of surgical patients"

### **INVITED LECTURES / VISITING PROFESSORSHIPS**

1989	Redding Critical Care Research Award Lecture, Southern Society of Anesthesiology, " <i>Time course and hemodynamic effects of <math>\alpha_1</math>-adrenergic bolus administration in anesthetized patients with myocardial disease</i> ," Atlanta, GA, April 7, 1989
1990	Visiting Professor, Department of Anesthesiology, University of Rochester, " <i>Adrenergic receptors and the anesthesiologist: a glimpse into the future</i> ," Rochester, NY, February 12, 1990
1990	Visiting Professor, Department of Anesthesiology, Boston University Medical Center, " <i>Adrenergic receptor subtypes: an anesthesiologist's dream or nightmare?</i> " Boston, MA, June 11, 1990
1990	Invited Speaker, Association of Cardiovascular Anesthesiologists, 1990 Annual Meeting, " <i>The <math>\alpha_1</math>-adrenergic receptor: a new family member</i> ," Las Vegas, NV, Oct. 19, 1990
1990	Visiting Professor, Department of Anesthesiology, University of Pennsylvania, " <i>Adrenergic receptors and the anesthesiologist: new perspectives on receptor structure/function relationships</i> " and " <i>Heterogeneity of <math>\alpha_1</math>-adrenergic receptors</i> ," Philadelphia, PA, November 6-8, 1990
1991	Visiting Professor, Department of Anesthesiology, The Johns Hopkins Hospital, " <i>New offspring in the adrenergic receptor family: an overview</i> ," Baltimore, MA, March 27-28, 1991
1991	Visiting Professor, Department of Anesthesiology, Columbia University, " <i>Ye shall be fruitful and multiply: the burgeoning family of adrenergic receptors</i> ," New York City, NY, April 4-5, 1991
1991	Invited Speaker, North Carolina Association of Nurse Anesthetists State Meeting, 50th Anniversary Lecture, " <i>The operating room of the future: genetics in anesthesia</i> ," Raleigh, NC, April 5, 1991
1991	Invited Speaker, Association of University Anesthesiologists, 38th Annual Meeting, " <i>Molecular pharmacology of G protein-coupled receptors: the <math>\alpha_1</math>AR story</i> ," Philadelphia, PA, May 4, 1991
1991	Visiting Professor and Annual Stein Lecture Speaker, University of Colorado, Annual Stein Lecture: " <i>Genetic engineering and its future implications for anesthesia</i> ," Denver, CO, June 9-11, 1991
1991	Visiting Professor, Department of Anesthesiology, Northwestern University, " <i>Adrenergic receptors: from the laboratory to the operating room</i> ," " <i><math>\beta</math>-Adrenergic receptor desensitization and cardiopulmonary bypass</i> ," Chicago, IL, November 18-19, 1991
1991	Visiting Professor, Department of Anesthesiology, Mayo Clinic, " <i>Adrenergic receptors and myocardial desensitization during cardiopulmonary bypass</i> ," " <i>Adrenergic receptor heterogeneity: defining new subtypes</i> ," Rochester, MN December 3-5, 1991
1992	Visiting Professor, Department of Anesthesiology, Medical College of Wisconsin, " <i>Heterogeneity of <math>\alpha_1</math>-adrenergic receptors</i> ," " <i>Adrenergic receptors: from the laboratory to the operating room</i> ," Milwaukee, WI, January 15-17, 1992
1992	Visiting Professor, Department of Anesthesiology, Pennsylvania State University-Hershey, " <i>Ye shall be fruitful and multiply: the burgeoning family of adrenergic receptors</i> ," " <i>Molecular biology for the anesthesiologist</i> ," Hershey, PA March 9-10, 1992
1992	The Rank Visiting Lecturer, The Royal College of Anaesthetists (England, Scotland, Wales), " <i>Adrenergic receptors: new horizons</i> ," Department of Anaesthetics as follows: Edinburgh, Scotland - April 16-22; Manchester, England - April 22-23; Cardiff, Wales - April 23-27; Oxford, England - April 28-29, 1992

- 1992 Invited Plenary Session Speaker, The Royal College of Anaesthetists Annual Meeting, "*Heterogeneity of  $\alpha_1$ -adrenergic receptors*," workshop session and "*Adrenergic receptors as models for G protein-coupled receptors: structure / function / regulation*," plenary session, London, England, April 29-May 3, 1992
- 1992 Visiting Professor, Department of Anesthesiology, Oregon Health Sciences University, "*Molecular biology of the adrenergic receptor*," "*Cardiac physiology and anesthesia*," Portland, OR, September 10-11, 1992
- 1992 Visiting Professor, Department of Anesthesiology, Vanderbilt University Medical Center, "*New horizons in adrenergic pharmacology*," Nashville, TN November 1-3, 1992
- 1992 Invited Speaker, Pfizer Central Research G Protein-Coupled Receptors Symposium, " *$\alpha_1$ -Adrenergic receptor subtypes: implications for human studies*," Groton, CT, November 17, 1992
- 1993 Visiting Professor, Department of Anesthesiology, Medical College of Virginia, "*New horizons in adrenergic receptor pharmacology*," Richmond, VA, February 7-8, 1993
- 1993 Visiting Professor, Department of Anesthesiology, State University of New York (SUNY), "*The adrenergic receptor family*," Brooklyn, NY, March 8-9, 1993
- 1993 Visiting Professor, Department of Anesthesiology, Mt. Sinai Medical Center, "*Adrenergic receptor molecular pharmacology*," New York, NY March 9, 1993
- 1993 Invited Speaker, Synaptic Corporation, " *$\alpha_1$ AR heterogeneity: 'of mice and men'*," Paramus, NJ, April 5, 1993
- 1993 Visiting Professor, Department of Anesthesiology, Stanford University, "*Adrenergic receptor heterogeneity: be ye fruitful and multiply*," Palo Alto, CA, May 26-28, 1993
- 1993 Visiting Professor, Syntex Pharmaceuticals, " *$\alpha_1$ -Adrenergic receptor heterogeneity: of mice and men*," Palo Alto, CA, May 27, 1993
- 1993 Invited Speaker, Anesthesia and Cardiovascular Disease Meeting, Medical College of Wisconsin, "*Adrenergic receptors: unique localization in human tissues*," Milwaukee, WI, September 10-12, 1993
- 1993 Invited Speaker, Pfizer Central Research, " *$\alpha_1$ -adrenergic receptor heterogeneity*," Sandwich, England, September 22-25, 1993
- 1993 Invited Speaker, Symposium on the  $\alpha_1$ -Adrenoceptor Pharmacology of Tamsulosin, Brocades Pharma by Yamanouchi Group, "*Evaluation of  $\alpha_1$ -adrenergic receptor subtype selective drugs*," Amsterdam, The Netherlands, October 2-4, 1993
- 1994 Visiting Professor, Department of Anesthesiology, University of Virginia, "*Cardiac physiology*," "*Adrenergic pharmacology and molecular biology*," Charlottesville, VA, January 11-12, 1994
- 1994 Invited Speaker, Western Pharmacological Society, "*Molecular biology of  $\alpha_1$ -adrenoceptors*," Kona, Hawaii, February 9, 1994
- 1994 Visiting Professor, Department of Physiology, University of North Carolina, "*Molecular pharmacology of  $\alpha_1$ -adrenergic receptor subtypes*," Chapel Hill, NC, February 28, 1994
- 1994 Visiting Professor, Department of Anesthesiology, Harvard Medical School, "*Molecular pharmacology of adrenergic receptors*," Boston, MA, December 13-15, 1994
- 1995 Visiting Professor, Department of Anesthesiology, University of California, San Diego, "*Molecular pharmacology of ARs--part I: a blending of basic science and clinical medicine*," "*Molecular pharmacology of ARs--part II: desensitization and cardiopulmonary bypass*," "*Foundations for institutional perioperative DNR (Do Not Resuscitate) policies*," "*Clinical adrenergic pharmacology: New principles and drugs*," San Diego, CA, March 1-3, 1995
- 1995 Center of Excellence Visiting Scholar, Department of Anesthesia, Marshall University School of Medicine, "*Adrenergic receptors and the clinician*," "*Molecular pharmacology of  $\alpha_1$ -adrenergic receptor subtypes*," Huntington, WV, March 19-20, 1995
- 1995 Invited Speaker, 9th Annual Meeting Society for Basic Urologic Research, "*State of the art:  $\alpha_1$ -adrenergic receptors*," Las Vegas, NV, April 23, 1995
- 1995 Invited Speaker, Refresher Course, American Society of Anesthesiology (ASA), "*Anesthesiology and neurotransmitters: a clinician's view*," National Meeting, Atlanta, GA, October 21, 1995
- 1995 Invited Speaker, Association of Cardiac Anesthesiologists (ACA), "*Molecular cardiology: gene therapy in action*," National Meeting, Atlanta, GA, October 22, 1995
- 1995 Visiting Professor, Department of Anesthesiology, Washington University School of Medicine, "*New frontiers in adrenergic pharmacology*," St. Louis, MO, December 6, 1995
- 1996 Visiting Professor, Department of Anesthesiology, University of Washington, "*Cardiovascular pharmacology: something old, something new*," Seattle, WA January 17, 1996
- 1996 Invited Speaker, 10th Annual Miami Review Course in Anesthesiology, "*What's new in cardiovascular pharmacology*," Miami, FL, March 3-9, 1996
- 1996 Invited Speaker, Biology of Prostate Growth, NIH Sponsored Symposium on Prostate, "*Molecular biology of the  $\alpha_1$ -adrenergic receptor family*," Washington D.C., March 31, 1996

