

CURRICULUM VITAE

Date Prepared: Sept 28, 2020

Name: Kathleen Greive Morgan

Work Address: Human Physiology Program
Sargent College
Boston University
635 Commonwealth Avenue
Boston, MA 02215
Phone: (617)-353-7464
Fax: (617)-353-7567
E-mail: kmorgan@bu.edu

Place of Birth: Dayton, Ohio

Education:

B.S., Chemistry, College of Mount St. Joseph, Cincinnati
Ph.D., Pharmacology, University of Cincinnati, College of Medicine.
Dissertation: Excitation-Contraction Coupling: Effects of Dantrolene and Myotonia

Postdoctoral Training:

Research Fellowships:

1976-1977 Mayo Foundation Fellow, Department of Physiology, Mayo Medical School
1977-1979 Minnesota Heart Fellow, Department of Physiology, Mayo Medical School

Academic Appointments:

1978-1979 Instructor, Department of Physiology, Mayo Medical School
1979-1983 Assistant Professor, Department of Physiology, Mayo Medical School
1981-1983 Assistant Professor, Department of Pharmacology, Mayo Medical School
1981-1983 Associate Consultant, Department of Pharmacology, Mayo Medical School
1983-1986 Assistant Professor of Physiology in Medicine, Department of Medicine, Cardiovascular Division, Harvard Medical School, Beth Israel Hospital
1983-2001 Research Staff, Beth Israel Deaconess Medical Center
1986-2006 Associate Professor of Physiology in Medicine, Department of Medicine, Cardiovascular Division, Harvard Medical School, Beth Israel Deaconess Medical Center
1995-2004 Director & CEO, Boston Biomedical Research Institute

1995-2006 Amelia Peabody Tenured Senior Scientist, Boston Biomedical Research Institute
2006- Tenured Professor Health Sciences Department, Sargent College, Boston University
2006-2015 Chair, Health Sciences Department, Sargent College, Boston University
2007-2013 Adjunct Senior Scientist, Boston Biomedical Research Institute
2010- Member, Whitaker Cardiovascular Institute, BU School of Medicine
2013-2014 Dean *ad interim* College of Health & Rehabilitation Sciences: Sargent College, Boston University
2015-2020 Professor, Molecular Biology, Cell Biology & Biochemistry (MCBB) Program

- 2016- Faculty member, Division of Graduate Medical Sciences (GMS), Boston University School of Medicine
- 2019- Core Member, Center for Multiscale and Translational Mechanobiology (CMTM), Boston University.

Other Professional Positions and Academic Programs:

- 1975 Grass Fellow, Woods Hole Marine Biological Laboratory, Neurophysiology
- 1984-1989 Consultant, University of Virginia Smooth Muscle Program Project
- 1986- Member, Harvard Digestive Diseases Center
- 1988-1989 Organizer, Muscle Seminar Series, Beth Israel Hospital
- 1989-1994 Organizer, Muscle Journal Club, Longwood Medical Area
- 1992-1995 Director, Program in Smooth Muscle Research (PRISM), Department of Medicine, Beth Israel Hospital
- 1992-2000 Consultant, Boston Biomedical Research Institute Program Project grant: Molecular Mechanism of Smooth Muscle Regulation
- 1994-2008 Corporator, Boston Biomedical Research Institute
- 1995-2001 Director & Chief Executive Officer, Boston Biomedical Research Institute
- 1995-2005 Board Member, New England Medical Research Institute, VA Boston Healthcare System
- 1998-2000 External Advisory Committee Member, to Program Project Grant, University of Massachusetts Medical School
- 2005 Interim Board Member, Boston VA Research Institute, VA Boston Healthcare System
- 2006-2007 