- 1996 Visiting Professor, Department of Anesthesiology, University of NC - Chapel Hill, "*What's new in cardiovascular pharmacology?*" Chapel Hill, NC, June 12, 1996
- 1996 Visiting Professor, Department of Anesthesiology, University of Alabama at Birmingham, "*The art of a medical career,*" Birmingham, AL August 2-4, 1996
- 1996 Invited Speaker, Symposium on Cardiopulmonary Bypass in the 90's, Emory University, "*T3--uses and potential benefits during cardiopulmonary bypass,*" "*Acute desensitization of myocardial  $\beta$ -adrenergic receptors during CPB,*" Atlanta, GA, September 6-8, 1996
- 1996 Visiting Professor, Department of Anesthesiology, Columbia University Medical Center, "*What is new in adrenergic receptor pharmacology?*" New York, NY, November 6-8, 1996
- 1996 Invited Speaker, The New York State Society of Anesthesiologists, Inc, 50th PGA Conference, "*Molecular biology of  $\alpha_1$ -adrenergic receptors,*" New York, NY, December 7-8, 1996
- 1997 Visiting Professor, Department of Anesthesiology, Medical University of South Carolina, 1st Annual Joseph S. Redding Research Visiting Professorship, "*Novel approaches to cardiovascular pharmacology,*" Charleston, SC, January 12-13, 1997
- 1997 Visiting Professor, Department of Anesthesiology, Johns Hopkins University, "*New advances in adrenergic pharmacology,*" "*Update on  $\alpha_1$ AR pharmacology,*" Baltimore, MD, January, 22-24, 1997
- 1997 Invited Speaker, Society of Cardiovascular Anesthesiologists, "*Triiodothyronine should be used routinely during high risk cardiac operations,*" "*New advances in vascular biology,*" Baltimore, MD, May 10-14, 1997
- 1997 Invited Speaker, Society for Intravenous Anesthesia Annual Meeting, "*Molecular biology of  $\alpha_1$ -adrenergic receptors,*" San Diego, CA, October 17, 1997
- 1997 Invited Speaker, American Society of Anesthesiologists, "*Understanding anesthesia receptor and neurotransmitters,*" San Diego, CA, October 18-22, 1997
- 1997 Invited Speaker, International Symposium on Cardiothoracic and Vascular Anesthesia, "*Acute desensitization of myocardial  $\alpha$ -Adrenergic receptors during cardiopulmonary bypass,*" "*Thyroid hormone during cardiac surgery,*" Mexico City, Mexico, November 13-15, 1997
- 1998 Invited Speaker, Society for Neuroscience and Department of Anesthesiology, Bowman Gray Medical School, Wake Forest University Baptist Medical Center, "*Molecular biology of human  $\alpha_1$ -adrenergic receptors,*" "*Perioperative adrenergic pharmacology,*" Winston Salem, NC, February 10-11, 1998
- 1998 Visiting Professor, Department of Anesthesiology, Rush Presbyterian-St. Luke's Hospital, " *$\alpha_1$ -Adrenergic receptors in the perioperative period,*" Case presentations: "*New concepts in receptor pharmacology: what is R versus R\*?*" "*Cardiovascular drugs: when is a  $\beta$ -blocker an inotrope?*" Chicago, IL, February 18-19, 1998
- 1998 Invited Speaker, GlaxoWellcome, "*Possible  $\alpha_1$ AR targets in the management of human pain,*" Research Triangle Park, NC, February 25, 1998
- 1998 Visiting Professor, Department of Anesthesiology, Yale University School of Medicine, "*Novel uses for  $\alpha_1$ -adrenergic receptor antagonists in the perioperative period,*" "*An update on adrenergic pharmacology: what have we learned from transgenic animals?*" New Haven, CT, April 3-4, 1998
- 1998 Invited Speaker, Department of Anesthesiology, Laval University, "*Cardiovascular pharmacology,*" Quebec City, Quebec, Canada, April 6-7, 1998
- 1998 Invited Speaker, Society for Basic Urologic Research, Annual Meeting "*An update on  $\alpha_1$ -adrenergic receptors,*" San Diego, CA, May 29-30, 1998
- 1998 Visiting Professor, University of Connecticut, "*New aspects of receptor pharmacology,*" Hartford, CT, June 22, 1998
- 1998 Invited Speaker, Cardiothoracic Update; Duke University Division of Cardiothoracic Anesthesiology, " *$\beta$ -Adrenergic blockade and myocardial protection,*" Myrtle Beach, SC, June 27-28, 1998
- 1998 Invited Speaker, IUPHAR XIIIth International Congress of Pharmacology Official Satellite Symposium "*Molecular biology and tissue distribution of  $\alpha_1$ -adrenergic receptors,*" Paris, France, July 22-24, 1998
- 1998 Visiting Professor, Albany College of Pharmacy, "*The potential role of bladder  $\alpha_1$ AR subtypes in BPH,*" Albany, NY, November 18-19, 1998
- 1999 Visiting Professor, Department of Anesthesiology, Stanford University, "*Acute myocardial  $\beta$ AR desensitization during heart surgery,*" Palo Alto, CA, February 21-23, 1999
- 1998 Prostate Disease, Review Course, "*Receptor status in LUTs during aging,*" Barbados, March 17-20, 1999
- 1999 Invited Speaker, Cardiothoracic Update; Duke University Division of Cardiothoracic Anesthesiology, "*Update on cardiovascular pharmacology,*" Hilton Head, SC, June 28-29, 1999
- 1999 Invited Speaker, Consensus Meeting on  $\alpha_1$ -Adrenergic Receptor Subtypes, "*Latest results from the research on receptor sub-types, particularly  $\alpha_{1a}$  and  $\alpha_{1b}$ ,*" London, England, December 14, 1999
- 2000 Invited Speaker, 45th Annual Postgraduate Course in Anesthesiology, "*New concepts in receptor pharmacology,*" "*Novel uses of  $\beta$ AR antagonists during heart surgery,*" Snowbird, Utah, February 18-22, 2000



- 2000 Invited Speaker, 4th Tamsulosin Round Table Meeting, *"The role of  $\alpha_{1d}$ -Adrenoceptor subtype in the LUTS,"* Whistler, Canada, March 14, 2000
- 2000 Invited Speaker, URO 2000, *"Current research in the field of  $\alpha_1$ -receptors: the role of  $\alpha_{1a}$  and  $\alpha_{1d}$  in managing LUTS,"* Cancun, Mexico, March 16-19, 2000
- 2000 Invited Speaker, Duke University Women's Studies Alumni Symposium, *Women Image Change: 20th Century Achievements, 21st Century Challenges, "New prescriptions: women changing medicine,"* New York, New York, May 5, 2000
- 2000 Invited Speaker, NHGRI (NIH) Seminar Series, *" $\alpha_{1d}AR$  polymorphisms and hypertension,"* Bethesda, Maryland, May 25, 2000
- 2000 Invited Speaker, 12th World Congress of Anesthesiologists, *" $\beta$ -Adrenergic receptor blockers to prevent acute desensitization during cardiopulmonary bypass," "New concepts in molecular biology of adrenergic receptors,"* Montreal, Canada, June 4-6, 2000
- 2000 Invited Speaker, World Federation of Anesthesiology Satellite Meeting, *"New concepts in molecular adrenergic pharmacology" and " $\beta AR$  Antagonists in Cardiac Surgery,"* Ontario, Canada, June 9-11, 2000
- 2000 Invited Speaker, Genetics Institute, NINR (NIH), *"Single nucleotide polymorphisms of  $\alpha_1$ -adrenergic receptor genes and hypertension,"* Bethesda, Maryland, July 19, 2000
- 2000 Invited Speaker, Yamanouchi Satellite Symposium to the Societe International d'Urologie 2000, *"The role of  $\alpha_{1d}$ -adrenoceptor subtype in the LUTS,"* Singapore, October 31, 2000
- 2000 Visiting Professor, Singapore University Hospital, *"Novel uses of  $\beta AR$  antagonists during cardiac surgery: can  $\beta AR$  antagonist be inotropic drugs,"* Singapore, November 1, 2000
- 2000 Invited Speaker, Duke-Washington Women's Forum, *"Visiting investigator at the human genome project,"* Washington, DC, December 7, 2000
- 2001 Invited Speaker, Urology Summit Meeting: Latest Issues in LUTS, *"Potential role of different  $\alpha_1$ -blockers in LUTS,"* New York, NY, March 17, 2001
- 2001 Invited Speaker, Functional Senescence Meeting sponsored by NIH National Institute on Aging, *"Regulation of adrenergic receptors with aging and diseases of aging,"* Louisville, KY, April 24, 2001
- 2001 Invited Speaker, URO2001, *"Overview on receptor selectivity,"* Santa Barbara, CA, April 27-29, 2001
- 2001 Invited Speaker, Society of Cardiovascular Anesthesiologists, *"The adrenergic receptors in clinical medicine,"* Vancouver, Canada, May 5-9, 2001
- 2001 Invited Speaker, Association of University Anesthesiologists, 48th Annual Meeting, *"Implications of the human genome project for anesthesiology and perioperative medicine,"* Rochester, NY, May 17-20, 2001
- 2001 Invited Speaker, International Association of Cardiothoracic Anaesthetists (IACTA) Meeting, *" $\beta$ -Adrenergic receptors: from the bedside to functional genomics,"* Cambridge, England, June 22, 2001
- 2001 Invited Speaker, BMS Clinical Research Education Course, *"Genetic research and patient confidentiality,"* Duke University, Durham, NC, July 8-12, 2001
- 2001 Invited Speaker, Robert Wood Johnson Medical School, Department of Anesthesia, *"Adrenergic pharmacology in anesthesiology:  $\beta AR$ s as a model of pharmacologic evolution,"* Newark, NJ, October 2, 2001
- 2001 Invited Speaker, American Society of Anesthesiologists, 1st Annual FAER (Foundation for Anesthesia Education & Research) Excellence in Research Lecture, *"Thinking 'out of the box': anesthesia research in the 21st century,"* New Orleans, LA, October 15, 2001
- 2002 Invited Speaker, BPH Regional Speaker Meeting; Boehringer Ingelheim, *"The role of selectivity in  $\alpha$ -blocker therapy,"* Dallas, TX, January 19, 2002
- 2002 Invited Speaker, University of Louisville School of Medicine, *" $\alpha_1$ -Adrenergic receptor modulation with aging" (Department of Physiology & Biophysics), "Thinking 'out of the box': anesthesia research in the 21st century" (Department of Anesthesiology),* Louisville, KY, January 29, 2002
- 2002 Invited Speaker, URO 2002 Opinion Leader Conference, *"Selectivity – an update,"* Southampton, Bermuda, June 13-17, 2002
- 2002 Plenary Speaker, International Society of Anaesthetic Pharmacology (ISAP) Annual Meeting, *"How genomics research will change perioperative pharmacology,"* Orlando, FL, October 11, 2002
- 2002 Invited Speaker, Tsukuba Research Centre, Yamanouchi Pharmaceutical Company, *"Update on  $\alpha_1$ -Adrenergic receptors in LUTS,"* Tsukuba, Japan, October 28, 2002
- 2002 Invited Speaker, Japanese-American IARS Congress, *"Genetics in medicine: how does this revolution in medicine affect anesthesiology?"* Kofu, Japan, October 29 through November 1, 2002
- 2002 Invited Speaker, Advances in Physiology/Pharmacology in Anesthesia and Critical Care Annual Meeting, *" $\beta$ -adrenergic receptors" – Sponsored by Wake Forest University, Greenbier, Lewisburg, WV, November 3-6, 2002*
- 2002 Invited Speaker, Center for the Study of Aging/Geriatric Research, Education & Clinical Center, Duke University Medical Center, *" $\alpha_1$ -adrenergic receptor modulation with aging,"* Durham, NC, November 13, 2002

- 2002 Invited Speaker, 6<sup>th</sup> Annual James E. Eckenhoff Lecture, Department of Anesthesiology, University of Pennsylvania Health System, *"Perioperative genomics in medicine,"* Philadelphia, PA, December 4-5, 2002
- 2002 Invited Speaker, Bentley Forum, *"How 'the new genetics' is affecting medicine,"* Naples, FL, December 9-11, 2002
- 2003 Invited Speaker, URO 2003 Opinion Leader Conference, *"Alpha blocker subtype selectivity,"* Cabo del Sol, Cabo San Lucas, March 14-16, 2003
- 2003 Invited Speaker, Education Advisory Board Program, Association of University Anesthesiologists 50<sup>th</sup> Anniversary Meeting, *"Preventing the extinction of anesthesia research" – NIH Session,* Milwaukee, WI, May 1-3, 2003
- 2003 Invited Speaker, Cornell University Weill Medical College, *"Perioperative genomics and the clinical research"* Grand Rounds Lecture, *"Ways to deal with heart failure in the operating room,"* 3<sup>rd</sup> Year Resident Seminar, New York, NY, June 9, 2003
- 2003 Invited Speaker, Cardiothoracic Update; Division of Cardiothoracic Anesthesiology, Department of Anesthesiology, Duke University Medical Center, *"Genetics of perioperative genomics,"* Hilton Head, SC, June 21-24, 2003
- 2003 Invited Speaker, Brigham & Women's Hospital, Harvard University, *"Genomics: impact on anesthesiology"* Grand Rounds Lecture, Boston, MA, October 1, 2003
- 2003 Invited Speaker, University of California at San Francisco Department of Anesthesiology, *"Demystifying genetic association trials in the perioperative period,"* Grand Rounds Lecture, San Francisco, CA, October 14-15, 2003
- 2003 Invited Speaker, State University of New York at Stony Brook, *"Fostering academic anesthesiology,"* *"Perioperative genomics and the clinical researcher,"* Stony Brook, NY, December 11-12, 2003
- 2004 Invited Speaker, URO 2004 Opinion Leader Conference, *"Update on  $\alpha_1$ -receptors,"* Key Biscayne, FL, March 4-7, 2004.
- 2004 Invited Speaker, Royal College of Anaesthetists, *"What's new in cardiac medication?"* London, England, March 17-18, 2004
- 2004 Invited Speaker, Bentley Forum, *"The new genetics: an update,"* Naples, FL, March 24, 2004
- 2004 Invited Speaker, Texas Heart Institute, *"Perioperative genomics: the new frontier,"* Department of Cardiovascular Anesthesiology Grand Rounds Lecture, Houston TX, May 7, 2004
- 2004 Invited Speaker, Nippon Organon K.K. Scientific Session, American Urological Association (AUA) Annual Meeting, *" $\alpha_1$ -adrenergic receptors and LUTS,"* San Francisco, CA, May 9, 2004
- 2004 Invited Speaker, Department of Anesthesiology, Oregon Health Sciences University, *"Peri-operative genomics,"* Grand Rounds Lecture, Portland, OR, May 10, 2004
- 2004 Invited Speaker, 30<sup>th</sup> Annual Refresher Course in Anesthesiology, Mexican College of Anesthesiologists, *"New advances in receptor pharmacology"* and *"An update on genetics & perioperative patient management,"* Mexico City, Mexico, June 11-12, 2004
- 2004 Invited Speaker, Duke Medical Alumni Association, Duke University Medical Center, *"Preventing extinction of anesthesia research,"* in the *"Preparing for a Career in Academic Medicine,"* Business of Medicine Career Sessions, Durham, NC, September 15, 2004
- 2005 Invited Speaker, Division of Rheumatology and Immunology Research Conference, Duke University Medical Center, *"Stress Response: From Bench to Bedside,"* Durham, NC, April 11, 2005
- 2005 Invited Speaker, Society of Cardiovascular Anesthesiologists 27<sup>th</sup> Annual Meeting & Workshops *"Functional genomics: impact on clinical practice,"* and *"How to get peer-reviewed funding,"* Baltimore, MD, May 14-18, 2005
- 2005 Invited Speaker, Japanese Society of Anesthesiologists 52<sup>nd</sup> Annual Meeting, *"Anesthesiologists in the US and Canada: 2005"* Kobe, Japan, June 2-5, 2005
- 2005 Invited Speaker, University of Virginia Health System, *"Academic medicine"; "perioperative genomics: what does it really mean to me?"* Charlottesville, VA, December 7, 2005
- 2006 Invited Speaker, The Association of Anaesthetists of Great Britain & Ireland, Winter Scientific Meeting, *"Impact of genomic research on drug development and prescribing."* January 13, 2006.
- 2006 Invited Speaker, University of Washington, *"Perioperative Genomics"*, June 7, 2006
- 2006 Invited Speaker, 9<sup>th</sup> Cardiothoracic Regional Update, Hilton Head, SC, *"The epidemic of heart failure: interventions being made,"* June 20, 2006
- 2006 Invited Speaker, Massachusetts General Hospital, Harvard University, Boston, MA, *"Perioperative genomics,"* August 9, 2006
- 2006 Invited Speaker, Cleveland Clinic Foundation, Cleveland, OH, *"Perioperative genomics: translational medicine in action,"* September 18, 2006
- 2006 Invited Speaker, Postgraduate Assembly (PGA) in Anesthesiology, New York City, *"Academic anesthesiology: where are we?"* *"Update on heart failure,"* December 9-10, 2006

- 2007 Invited Speaker, UCLA Distinguished Cardiovascular Lecturer, Los Angeles, CA, "*Perioperative genomics: defining the vulnerable patient*," January 29, 2007
- 2007 Invited Speaker, University of Texas at Galveston, Department of Anesthesiology, Galveston, TX, "*Perioperative genomics: defining the vulnerable patient*," January 31, 2007
- 2007 Invited Speaker, 95<sup>th</sup> Japanese Urological Association, Plenary Lecture: "*Alpha adrenergic receptors and LUTS*," Luncheon Lecture: "*Alpha adrenergic receptors, LUTS & IFIS*," Kobe, Japan, April 16-17, 2007
- 2007 Invited Speaker, European Association of the Cardiothoracic Anaesthesiologists (EACTA), Krakow, Poland, "*Epidemiologic aspects of genetics in anaesthesia*," June 10, 2007
- 2007 Invited Speaker, European Society of Anaesthesia, "*Genetic epidemiology aspects in anaesthesia*," Munich, Germany, June 12, 2007
- 2007 Invited Speaker, American Society of Anesthesiologists (ASA) Celebration of Research, "*Excellence in research award recipient lecture*," San Francisco, CA, October 15, 2007
- 2007 Visiting Professor, Penn State University, Department of Anesthesiology, "*Defining the vulnerable patient*," Hershey, PA, Priestly Lectureship, November 30, 2007
- 2008 Visiting Professor, Washington University, St. Louis, "*Perioperative genomics: defining the vulnerable patient*," St. Louis, MO, February 26 - 27, 2008
- 2008 Plenary Speaker, Association of University Anesthesiologists (AUA) Annual Meeting, "*Passion and fire: building the foundation for academic departments of the future*," Durham, SC, May 17, 2008
- 2008 Visiting Professor, Weill Cornell Medical College, New York, May 19, 2008
- 2008 Invited Speaker, Washington State Society of Anesthesiologist Fall Scientific Meeting, Seattle WA, "*Perioperative genomics*," September 13, 2008
- 2008 Plenary Speaker, First Chinese Anesthesia Forum and the Annual Conference of the Taiwan Society of Anesthesiologists, "*Perioperative genomics*," Taichung Taiwan, September 27, 2008
- 2008 Visiting Professor, Boston Children's Hospital, "*Perioperative genomics: identifying the vulnerable patient*," Boston, MA, October 15, 2008
- 2008 Invited speaker, American Academy of Ophthalmology National Meeting, " *$\alpha_1$ ARs, LUTS, & IFIS*," Atlanta GA, November 10, 2008
- 2009 Invited Speaker, Sonosite Lecture, Society of Pediatric Anesthesia Winter Meeting, Jacksonville FL, "*Genetics and anesthesia: defining the vulnerable patient*," March 22, 2009
- 2009 Visiting Professor, University of Medicine and Dentistry of New Jersey – New Jersey Medical School, "*Perioperative genomics: protecting the vulnerable patient*," Newark, NJ, April 29, 2009
- 2009 Visiting Professor, Johns Hopkins School of Medicine, "*Perioperative genomics: protecting the vulnerable patient*," Baltimore, MD, April 30, 2009
- 2009 Visiting Professor, Stanford University, Stanford CA, "*Genetics & anesthesiology: defining the vulnerable patient*," May 11, 2009
- 2009 Invited Speaker, Society for Education in Anesthesia (SEA) Spring Annual Meeting, Seattle WA, "*Passion & fire: keeping academics safe*," June 5, 2009
- 2009 Visiting Professor, University of New Mexico, Albuquerque NM, "*Perioperative genomics: identifying the vulnerable patient*" & "*Passion and fire: keeping academics strong*," August 21 & 22, 2009
- 2009 Visiting Professor, Emory University, Atlanta GA, "*Perioperative genomics: identifying the vulnerable patient*," November 17, 2009
- 2009 Invited Speaker, Orkin Lectureship, Montefiore Medical Center, New York, NY, "*Perioperative genomics: identifying the vulnerable patient*," December 7, 2009
- 2010 Plenary Speaker, The American Academy of Pain Medicine 2010 Annual Meeting, San Antonio TX, "*Pain genomics*," February 5, 2010
- 2010 Visiting Professor, University of Miami, "*Perioperative genomics: defining the vulnerable patient*," Miami FL, February 24 & 25, 2010
- 2010 Invited Speaker, Walter C. Randall Lecturer in Biomedical Ethics, "*Scientific integrity: positive and negative academic/industry collaboration*," Experimental Biology 2010 Annual Meeting, Anaheim CA, April 27, 2010
- 2010 Visiting Professor, University of Wisconsin – Madison, "*A fresh look at beta receptor physiology & heart failure: how might this info change my clinical practice?*" and "*Genomics & medicine: defining the vulnerable patient*," Madison, WI, November 30-December 1, 2010
- 2011 Invited Speaker, "*Genomics: why do 'similar' patients have different outcomes?*" International Anesthesia Research Society (IARS) Annual Meeting, Vancouver BC, May 21, 2011
- 2011 Visiting Professor, University of Maryland, "*Perioperative genomics: defining the vulnerable patient*," Baltimore, MD, July 7, 2011
- 2011 Visiting Professor, University of Ottawa, "*Perioperative genomics: defining the vulnerable patient*" and "*Vision & perspective in defining anesthesiology's future*," Ottawa, Ontario, Canada, November 9, 2011

- 2011 Visiting Professor, McGill University, “*Perioperative genomics: defining the vulnerable patient*,” Montreal, Quebec, Canada, November 10, 2011
- 2012 Invited Speaker, “*Why do ‘similar’ patients have different outcomes?*” International Anesthesia Research Society (IARS) Annual Meeting, Boston MA, May 19, 2012
- 2012 Invited Speaker, Severinghaus Lecture, “*Genomics & medicine: present & future*,” American Society of Anesthesiologists (ASA) Annual Meeting, Washington DC, October 2012
- 2012 Invited Speaker, “*Genomics in perioperative medicine*,” Canadian Anesthesiologists’ Society (CAS) Annual Meeting, Quebec City, Quebec, June 17, 2012
- 2013 50<sup>th</sup> Anniversary Bernard H. Eliasberg Medal Award lecture, “*Genomics & medicine: present & future*,” Mt. Sinai School of Medicine, New York NY, March 2013
- 2013 Visiting Professor, University of Massachusetts Medical School Women’s History Month Lecture, “*Leadership in the era of health care reform*,” Worcester MA, March 2013
- 2013 Invited Speaker, “*Future of medical student education at CCOM and DMU*,” Iowa Medical Society (IMS) Annual Meeting, Coralville IA, April 2013
- 2013 Invited Speaker, “*Academic medicine & health care reform*,” Medical University of South Carolina, Charleston SC, November 2013
- 2014 Invited Speaker, “*Genetics and anesthesiology: time to pay attention*,” and “*The profession of Anesthesiology*,” Iowa Society of Anesthesiologists (ISA) spring meeting, West Des Moines, IA, April 2014
- 2014 Keynote Speaker, UI Celebration of Excellence and Achievement Amongst Women, Iowa City, IA, April 2014
- 2014 Invited Speaker, “*UI Carver College of Medicine Update*,” Iowa Medical Society Annual Meeting, Des Moines, IA, April 2014
- 2014 Keynote Speaker, UI 15<sup>th</sup> Annual Diversity Catalyst Awards, Iowa City, IA, April 2014
- 2015 International Invited Speaker, “*What do changes in medical education mean for anesthesia?*” “*Patient variability: why do similar patients have different outcomes?*” “*How does the new science of epigenetics affect your practice?*” Australian Society of Anesthesiology, Australia & New Zealand, September 2015
- 2016 Duke University Department of Anesthesiology Academic Evening invited speaker and research award judge, “*An academic career is a marathon, not a sprint*,” Durham, NC, May 2016
- 2017 Invited Speaker, Campus forum, University of Miami Medical School, Miami, FL, February 2017
- 2017 Plenary Speaker, “*Pharmacogenomics in anesthesiology*” in Plenary Session II *Precision medicine: what anesthesiology can contribute*, International Anesthesiology Research Society National Meeting, Washington DC, May 6, 2017
- 2017 Invited Speaker, Campus forum, University of Texas Health Science Center, San Antonio, TX, September 2017
- 2018 Invited Speaker, “*Academic medicine*,” health science center-wide presentation, University of North Texas Health Science Center, Fort Worth, TX, February 2018
- 2018 Invited Speaker, “*Advances in medical education and healthcare: the decade ahead*,” campus-wide presentation, University of Tennessee Health Science Center (Memphis), March 2018
- 2019 Invited Speaker, “*Vision for the future of academic medicine*,” medical campus-wide presentation, University of California, Davis, February 2019
- 2019 Invited Speaker, “*Leadership*,” campus-wide presentation, University of Texas Medical Branch, Galveston, TX, March 2019

#### **NATIONAL / INTERNATIONAL REFRESHER COURSES AND SCIENTIFIC PANELS**

- 1990 “*Genetic engineering and its future implications for anesthesiology*,” Refresher Course Lecture #236, ASA 1990 Annual Meeting, Las Vegas, NV, October 20, 1990
- 1990 “*Molecular biology in cardiovascular research*,” Panel--What is Relevant Anesthesia Research? ASA Annual Meeting, Las Vegas, NV, October 21, 1990
- 1990 “*Molecular basis of adrenergic pharmacology*,” Panel--Scientific Foundations I: Molecular Pharmacology of Adrenergic Receptors, Moderator and Speaker, ASA Annual Meeting, Las Vegas, NV, October 22, 1990
- 1991 “*Molecular biology of adrenoceptors*,” Panel--Signal Transduction by Vascular Adrenergic Receptors: Physiology, Pharmacology, and Molecular Biology, 5th World Congress for Microcirculation, Louisville, KY, September 2, 1991
- 1991 “*Introduction to genetic engineering*,” Panel--Scientific Foundations I: Genetic Engineering and Anesthesiology, Moderator and Speaker, ASA Annual Meeting, San Francisco, CA, October 29, 1991
- 1992 “*Normal cardiac physiology*,” Panel--Cardiovascular Function during Anesthesia and Surgery, Post Graduate Course in Anesthesia (PGA), New York, NY, December 15, 1992

- 1993 *"Distribution of adrenergic receptor subtypes in human tissue,"* Panel--Molecular Biology: Implications for Patient Care, The Society of Critical Care Medicine, 22nd Educational and Scientific Symposium, New York, NY, June 9-13, 1993
- 1994 *"Cardiovascular pharmacology,"* Refresher Course Lecture, International Anesthesia Research Society (IARS), Orlando, FL, March 9, 1994
- 1995 *"Anesthesiology and neurotransmitters: a clinician's view,"* Refresher Course, American Society of Anesthesiology (ASA), Atlanta, GA, October 21, 1995
- 1995 *"Preparing for a research career: a guide to faculty and residents,"* Panel Member, Foundation for Anesthesiology Education and Research (FAER), American Society of Anesthesiologists (ASA) National Meeting, Atlanta, GA, October 24, 1995
- 1996 *"Molecular biology for the anesthesiologist,"* Panel Moderator, American Society of Anesthesiologists, New Orleans, LA, October 18-23, 1996
- 2001 *"The  $\beta$ -adrenergic receptor in cardiac surgery: from bench to bedside,"* Panel- "Perioperative care of the cardiac surgery patient: strategies to reduce adverse outcomes and facilitate recovery," American Heart Association Annual Scientific Session, Anaheim, CA, November 10-13, 2001
- 2003 *"Anesthesia and genetics: why genetics is relevant to the OR anesthesiologists,"* Review Course Lecture, International Anesthesiology Research Society (IARS) 77<sup>th</sup> Clinical & Scientific Congress, New Orleans, LA, March 21-25, 2003
- 2003 *"Frontiers in basic anesthesia research and getting research funded,"* Scientific Panel Moderator, International Anesthesiology Research Society (IARS) 77<sup>th</sup> Clinical & Scientific Congress, New Orleans, LA, March 21-25, 2003
- 2003 *"Genomics in cardiovascular disease,"* Refresher Course Lecture, Society of Cardiovascular Anesthesiologists 25<sup>th</sup> Annual Meeting & Workshops, Miami Beach, FL, April 26-30, 2003
- 2003 *"Cardiovascular risk assessment from provocative testing to genomics,"* Problem Based Learning Discussions Panel Moderator, Society of Cardiovascular Anesthesiologists 25<sup>th</sup> Annual Meeting & Workshops, Miami Beach, FL, April 26-30, 2003
- 2003 *"Myocardial ischemia and infarction: should all cardiac cases need beta blockade?"* Society of Cardiovascular Anesthesiologists 25<sup>th</sup> Annual Meeting & Workshops, Problem Based Learning Discussions, Miami Beach, FL, April 26-30, 2003
- 2003 *"Perioperative breakout session: complex problems during cardiac surgery,"* moderator, Cardiothoracic Update; Division of Cardiothoracic Anesthesiology, Department of Anesthesiology, Duke University Medical Center, Hilton Head, SC, June 21-24, 2003
- 2004 *"Genetics and anesthesiology,"* Tutorial, International Anesthesiology Research Society (IARS) 78<sup>th</sup> Clinical & Scientific Congress, Tampa, FL, March 27-31, 2004
- 2004 *"Choose the right inotrope at the right time,"* moderator, Cardiothoracic Update, Division of Cardiothoracic Anesthesiology, Department of Anesthesiology, Duke University Medical Center, Hilton Head, SC, June 25-28, 2004
- 2004 *"Genetic influences on perioperative outcomes,"* in the Perioperative Genomics & Critical Care Medicine Scientific Session Panel, AHA Scientific Sessions, New Orleans, LA, November 7-10, 2004
- 2005 *"The genetics of patient safety,"* 8<sup>th</sup> America-Japan Anesthesia Congress, Honolulu, HI, March 10-11, 2005
- 2005 *"The clinical researcher,"* Scientific Panel Moderator, International Anesthesiology Research Society (IARS) 79<sup>th</sup> Clinical & Scientific Congress, Honolulu, HI, March 11-15, 2005
- 2005 IARS Research Awards Session, Panel Moderator, International Anesthesiology Research Society (IARS) 79<sup>th</sup> Clinical & Scientific Congress, Honolulu, HI, March 11-15, 2005
- 2006 *"How to get a manuscript published,"* Panel Moderator, International Anesthesiology Research Society (IARS) 80<sup>th</sup> Clinical & Scientific Congress, San Francisco, CA, March 25-28, 2006
- 2006 *"Genetic influences on cardiovascular outcomes,"* Panel Moderator, American Society of Anesthesiology National meeting, Chicago, IL, October 15, 2006
- 2007 *"How to get a manuscript published,"* Panel Moderator, International Anesthesiology Research Society (IARS) 81<sup>th</sup> Clinical & Scientific Congress, Orlando, FL, March 23-27, 2007
- 2007 *"Perioperative genomics and outcomes after cardiac surgery,"* Panel Moderator and Speaker, American Society of Anesthesiology National meeting, San Francisco, CA, October 15, 2007
- 2007 *"How to Succeed as a Physician Scientist,"* Panelist, Clinical Investigator Student Trainee (CIST) Forum, Washington DC, October 25, 2007
- 2007 *"What should a mentor expect from a mentee?"* Panelist, Foundation for Anesthesia Education and Research (FAER) Academy of Research mentors in Anesthesiology Workshop, San Francisco, CA, October 15, 2007
- 2008 *"Membrane biology,"* Panelist, Vasculata 2008, Seattle WA, August 4, 2008



- 2008 *"Subspecialties in anesthesiology certification issues,"* Panelist, Association of Academic Anesthesiology chairs (AAAC) Annual Meeting, San Antonio TX, November 1, 2008
- 2008 *"The clinician ten years hence,"* Panelist, Robertazzi Panel, New York State Society of Anesthesiologists Postgraduate Assembly, New York, December 13, 2008
- 2009 *"Progression through NIH fellowship system,"* Panelist, EAB Session, Part 1 – Fellowship Opportunities for Faculty Career Development in Anesthesiology, Association of University Anesthesiologists (AUA) 56<sup>th</sup> Annual Meeting, Galveston TX, April 3, 2009
- 2009 Cook Leadership Seminar, Panelist, Cook Incorporated, Bloomington IN, April 15-16, 2009
- 2009 *"Clinical forum: perspectives on subspecialty accreditation,"* Panelist, Society of Neurological Anesthesia and Critical Care (SNACC) Annual Meeting, New Orleans LA, October 16, 2009
- 2010 *"Pharmacogenomics of beta blockade: clinical implication"* in the *"Pharmacologic treatment of ischemia with beta blockers"* panel, Panelist, Society of Cardiovascular Anesthesiologists, International Anesthesia Research Society Annual Meeting, Honolulu HI, March 20, 2010
- 2010 *"An update on perioperative genetics-how close are we to having any practical applications?"* Moderator, Association of Cardiac Anesthesiologists Annual Meeting, San Diego, CA, October 17, 2010
- 2011 *"From the human genome project to personal genomics: current state & challenges"* in the *"Disease Biology"* panel, Panelist (with Mihai Podgoreanu, MD), International Society for Anaesthetic Pharmacology (ISAP) Annual Meeting, Chicago IL, October 14, 2011
- 2012 *"Translational medical research and scientific integrity: positive & negative academic/industry relationships"* in the *"Translational medical research"* panel, Panelist, Society for Technology in Anesthesia (STA) Annual Meeting Foundation for Anesthesia Education and Research (FAER) Joint Session, West Palm Beach FL, January 19, 2012
- 2012 *"Molecular medicine and perioperative outcomes"* symposium, Panelist, Canadian Anesthesiologists' Society (CAS) Annual Meeting, Quebec City, Quebec Canada, June 17, 2012
- 2013 *"Advancing the academic health system for the future,"* Panelist, American Association of Medical Colleges (AAMC) Annual Meeting, Philadelphia PA, November 4, 2013
- 2015 *"Educate to transform: the art of developing curious minds,"* Speaker, Presentation to the 2015 Meeting of the Association of the Clinical & Climatic Science, Jacksonville, FL, October 16, 2015
- 2016 *"Preparing physicians to be effective leaders in academic / private sector health care transformation: UI CCOM Health Care Delivery Science & Management distinction track,"* Panelist, Association of Academic Health Centers (AAHC) 2016 National Meeting (meeting focus: academic health centers and the private sector), San Diego, CA, September 22-23, 2016

# **TRAINEES (INCLUDING AWARDS/GRANTS AWARDED DURING TRAINING PERIOD)**

*Alphabetically:*

## **Bauman, Monica (1998-1999)**

- 1999 1st place Medical Student Poster Award, Seventh Annual Academic Evening, Department of Anesthesiology, Duke University Medical Center

## **Bello, Elizabeth A., MD (1993-1996)**

- 1993-1996 Training of Cardiovascular Bioengineers - NIHHLBI (HL07063)
- 1994 Second Annual Academic Evening Abstract Presentation Winner (1st place), Department of Anesthesiology, Duke University Medical Center
- 1996 Annual Scientific Award, Society of Critical Care Medicine (\$1,000) (national award)

## **Bennett-Guerrero, Elliott, MD (1994-1996)**

- 1995 Honorable Mention for Oral Presentation, Third Annual Academic Evening, Department of Anesthesiology, Duke University Medical Center
- 1995 Gulf Atlantic Resident's Conference (First Place oral abstract) (regional award)
- 1995 North Carolina Society of Anesthesiologists (regional award)
- 1995 Society of Cardiovascular Anesthesiologist/Ischemia Research and Education Foundation, Starter Grant Award (\$10,000) (national award)

## **Berkowitz, Daniel E., MD (1991-1993)**

- 1993-1995 FAER/Schering-Plough Anesthesia Research Fellowship (national award)
- 1993 American Society of Anesthesiology Resident Essay Competition Winner (2nd Place) (national award)
- 1993 First Annual Academic Evening Abstract Presentation winner (2nd place), Department of Anesthesiology, Duke University Medical Center

## **Booth, John V., MB, ChB (1996-1997, then 1999-2002)**

- 1999 Society of Cardiovascular Anesthesia (SCA) Resident Research Prize (national award)

- 2001-2003 AHA Mid-Atlantic Region Grant-In-Aid #0151569U, "*Cardiac perioperative genetics and outcomes*" (regional award)
- Brinkley, D. Marshall (1997-2003)**  
1997 Duke University Cancer Center Summer Fellowship, " *$\alpha_1$ AR transcriptional regulation*"
- Chung, Hui-San, MD (2008 – 2009)**  
2008-2009 UW Department of Cardiology, "*Pharmacologic characterization of BAR genetic variants*"
- Gerhardt, Mark, MD, PhD (1997-1999)**  
1997-1999 FAER/SCA-Anesthesia Research Fellowship Grant (national award)  
1998 Integrated Training in Anesthesiology Research (GM08600)
- Harris, Sequita D. (1993)**  
1993 American Heart Association NC High School Summer Fellowship Award (national scholarship)
- Hawrylyshyn, K. Ashley (2001-2004)**  
2001-2002 Howard Hughes Medical Institute (HHMI) Summer Research Fellowship, " *$\alpha_1$ AR splice variants*"  
2003-2005 Independent study student, Duke University, " *$\alpha_1$ AR splice variants*"  
2006 American SOL Anesthesiology Summer Research fellowship, "*Perioperative genomics*"
- Jimenez, John L., MD (1994-1996)**  
1994-1995 1994 Society of Cardiovascular Anesthesiology Research Starter Grant (co-PI) (national award)
- Kleine-Brueggenev, Maren, MD (2010-2012)**  
2010-2012 Personal Grant for Prospective Researchers from the Swiss National Fund, "*Novel Signaling via a Naturally Occurring Human Alpha1-Adrenergic Receptor Genetic Variant: Implications for Cardiovascular Disease*"
- Lacey, John P., MD (1994-1995)**  
1995 Honorable Mention, Resident Poster Presentation, Third Annual Academic Evening, Department of Anesthesiology, Duke University Medical Center
- Lee, Keesoo, PhD (1994-1996)**  
1996 4th Annual Academic Evening 1st place winner, basic science research
- Moretti, Eugene, MD (2003-2005)**  
2003-2005 Foundation for Anesthesia Education & Research (FAER) Research Starter Grant, "*Genetic polymorphisms and their relationship to sepsis in the surgical patient*"
- Muir, Holly, MD (2002-2004)**  
2002-2003 International Anesthesiology Research Society Clinical Scholar Research Award, " *$\beta_2$ -adrenergic receptor genetic polymorphisms: effect on uterine quiescence and preterm delivery*"
- Park, Anna (1993-1995)**  
1995 Howard Hughes Student Fellowship Award (national award)
- Podgoreanu, Mihai, MD (2001-2004)**  
2001 New York Postgraduate Assembly Resident Research Prize (national award)  
2001-2003 AHA Mid-Atlantic Postdoctoral Fellowship Award #0120492U, "*The role of genetic polymorphisms of the  $\beta$ -adrenergic receptors in cardiac surgery outcome*" (regional award)  
2004-2009 Co-PI, NIH R01 #HL075273, "*Genetics of myocardial adverse outcomes/graft failure in CABG (GENE-MAGIC)*"  
2009 Recipient, 2009 ASA Presidential Scholar Award (October 10, 2009) (national award)
- Price, David T., MD (1992-1994)**  
1998-2002 NIH K08 DK02585 (scored top 5%) "*Prostate growth regulation by adrenergic receptors*" (national)
- Price, R. Reyn, PhD (1995-1999)**  
1997-1998 American Society for Pharmacology and Experimental Therapeutics (ASPET) Student Travel Award, awarded to 30 graduate students nationally (national award)
- Stafford-Smith, Mark, MD (1992-1994)**  
1993-1994 B. B. Sankey Research Award (International Anesthesiology Research Society) (national award)  
1994 Second Annual Academic Evening Abstract Presentation Winner (2nd place), Department of Anesthesiology, Duke University Medical Center  
1994 American Society of Anesthesiology Resident Essay Competition winner (2nd place) (national award)

## **MENTORED GRANTS – NATIONAL**

### **DUMC Fellows and Junior Faculty**

- 1998-2001 NIH K08 DK02585, \$545,592 / 5 years, PI = David T. Price, Mentor = Debra A. Schwinn, "*Prostate growth regulation by adrenergic receptors*"

2001-2003	AHA Mid-Atlantic Postdoctoral Fellowship Award #0120492U, \$60,000 / 2 years, PI = Mihai V. Podgorneau, Mentor = Debra A. Schwinn, <i>"The role of genetic polymorphisms of the <math>\beta</math>-adrenergic receptors in cardiac surgery outcome"</i>
2001-2003	AHA Mid-Atlantic Region Grant-In-Aid #0151569U, \$120,000 / 2 years, PI = John V. Booth, Mentor = Debra A. Schwinn, <i>"Cardiac perioperative genetics and outcomes (Cardiac POGO)"</i>
2002-2003	International Anesthesiology Research Society Clinical Scholar Research Award, \$60,000 / 2 years, PI = Holly Muir, Mentor = Debra A. Schwinn, <i>"<math>\beta_2</math>-adrenergic receptor genetic polymorphisms: effect on uterine quiescence and preterm delivery"</i>
2003-2005	Foundation for Anesthesia Education & Research (FAER) Research Starter Grant, \$85,000 / 2 years, PI = Eugene Moretti, Mentor = Debra A. Schwinn, <i>"Genetic polymorphisms and their relationship to sepsis in the surgical patient"</i>
2007-2009	NIH R01 #HL075273, \$2,134,295 / 5 years, PI = Mihai V. Podgoreanu, Mentor = Debra A. Schwinn last 2 years of grant, <i>"Genetics of myocardial adverse outcomes/graft failure in CABG (GENE-MAGIC)"</i>

#### **MEMBER OF PhD STUDENT THESIS COMMITTEES**

Mary Clements, PhD awarded 1996, Department Physiology, University of NC-Chapel Hill  
 Reyn Price, PhD awarded 1999, Department Pharmacology/Cancer Biology, Duke University (committee chair)  
 Jill Zeiders, PhD awarded 1999, Department Pharmacology/Cancer Biology, Duke University  
 Todd Aumen, PhD awarded 2002, Department Pharmacology/Cancer Biology, Duke University  
 Mia C. Defino, MS, awarded 2010, Department of Pharmacology, University of Washington  
 Abigail G. Schindler, PhD, 2012, Department of Pharmacology, University of Washington  
 Pamela S. Gallagher, PhD, 2013, Department of Pharmacology, University of Washington

#### **CURRENT POSITIONS OF PAST SCIENTIFIC TRAINEES (alphabetical – as up to date as known)**

<b>Name</b>	<b>Current Title</b>	<b>Department</b>	<b>Location</b>
Atwell, Darryl MD	Associate Anesthesiologist	Anesthesiology	Prince George's Hospital Center, Cheverly, MD
Bello, Elizabeth MD	Attending Physician	Pediatric Intensivist, Hospital based	Lurie Children's Hospital, Northwestern University Feinberg School Medicine, Chicago, IL
Bennett-Guerrero, Elliott MD	Professor & Vice Chair for Clinical Research, Medical Director for Peri-operative Patient Quality and Safety	Anesthesiology	Stony Brook Medicine, Stony Brook, NY
Berkowitz, Dan MBBCh	Chair	Department of Anesthesiology & Perioperative Medicine	University of Alabama at Birmingham, Birmingham, AL
Biswas, Gopa PhD	Lead Pharmacologist & Reviewer	Pharmacology	Food & Drug Administration (FDA), Bethesda, MD
Gerhardt, Mark MD PhD	Associate Professor with Tenure	Anesthesiology & Pharmacology	Ohio State University Columbus, OH
Kirshbom, Paul M.D.	Chief, Pediatric Heart Surgery	Pediatric Cardiac Surgery	Levine Children's Hospital, Atrium Health
Landolfo, Kevin MD MSc	Professor & Chairman	Cardiothoracic Surgery	Mayo Clinic Florida, Jacksonville, FL
Lee, Keesoo PhD	Professor	Life & Physical Sciences	Lincoln University, Jefferson City, MO
Michelotti, Gregory PhD	Associate Director, Discovery & Translational Services		Metabolon Inc, Chapel Hill, NC
Morris, Daniel P. PhD	Research Assistant Professor	Dept Molecular & Cellular Biology	Kennesaw State University, Kennesaw, GA
Muir, Holly MD	Professor & Chair, Keck SOM, UCLA	Anesthesiology	UCLA, Los Angeles, CA

Name	Current Title	Department	Location
Oganesian, Anush PhD	Research Associate Professor	Anesthesiology	University of Washington, Seattle, WA
Ongjoco, Rita MD	Pediatric Critical Care	Pediatrics	Arlington, MD
Podgoreanu, Mihai MD, FASE	Chief, Division of Cardiothoracic Anesthesiology	Anesthesiology	Duke University Medical Center, Durham, NC
Price, R. Reyn PhD	Principal Investigator	Microbiology	US Army Dental Research Detachment, Medical Services Corps, Fort Sam, Houston, TX ( <i>last known</i> )
Rudner-Hobden, Xiaowen PhD	Assistant Professor of Clinical Research (Retired)	Pulmonary and Critical Care Medicine	LSU Medical School, New Orleans, LA
Schambra, Uta B. PhD	Associate Professor (Tenured, retired)	Anatomy and Cell Biology	East Tennessee State University, Johnson City, TN (Retired)
Stafford-Smith, Mark MD	Professor & Director, Adult Cardiothoracic Anesthesia Critical Care Fellowship, Vice Chair of Education	Anesthesiology	Duke University Medical Center, Durham, NC
Wang, Jenny PhD	Principal Scientist	Pharmaceuticals	Pfizer, Inc., Groton, CT

## **FELLOWS, STUDENTS TRAINED**

### **Post-Doctoral Fellows (PhD):**

1992-1993	Uta B. Schambra, PhD (PhD, Anatomy & Cell Biology, University of North Carolina at Chapel Hill; 1992) " <i><math>\alpha_1</math>AR mRNA distribution in human brain using in situ hybridization</i> "
1993-1995	Jenny Wang, PhD (PhD, Biochemistry, Arizona State, Tempe, AZ; 1993) " <i>Purification of <math>\alpha_1</math>ARs expressed in baculovirus</i> "
1994-1996	Keesoo Lee, PhD (PhD, Microbiology, University of Georgia, Athens, GA; 1994) " <i><math>\alpha_1</math>AR mRNA regulation</i> "
1994-1998	Charlene D. Richardson, PhD (PhD, Medical Biology & Genetics, Texas A&M College of Medicine, College Station, TX; 1994) " <i>Ligand binding specificity of <math>\alpha_1</math>AR subtypes using chimeric/mutagenesis approaches: Development of <math>\alpha_1</math>AR monoclonal antibodies</i> "
1995-1998	Xiaowen (Sharon) Rudner-Hobden, PhD (PhD, Anatomy/Cell Biology, Wayne State University, Detroit, MI; 1992) " <i>mRNA regulation of human <math>\alpha_{1a}</math>ARs and establishment/characterization of stable human prostate smooth muscle cell lines</i> "
1996-1998	Mona Razik, PhD (PhD, University of North Carolina at Chapel Hill, NC; 1996) " <i>Transcriptional regulation of human <math>\alpha_{1a}</math>ARs</i> "
1998-2000	Gregory A. Michelotti, PhD (PhD, Biochemistry, University of South Carolina, Columbia, SC; 1992) " <i>Transcriptional regulation of human <math>\alpha_{1a}</math>-adrenergic receptors</i> "

### **Graduate Students (MA/MS, PhD)**

1995-1999	PhD Student: R. Reyn Price (Pharmacology, Duke University, Durham, NC) " <i>Agonist-induced regulation of human <math>\alpha_{1a}</math>-adrenergic receptors</i> "
2003-2004	MS Student: Michelle Sharpe-Kass (Pharmacology, Duke University, Durham, NC) " <i>Investigations into the role of a naturally occurring <math>\alpha_{1a}</math>-adrenergic receptor SNP on cellular signaling</i> "
2004-2005	MA Student: Rong Hu (Cell Biology [Pharmacology], Duke University, Durham, NC) " <i>Phosphorylation of RNA polymerase II CTD during transcription in rat neonatal cardiomyocytes</i> "
2008	PhD Student: Pamela S. Gallagher (Pharmacology, University of Washington, Seattle, WA) " <i>Expression and purification of GST-3iL (3rd intracellular loop of wild type <math>\alpha_{1a}</math>AR or <math>\alpha_{1a}</math>AR-247R mutant) fusion proteins and their interaction with spinophilin</i> "
2009	PhD Student: Sonya Trejo (Pharmacology, University of Washington, Seattle, WA) " <i>Elucidation of protein-protein interactions in rat-1 cells constitutively expressing wild type <math>\alpha_{1a}</math>AR or <math>\alpha_{1a}</math>AR-247R mutant receptors</i> "

- 2009 PhD Student: Kole Meeker (Pharmacology, University of Washington, Seattle, WA) “*Generation of H9C2 rat cardiomyocyte cell lines with tet-regulated expression of wild type  $\alpha_{1A}$ AR or  $\alpha_{1A}$ AR-247R mutant receptors*”

### **Visiting Graduate Students**

- 1998-1999 Miguel B. Valiente, PhD (PhD, Valencia University) “*Phosphorylation mutants of the human  $\alpha_{1A}$ AR*”  
 2003 MD Student: Christina Heilmaier (University of Essen, Germany; 2005) “*Transcriptional regulation of  $\alpha_1$ -adrenergic receptors: comparative analysis of promoter regions*”  
 2010-2012 Maren Kleine-Brueggeney, MD (MD, University of Bern, Switzerland; 2007) “*Novel signaling via a naturally occurring human  $\alpha_1A$ -adrenergic receptor genetic variant: Implications for cardiovascular disease*” (Island Hospital, Department of Anesthesiology and Pain, Bern, Switzerland)

### **Anesthesiology Fellows**

- 2002-2003 Holly Muir, MD (MD, Dalhousie University, Halifax, NS; 1983) “ *$\beta_2$ -adrenergic receptor genetic polymorphisms: effect on uterine quiescence and preterm delivery*”  
 2003-2005 Eugene Moretti, MD (MD, Temple University School of Medicine, Philadelphia, PA; 1993) “*Genetic polymorphisms and their relationship to sepsis in the surgical patient*”

### **Cardiac Anesthesiology & Critical Care Fellows**

- 1991-1993 Dan E. Berkowitz, MD (MD, University of Witwatersrand Medical School, Johannesburg, SA; 1978) “*Adrenergic receptor mRNA distribution in human tissues ( $\alpha_1$ ARs,  $\alpha_2$ ARs,  $\beta_3$ AR)*”  
 1992-1994 Mark Stafford-Smith, MD (MD, McGill University, Montreal, Quebec; 1983) “ *$\alpha_2$ AR mRNA distribution in human spinal cord using in situ hybridization*”  
 1993-1994 David C. Kramer, MD (MD, Albert Einstein College of Medicine, Bronx, NY; 1984) “*Inotropic effects of T3 in adult patients undergoing valvular heart surgery*”  
 1994-1996 Elliott Bennett-Guerrero, MD (MD, Harvard Medical School, Boston, MA; 1991) “*Inotropic effects of T3 in adult patients undergoing coronary artery bypass surgery*”  
 1994-1996 John L. Jimenez, MD (MD, University of Washington School of Medicine, Seattle, WA; 1991) “*Inotropic effects of T3 in adult patients undergoing valvular heart surgery*”  
 1996-1997 Darryl M. Atwell, MD (MD, Howard University, Washington, DC; 1991) “ *$\alpha_1$ ARs and the immune response*”  
 1996-1997 John V. Booth, MB, ChB (MB, University of Glasgow, Glasgow, Scotland; 1989) “*Regulation of arterial  $\alpha_1$ AR subtypes*”  
 1996-1998 Mark Gerhardt, MD, PhD (MD, University of Michigan, Ann Arbor, MI; 1992) “ *$\beta$ AR desensitization during CPB in valve patients*”  
 1997-1998 Blake Wendelberg, MD (MD, University of Kansas School of Medicine, Kansas City, KS; 1992) “ *$\alpha_1$ AR/G protein-coupling*” and “*Adenylyl cyclase activity during CPB*”  
 1999-2001 Mihai V. Podgoreanu, MD (MD, Carol Davila University of Medicine & Pharmacy, Bucharest, Romania; 1993) “*The role of genetic polymorphisms of the  $\beta_2$ -ARs in cardiac surgery outcomes*”  
 2003-2004 Marek Brzezinski, MD (MD, Westfälische Wilhelms-University, Münster, Germany) “*Determination of proteins and genes responsible for predisposition to atrial fibrillation*”

### **Cardiology Fellows**

- 2006-2008 Aslan Turer, MD (MD, University of California, San Francisco; 2001) “*Perioperative myocardial infarction*”  
 2008 – 2009 Hui-San Chung, MD (MD, Wayne State University, Detroit; 2003) “*Pharmacologic characterization of human  $\beta$ AR genetic variants*”

### **Pediatric Critical Care Fellows**

- 1993-1996 Elizabeth A. Bellow, MD (MD, University of Illinois College of Medicine, Chicago, IL; 1990) “*Endothelin mRNA regulation during hypothermic cardiopulmonary bypass and circulatory arrest (piglet model)*”  
 1996-1998 Rita R. Ongjoco, DO (DO, New York College of Osteopathy, Old Westbury, NY; 1990) “*Adrenergic receptors in pediatric myocardium*”

### **Anesthesiology Residents**

- 1991 William R. Cherry, MD, PhD (PhD, University of Washington, Seattle, WA; 1976/MD, University of Miami, Miami, FL; 1988) “*Effects of desipramine on  $\alpha$ -adrenergic receptors*”

- 2010-2012 Maren Kleine-Brueggeney, MD (MD, University of Bern, Switzerland; 2007) “*Biological effects of  $\alpha_1$ AR SNP in cardiomyocytes cell line*”

### **Surgery Residents**

- 1992 Thomas A. D’Amico, Jr., MD (Cardiovascular-MD, Columbia College of Physicians and Surgeons, Manchester, NY; 1987) “*Myocardial  $\alpha$ AR desensitization during brain death (adult porcine model)*”
- 1992-1994 David T. Price, MD (Urology-MD, Louisiana State University, New Orleans, LA; 1989) “ *$\alpha_1$ AR subtype distribution in human and rat tissues*”
- 1993 David S. Peterseim, MD (Cardiovascular-MD, Washington University, St. Louis, MO; 1988) “*Lack of myocardial  $\beta$ AR desensitization in a piglet model of brain death*”
- 1993-1994 Ravi S. Chari, MD (General-MD, University of Saskatchewan, Canada; 1989) “ *$\alpha_1$ AR subtype distribution in rat tissues*”
- 1994-1995 John P. Lacey, MD (Urology-MD, Medical College of Wisconsin, Milwaukee, WI; 1989) “*Influence of castration on  $\alpha_1$ AR regulation in rat prostate and penis*”
- 1994-1995 Kevin P. Landolfo, MD (Cardiovascular-MD, University of Manitoba, Manitoba, Canada; 1985) “*Desensitization of myocardial  $\beta$ ARs during cardiopulmonary bypass*”
- 1994 Paul M. Kirshbom, MD (General-MD, Johns Hopkins School of Medicine, Baltimore, MD; 1991) “*Pulmonary endothelin and cardiopulmonary bypass*”
- 1996-1997 Brian J. Malloy, MD (Urology-MD, University of Southern California School of Medicine; 1994) “*Bladder  $\alpha_1$ ARs*”
- 1999-2001 Christian Hampel, MD (Urology-MD, University of Mainz, Germany; 1998) “ *$\alpha_1$ AR expression in irritative bladder disease*”

### **Medical Students**

- 1991-1992 Clifford Bowens, JR (MD, Duke University Medical School, Durham, NC; 1993) “*Desensitization of myocardial  $\beta$ ARs during a dog model of cardiopulmonary bypass*”
- 1993-1994 Shona Ferrier (MD, Duke University Medical School, Durham, NC; 1995) “ *$\alpha_1$ AR mRNA distribution in human vessels*”
- 1993-1994 Carol Norton (MD, Duke University Medical School, Durham, NC; 1995) “*Regulation of human myocardial  $\alpha_1$ AR mRNA in heart failure*”
- 1996-1997 Alan Bienstock (MD, Duke University Medical School, Durham, NC; 1998) “*Pain syndromes and vascular  $\alpha_1$ ARs*”
- 1998-1999 Monica Bauman (MD, Duke University Medical School, Durham, NC; 2000) “*Trafficking of  $\alpha_1$ AR subtypes*”
- 2017-2018 Chris Stamy (MHA, University of Iowa College of Public Health, Iowa City, IA; 2018) “3-year medical education in context: one variation in medical education curriculum innovation”
- 2017-2018 Christine Schwartz (MD candidate, University of Iowa Carver College of Medicine, Iowa City, IA; expected 2020) “History of 3-year medical education in the U.S.”

### **Student Nurse Anesthetist**

- 2018-2019 Andrew Sacquitne (sRNA candidate, University of Iowa Health Care) “Perioperative Do Not Resuscitate”

### **Undergraduates (Independent Study Projects)**

- 1991-1992 Niranjana Siva (Duke University [Biology], 1993) “*Intracellular calcium fluxes as a method of evaluating acute  $\alpha_1$ AR desensitization*”
- 1993-1995 Anna Park (Duke University [Biology], 1996) “*Elucidation of amino acids conferring high affinity antagonist binding to the human  $\alpha_{1a}$ AR*”
- 1995-1997 David Eller (Duke University [Biology], 1997) “*Deglycosylation mutants of the human  $\alpha_{1a}$ AR*”
- 1997-1999 Robert Fang (Duke University [Biology], 1999) “*Characterization of the human  $\alpha_{1a}$ AR promoter*”
- 1997-1999 Jonathan Spanier (Duke University [Biology], 1999) “*Modulation of prostate  $\alpha_1$ ARs by age and disease*”
- 1998 Douglas Weiser (College of Wooster, Wooster, OH; 1999) “*Mutations in 3<sup>rd</sup> intracellular loop of the human  $\alpha_{1a}$ AR*”
- 1999 Kristy Schavolt (College of Wooster, Wooster, OH; 2000) “ *$\alpha_{1a}$ AR inverse agonists*”
- 2001-2003 Marshall Brinkley, Jr. (Duke University Independent Study; 2002) “*Characterization of  $\alpha_{1a}$ -adrenergic receptor transcriptional regulation*”
- 2002-2005 Ashley Hawrylyshyn (Duke University Independent Study [Howard Hughes Medical Institute – Pre-Med]; 2005) “ *$\alpha_1$  AR splice variants*”



- 2005-2007 Jessica A. Zinck (Duke University [Biomedical engineering], 2008) “*Cholesterol depletion of lipid rafts and its role in  $\alpha_1AR$  signaling*”
- 2005 Chung-Ling (Julie) Yu (Duke University Independent Study [biology & economics] 2007) – Pre-Med; “*Lipid raft-mediated regulation of wild-type and genetic variants of  $\alpha_{1a}$ -adrenergic receptors: a role for regulators of G protein signaling (RGS) proteins*”
- 2009 Irina Darbinyan (University of Washington Independent Study [biology] 2009) “*Generation of H9C2 rat cardiomyocyte cell lines with tet-regulated expression of WT  $\alpha_{1a}AR$  or  $\alpha_{1a}AR$ -247R mutant receptors*”

**High School Students**

- 1993 Sequita Harris (Northampton HS – Conway, NC) “*Tamsulosin binding to mammalian  $\alpha_1AR$  subtypes*”
- 1997 D. Marshall Brinkley (Cancer Center Summer Program) “ *$\alpha_{1d}AR$  transcriptional regulation*”

**CLINICAL SUMMARY**

During my career, I spent 21 years with the cardiothoracic anesthesiology faculty team providing patient care (20% overall effort plus night/weekend call) at Duke University Medical Center. This was followed by 5 years of general anesthesiology practice at Puget Sound Veterans’ Administration (VA) Hospital (20% overall effort), Harborview Medical Center (a major trauma center), and the University of Washington Medical Center. As UI CCOM Dean and Associate VPMA, I practiced general anesthesiology 2 half-days each month at UIHC (general O.R.) and have privileges at the Iowa City VA Hospital. Over the last year, I returned to more regular (several days/week) clinical practice along with my other duties in order to help during a period of shortage in our clinical faculty at UIHC.

**NATIONAL MEDICAL LICENSURE**

- 1984-Present Diplomat of the National Board of Medical Examiners, #285601 (July 2, 1984) (*valid indefinitely*)
- Examination Part I -- passed June 1981
  - Examination Part II -- passed September 1982
  - Examination Part III -- passed March 7, 1984
- 1986-Present National DEA Registration, #XXXXXXX0 (1986) (valid through February 28, 2020)

**STATE MEDICAL LICENSURE**

- 1984-Present Pennsylvania, #MDXXXXX2E (valid through December 31, 2020)
- 1986-Present North Carolina, #XXXXX8 (valid through September 22, 2020)
- 2007-Present Washington, #MDXXXXXX9 (valid through September 22, 2021)
- 2012-Present Iowa #XXXXX3 (valid through September 1, 2021)
- 2012-Present Iowa DEA (CSA), #XXXXXXX4 (valid through February 28, 2020)

**VETERANS ADMINISTRATION (VA) HOSPITAL PRIVILEGES\***

- 2008-2014 Puget Sound VA Hospital (VA privileges continued through 2014, even though I moved to Iowa in 2012)
- 2014-Present Iowa City VA Hospital (currently privileges valid through November, 2020)

\*Note: VA hospital privileges are transferrable to any VA in the United States

**ANESTHESIOLOGY CERTIFICATION**

- 1988-Present **Diplomat of the American Board of Anesthesiology** #3583-8080, certificate #15415 (April 22, 1988)
- Written Board Exam, passed July 1986
  - Oral Board Exam, passed April 22, 1988
  - No recertification required
- 2006-Present Registered to practice medicine in the United Kingdom (General Medical Council)
- Certificate of full registration as a medical practitioner with specialist registration (Cardiac Anaesthesia), GMC Reference #6139033, Date of Entry: 9 January 2006
  - Grade: Any including honorary, substantive or fixed term consultant in the NHS
  - Note: Continuing registration 2009-present, however did not add new licensure for UK practice

**AMERICAN HEART ASSOCIATION CERTIFICATION (OR EQUIVALENT)**

- 1986-2021 Basic Life Support Provider (valid through June 2021)
- 1987-2021 Advanced Cardiac Life Support Provider (valid through April 2021)
- 1987-1999 Basic Life Support Instructor
- 1987-1999 Advanced Cardiac Life Support Instructor
- 2009-2011 Pediatric Advanced Life Support Provider

2011-2014 UW Acute Assessment & Management of Pediatric Trauma certified (PALS equivalent, valid thru 6/2014)

#### **OTHER LICENSES & TRAINING**

1989-2007 North Carolina Physician Privilege License # 200000696974  
1992-2007 Duke University Radionucleotide License #MC-441 (laboratory PI license)  
2007-2012 University of Washington Radiation Safety Certified (AUI# 1271)  
2007-Present University of Washington & University of Iowa Clinical Research & HIPAA training modules

#### **ANESTHESIA EXPERIENCE IN UNDER-RESOURCED ENVIRONMENTS**

1987 Anesthesiologist, Sabana Grande de Boya, Dominican Republic, Christian Medical & Dental Society, June 6-20, 1987

### **ADMINISTRATIVE LEADERSHIP / COMMITTEES / BUSINESS SUMMARY**

#### **ASSOCIATE VICE PRESIDENT FOR MEDICAL AFFAIRS (VPMA), 2016-2019**

University of Iowa Health Care, Iowa City, IA

- Investigate and advise UI leadership on strategies for innovation in 2 major areas:
  - Education innovation (e.g. pros/cons of 3-year medical school and individualization of medical education)
  - Clinical cultural integration issues (e.g. merging previously disparate physician groups into one team: community physician and academic faculty working together in integrated health care systems & faculty practice plan)
- Students (undergraduate, MD/DO, MHA) have been proactively incorporated in all research team projects

#### **DEAN, UNIV IOWA ROY J & LUCILLE A CARVER COLLEGE OF MEDICINE (CCOM), 2012-2016**

**Oversight:** All UI CCOM research, education & clinical (including UI Physicians faculty practice plan)

**Environment:** UI CCOM is integrated within Iowa's only comprehensive academic medical center

- 1128 faculty, 650+ medical students
- Integrated partnership with the University of Iowa Hospitals and Clinics (750+ inpatient beds, adult & pediatric)
- UI Health Care, >12,000 employees

***During the years Debra A. Schwinn served as UI CCOM Dean, the following was accomplished through a great team of recruited leaders:***

#### **FINANCIAL**

- ***UI CCOM revenue grew 16%*** (FY12 \$604M to FY15 \$701M)
- FY15: UI Health Care \$1.93 Billion enterprise: UIHC \$1.23 Billion, UI CCOM (≈1100 faculty) \$701 Million

#### **CLINICAL**

***Transformed UI Physicians group (UIP) into a fiscally sound, vibrant faculty group practice***

- Fiscal stabilization: Moved from loss -\$5M/year in 2013 to gain of >\$14M/year by 2015
- Establishment of UIP as a true group practice with vastly improved key performance indicators
- Federal support for Medicaid supplemental payments obtained

#### **EDUCATION**

***Implemented a novel, innovative, and iterative mechanisms-based "New Horizons" medical school curriculum***

- Fully implemented new curriculum, fall semester 2014 incoming class
- ***Continued and enhanced strong science training for MD and PhD students***
- Created new umbrella PhD program in Biomedical Sciences with sub-tracks for specific areas of study
- MSTP (MD-PhD) program renewed 2015, new grants to enhance diversity in PhD & MD/PhD programs

#### **RESEARCH**

**\$154.4 million competitive external research awards to UI CCOM in FY15 (\$269.9 total research funding to UI CCOM in FY15, official Vice President for Research final assignment)**

**Set strategic research priorities:** 5 major translational research programs identified

**Research funding stabilized:** NIH funding *increased* (1<sup>st</sup> half FY16) by \$13.8M over FY15, reversing 7-yr trend of declining awards.

**Recruited Key Research Leaders**

- Diabetes Center Director: Dale Abel, MD, PhD (Utah), 2013; elected to NAM, 2015
- Neuroscience Institute Director search ongoing (2<sup>nd</sup> visits); external review, Jan 2015
- 2 Howard Hughes Investigators renewed, 2015

**Several new major national research grants awarded and/or renewed (not inclusive)**

- Renewed: ICTS (CTSA), Wellstone Muscular Dystrophy Center, Holden Comprehensive Cancer Center
- New: AHA Hypertension Center (1 of 4 nationally), NCI SPORE grant to study neuroendocrine tumors (only one nationally), CDC Prevention Epicenter grant on health care worker safety (1 of 6 new centers)

**Innovative faculty renewal program implemented for mid-career faculty**

**New biomedical research building opened (Pappajohn Biomedical Discovery Building)**

**Major successes in research philanthropy (collaborative effort with VPMA, UI Foundation, and faculty)**

## ACADEMIC AFFAIRS

**6 Chairs hired:** Anesthesia, Cardiac Surgery, Internal Medicine, Orthopedic Surgery, Pathology, Radiology

**Dean's office leaders hired:** Executive Dean, Vice Dean for Clinical Affairs, Assoc Dean for Graduate & Postdoctoral Studies, UIP Director, UIP COO, Director for Facilities Planning & Management

**Successful launch of programs to enhance cultural competency and diversity**

**Enhanced faculty engagement in Dean's office:** Established formal Vice Dean faculty advisory groups

## PHILANTHROPIC SUPPORT

- Led UI CCOM during achievement of UI Health Care's \$340 million in campaign fundraising, toward total goal of \$700 million
- 2012-2016: Key role in cultivating 4 significant gifts (\$20M): \$15M bequest to establish deanship and several chairs; \$2 million for informatics chair; \$2M for chair/gift to children's hospital, \$1M international medical student rotations

## CHAIR: DEPT OF ANESTHESIOLOGY & PAIN MEDICINE, UNIV WASHINGTON, 2007-2012

- **Clinical service:** Responsible for all anesthesiology clinical services at 4 main teaching hospitals (University of Washington Medical Center, Harborview Medical Center (regional trauma center), Puget Sound VA Hospital, Seattle Children's Hospital), plus selected anesthesiology services at affiliates (Northwest Hospital); total >1400 beds
- **Moved department from #22 in NIH funding in 2007 to #3 in 2011 (UW + Seattle Children's together)**
- Doubled faculty size in 5 years (2007-2012; recruited ≈100 faculty; original department had 83 faculty, 190 by 2012)
- Built leadership infrastructure for faculty (matrix leadership: academic vice chairs & clinical hospital chiefs) and staff to support larger department
- Education growth and success: Residency and ACGME fellowship programs increased and non-ACGME academic fellowships created
  - Developed 4-year integrated anesthesiology residency program (added medical internship to all residency positions)
  - Increased size of 4-year residency from n=21/entering class in 2007 to n=28/entering class in 2012
  - Increased size of ACGME fellowships (cardiothoracic anesthesiology, ICU medicine, pain medicine, pediatric anesthesiology from n=11, 2007 to n=18, 2011-2012; added new palliative care and sleep medicine fellowships)
  - Created and increased academic faculty/fellowships (n=5 2007 to n=15 2011-2012)
  - **Awarded 5-year renewal (max possible) for main residency program, and all 4 ACGME fellowships, 2011**
- **Philanthropy increased** 6.5-fold 2007 to 2011 (\$280,548/yr 2007 to \$1.82 million/yr 2011); 2 new endowed professorships donated 2011; endowed chairs/professors in department increased from n=2 in 2007 to n=10 in 2012
- **Successful diversity efforts** (residency program 4% under-represented minorities 2007 to 21% entering classes for 2010, 2011)
- **Created 2 university-wide interdisciplinary centers:** Mitochondria & Metabolism Center (based at South Lake Union campus), interdisciplinary Center for Pain Relief (based at Roosevelt, UWMC but with sites across UW Medicine, telemedicine sites across WWAMI [metrics/outcomes-based care])
- **Strong faculty productivity** (above mean for national clinical productivity metrics), strong academic output in publications and grants; program created with electronic anesthesia records to save \$\$, ensure billing attestations, and meet SCIP and PQRI measures 100% (e.g. antibiotics on time, temperature management, CVP barrier max)

**MAJOR ADMINISTRATIVE POSITIONS—DUKE UNIVERSITY**

1992-2007	Director, Molecular Pharmacology Laboratories, Dept. of Anesthesiology, DUMC, Durham, NC
2001-2005	Director, Perioperative Genomics, DUMC, Durham, NC
2001-2005	Vice-Chairman for Research, Department of Anesthesiology, DUMC, Durham, NC
2001-2005	Chair, 3 <sup>rd</sup> Year Medical Student Curriculum (research year), Duke Medical School, Durham, NC
2003-2004	Leadership team, creation of new Duke University/Singapore Graduate Medical School, Singapore
2005-2007	Program Director for Cardiovascular Genomics, Center for Genomic Medicine, Duke University Institute for Genome Sciences & Policy, Durham, NC

**COMMITTEES – DUKE UNIVERSITY DEPARTMENT OF ANESTHESIOLOGY**

1990-1994	Cardiac Anesthesia Resident Education, Department of Anesthesiology
1991-1994	Departmental Planning Committee, Department of Anesthesiology
1991-1999	Research Committee, Department of Anesthesiology
1991-2007	Finance Committee, Department of Anesthesiology
1991-2007	Director, Molecular Pharmacology Laboratory, Department of Anesthesiology
1992-2007	Member, Finance & Budgeting Subcommittee, Research Committee, Department of Anesthesiology
1992-2007	Member, Committee for the Evaluation of Potential Faculty, Department of Anesthesiology
1995-2007	Appointments, Promotion and Tenure Committee, Department of Anesthesiology
1996-1998	5-Year Planning Task Force, Department of Anesthesiology
1999-2007	Executive Committee, Department of Anesthesiology
1999-2007	Chair, Research Committee, Department of Anesthesiology

**INTER-DEPARTMENTAL FACULTIES/MEMBERSHIP--DUKE UNIVERSITY**

1989-2007	Member, Heart Center Faculty
1993-2007	Member, Cancer Center Faculty
1993-2007	Pharmacology Training Grant Faculty
1993-2007	Graduate Faculty, Department of Pharmacology/Cancer Biology
1993-2007	Graduate Faculty, University Program in Cell and Molecular Biology
1995-2007	Faculty, Anesthesiology Training Grant
1997-2007	Member, Vascular Biology Research Center
2000-2007	Faculty, Cardiology Training Grant
2001-2007	Head, Perioperative Genomics Research Group, Department of Anesthesiology, DUMC
2005-2007	Program Director for Cardiovascular Genomics, Duke Institute for Genome Sciences & Policy

**INTER-DEPARTMENTAL FACULTIES/MEMBERSHIP—UNIVERSITY OF WASHINGTON**

2007-2012	Full Member, Molecular and Cell Biology Graduate Program Faculty, UW
2007-2012	Graduate faculty, Department of Pharmacology, UW
2008-2012	Member, Institute of Translational Health Sciences
2009-2012	Member, Northwest Institute of Genetic Medicine

**COMMITTEES – DUKE HOSPITAL / MEDICAL CENTER / SCHOOL OF MEDICINE**

1992-1993	Hospital Ethics Committee, DUMC
1992-2000	Duke Heart Center Awards Committee, DUMC
1993	Policy Subcommittee of the Hospital Ethics Committee, DUMC
1993	Committee to Select the Head of the Clinical Research Unit, DUMC
1994	Member, Search Committee for Head of Duke GCRC
1994-2000	Research Committee, Duke Heart Center, DUMC
1994-2002	Head, Education Committee, Duke Heart Center, DUMC
1994-2002	Strategic Planning Committee, Duke Heart Center, DUMC
1996-2002	Head, Heart Center Education Committee, DUMC
1996-2000	Medical Student Training Grant Advisory Committee, DUMC
1999-2007	Member, Institutional Biosafety Committee, DUMC
1999-2007	Member, Clinical Task Force, DUMC
1999-2007	Member, Center for Ethics and Humanities, DUMC
1999	Member, Search Committee for the Vice Dean of Medical Education, Duke Medical School
1999-2000	Member, 75th Anniversary Committee, Duke University
1999-2000	Member, Search Committee for Chairman of Cell Biology, DUMC
2000-2007	AAMC Women in Medicine Liaison (with Ann Brown, MD), DUMC

2000-2007	Member, Awards Committee, Medical Alumni Assoc./School of Medicine, DUMC
2001-2007	Member, Cath Lab Genetics Operations Committee, DUMC
2001-2005	Chair, 3 <sup>rd</sup> Year Medical Student Curriculum Committee (research year), Duke Medical School
2001-2002	Member, Search Committee for Chairman of Surgery, DUMC
2002-2007	Member, Advisory Board to Duke Institutional Review Board (IRB), DUMC
2003-2004	Chair, Search Committee for Chief of Division of Cardiology, Department of Medicine, DUMC
2004-2007	Member, Advisory Committee on Distinguished Professorships, Duke University
2006 -2007	Member, GELP Steering Committee, Duke Medical Center

#### **COMMITTEES – UNIVERSITY OF WASHINGTON / SCHOOL OF MEDICINE**

2007-2010	Member, Clinical Management Committee, UW School of Medicine
2007-2012	Member, Medical School Executive Committee (MSEC), UW School of Medicine
2007-2012	Member, University of Washington Physicians (UWP) Board of Trustees
2007-2012	Member, Institute for Simulation and Interprofessional Studies (ISIS) Board, UW School of Medicine
2007-2012	Member, Surgical Services Steering Committee, UW School of Medicine
2008	Member, Review Committee (Department of Surgery Chair, Carlos A. Pellegrini, MD), UW School of Medicine
2008-2012	Member, UWP Finance & Audit Committee
2008-2012	Member, Appointments and Promotions Committee, UW School of Medicine
2008-2012	Member, Quality and Patient Safety Executive Committee, UW School of Medicine
2008-2012	Member, Neuroscience Oversight Committee, UW School of Medicine
2010-2011	Member, Diversity Subcommittee, UW School of Medicine
2011-2012	Chair, UWP Finance & Audit Committee
2011-2012	Member, Full Time Clinical Faculty Task Force, UW School of Medicine
2012-2012	Member, Center for Equity, Diversity, and Inclusion (CEDI) Executive Steering Committee, UW School of Medicine
2012-2012	Member, Diversity Strategic Planning Committee, UW Medicine

#### **COMMITTEES – UNIVERSITY OF IOWA ROY J. AND LUCILLE A. CARVER COLLEGE OF MEDICINE**

2012-2016	Chair, University of Iowa Physicians (UIP) Board of Trustees
2012-2016	Chair, Medical Council (all chairs and center/institute directors)
2012-2016	Chair, Board of Directors, Iowa Medical Mutual Insurance Company (IMMIC)
2012-2016	Member, Hospital Advisory Committee/Integrating Clinical Excellence monthly meetings
2012-2016	Member, Board of Trustees, Heart & Vascular Center
2012-2016	Member, Board of Trustees, Cardiovascular Research Center
2012-2016	Member, CCOM Informatics Advisory Team
2012-2016	Member, Board of Directors, Des Moines Area Medical Education Consortium, Inc.
2012-2016	Preside over VA/UIHC/CCOM monthly meeting
2014-2016	Member, University of Iowa Health Network Steering Committee
2014-2016	Member, eHealth + eNovation Center Executive Advisory Group
2017-Present	Co-Director, Women in Anesthesia committee and support group, UI Health Care
2018-Present	Member, Department of Anesthesia Faculty Evaluation Committee

#### **COMMITTEES – UNIVERSITY OF IOWA**

2012-2016	Member, Council of Deans
2012-2016	Member, Vice President of Medical Affairs Cabinet
2012-2016	Member, Board of Trustees, Pappajohn Entrepreneurial Center, College of Business

#### **COMMITTEES – STATE / NATIONAL (non-NIH)**

1992-1994	American Heart Association, North Carolina Affiliate Research Committee
1993-1994	Subcommittee on Experimental Neuroscience and Biochemistry and Experimental Circulation, American Society of Anesthesiology
1993-2000	Committee on Research (national research review committee), American Society of Anesthesiologists
1995-1996	Chairman, Subcommittee on Experimental Neuroscience, American Society of Anesthesiologists
1995-1998	Vice Chairman, Ethics Committee, Society of Cardiovascular Anesthesiologists
1995-1998	Scientific Advisory Board, Association of University Anesthesiologists
1996-1997	Nomination Committee, Association of University Anesthesiologists
1997-1999	FDA Committee on Anesthesia and Respiratory Therapy Devices

1998-2000	International Anesthesiology Research Society Frontiers in Anesthesia Award Review Committee
2001	Secretary/Treasurer, Association of Cardiac Anesthesiologists (ACA)
2001-2002	Adjunct Member, 2002 Committee on Research, American Society of Anesthesiology (ASA)
2001-2004	Society of Cardiovascular Anesthesiologist's Scientific Program Committee
2001-2002	Councilor (Executive Committee), Association of University Anesthesiologists (AUA)
2001-2004	Member, Cardiopulmonary & Critical Care Council, American Heart Association (official liaison for the Society of Cardiovascular Anesthesiologists)
2001-2004	Member, Council on Pulmonary and Critical Care (CPCC), Scientific Council Leadership Committee, American Heart Association (AHA)
2002	Vice-President, Association of Cardiovascular Anesthesiologists (ACA)
2002-2004	Member, Functional Genomics Steering Committee, American Heart Association (AHA)
2002-Present	Member, Foundation for Anesthesia Education & Research (FAER) Advisory Board
2002-2014	Member, Board of Trustees, International Anesthesiology Research Society (IARS)
2003	President, Association for Cardiovascular Anesthesiologists (ACA)
2003-2005	Abstract Reviewer, American Heart Association's (AHA) Committee on Scientific Sessions Program
2004-2007	Member, Committee on Academic Anesthesiology, American Society of Anesthesiologists (ASA) – Chaired by Dr. Alan Sessler
2004-2007	Member, Advisory Board for the Seeding Postdoctoral Innovators in Research and Education (SPIRE) Postdoctoral Training Program, University of North Carolina at Chapel Hill
2004-2005	Member, Membership, Marketing, & Communications Committee, American Heart Association (AHA)
2004-2010	Member then Chair, Scientific Board of the Stanley Sarnoff Endowment
2005-2006	Member, Scientific Advisory Board, National Academy of Perioperative Echocardiography (NAPE)
2005-2009	Membership Committee, IOM, Co-Chair, Section 6 (2005-2007), Chair Section 6 (2007-2009)
2006-2008	Member, Steering Committee, Genome Ethics, Law, and Policy (GELP), Duke Institute for Genome Sciences & Policy
2007-2010	Member, American Society of Anesthesiologists (ASA) Committee on Excellence in Research
2007-2008	Council Member, Associate of Anesthesiology Academic Chairs
2007-2010	Member, Association of Anesthesiology Program Directors (AAPD) Council
2007-2013	Member, American Society of Anesthesiologists (ASA) Committee on Academic Anesthesiology
2008-2013	Member, Development Committee of the Stanley Sarnoff Endowment
2009-2012	Member, Executive Committee of the Stanley Sarnoff Endowment
2010	Member, Review Committee, Jefferson Medical College Department of Anesthesiology
2009-2011	Vice Chair, Board of Directors of the Sarnoff Cardiovascular Research Foundation
2011-2012	Chair, Board of Directors of the Sarnoff Cardiovascular Research Foundation
2012	Head, Governance Committee, Sarnoff Cardiovascular Research Foundation
2012-2014	Chair, Board of Directors of the International Anesthesia Research Society (IARS)
2012-Present	Member, Clinical Research Forum (CRF) (national organization that provides clinical research support)
2018-Present	Member, Admissions Committee, Executive Leadership in Academic Medicine (ELAM) for women
2018-Present	Member, Host Institution Application Review Committee, American Society for Anesthesiology (ASA) Foundation for Anesthesia Education & Research (FAER) Medical Student Anesthesia Research Fellowship (MSARF) summer program

#### **BUSINESS ADMINISTRATION EXPERIENCE**

1991-2001	Member, Finance Committee, Department of Anesthesiology, DUMC (budget ≈ \$22 million/year)
1992-2007	Director, Molecular Pharmacology Laboratories, Department of Anesthesiology, DUMC (budget ≈ \$750,000/year)
1992-1995	<i>de facto</i> Head of Research, Department of Anesthesiology, DUMC; department moved from 22 <sup>nd</sup> to top 5 in NIH funding in the U.S.
1995-2000	Assisted David Warner, MD as Head of Research, Department of Anesthesiology, DUMC; department moved to top 3 in NIH funding in U.S.
1998-1999	Member, 1999 Class of National Fellows, Executive Leadership in Academic Medicine (ELAM); formal training in academic health systems administration for senior women in medicine (nominated by Ralph Snyderman, CEO Duke Health Systems)
2000-2003	Presentations to potential donors for Duke development staff (NYC Duke University Women's Studies Alumni Symposium, 2000; Duke-Washington Women's Forum, 2000; DUMC development staff, 2001; Naples, FL, 2003)
2001-2005	Vice-Chairman for Research, Department of Anesthesiology, DUMC (budget ≈ \$1 million/year), moved to #1 in NIH funding for anesthesiology departments



2001-2005	Head, 3 <sup>rd</sup> year medical school (research year) curriculum; duties include budgeting for overhaul of the 3 <sup>rd</sup> year curriculum (budget $\approx$ \$4 million/year, half voluntary)
2001-2003	Secretary/Treasurer (2001), Vice President (2002), President (2003), Association of Cardiac Anesthesiologists
2002	Help design several overarching 2-year Master's Degree Programs to be awarded through Duke University Medical Center in order to rigorously educate physician scientists (with Bill Wilkinson, PhD and Howard Rockman, MD), including financial revenue/expense streams
2003	Duke University 3 <sup>rd</sup> Year (Research) Medical School Budget Plan and Negotiations
2003-2005	Leadership team member, Duke University/Singapore Graduate Medical School Planning group (designing Duke's new medical school in Singapore from "ground up," > \$50 million annual enterprise at steady state for 50 students per year, additional budget for start-up)
2008-2012	Member, University of Washington Physicians (UWP), Finance & Audit Committee
2011-2012	Chair, University of Washington Physicians (UWP), Finance & Audit Committee
2012-2016	Chair, Board of Directors, Iowa Medical Mutual Insurance Company (IMMIC)
2012-2016	Chair, University of Iowa Physicians (UIP) Board of Trustees Practice Plan
2012-2016	Dean, Roy J. & Lucille A. Carver College of Medicine, Univ. Iowa, Iowa City, IA (\$620 million budget, grew to \$701M in FY16)
2016-2019	Associate Vice President for Medical Affairs, University of Iowa Health Care

### **PATENTS COMPLETE**

2000	US Patent, #USP 6,921,773, "Use of $\alpha$ -1AR subtype-selective drugs in patients with acute myocardial infarction"
2008	US Patent, #USP 7,439,019, "Methods of identifying individuals at risk of perioperative bleeding, renal dysfunction, or stroke"
2009	Australian Patent, #2004203427 "Method of treating bladder and lower urinary tract symptoms"
2009	US Patent, #USP 7,592,141, "Methods and compositions for identifying individuals at reduced risk of sepsis"
2010	US Patent, #USP 7,858,312, "Method of treating bladder and lower urinary tract symptoms,"
2012	US Patent, #USP 8,187,807 B2, "Methods of Identifying Individuals at Risk of Perioperative Bleeding, Renal Dysfunction or Stroke"

### **BOARD OF TRUSTEES / BOARD OF DIRECTORS (NATIONAL)**

2002-2014	Member, Board of Trustees, International Anesthesiology Research Society (IARS)
2004-2005	American Heart Association Board of Director's Committee (Membership, Marketing, and Communications)
2004-2007	Alumni Trustee (Alumni Board & Board of Trustees), The College of Wooster, Wooster, OH
2004-2010	Member & Chair, Scientific Board, Stanley Sarnoff Cardiovascular Endowment
2006	Member, Search Committee for the President of the College of Wooster, Wooster, OH
2007-2012	Member, Board of Trustees, University of Washington Physicians (UWP)
2009-2013	Member, Executive Board, Stanley Sarnoff Cardiovascular Endowment
2011-2012	Chair, Board of Directors of the Stanley Sarnoff Cardiovascular Endowment
2012-2013	Chair, Board of Trustees, International Anesthesiology Research Society (IARS)
2013-2016	Member, Musser-Davis Land Company Board of Directors (land, oil, and gas company in SE Texas)
2017-2018	Founding member, Medical Engineering Advisory Board for University of South Florida – Tampa (USF)

### **VOLUNTEER ACTIVITIES**

- Hospice Volunteer (Iowa City, IA)
- Jazz Improvisation Violin (Iowa City, IA)
- Presbyterian Church Deacon (Durham, NC)
- Rotary Club (Noon Rotary Club, Iowa City, IA)
- Small Home Groups (Pasadena, CA; Philadelphia, PA; Durham, NC; Seattle, WA)
- Stevens Ministry Volunteer (Seattle, WA)

### **PERSONAL INTERESTS**

- Reading, Violin, CrossFit

**My passions include:**

- ***Innovation*** at the intersection of research, education (and clinical) missions
- ***Developing people*** to identify and deeply pursue their passions (at every level of training/practice)

**CONCLUDING REMARKS**

A few concepts and quotes have come in handy during my academic career:

*“No success will be long-lasting unless it is designed to be a win-win for both parties involved.”*

*“It is important to choose to see the glass half full rather than half empty.”*

*“People are our most important asset – always!”*

*“We are here not only to transform the world,  
but also, to be transformed!”*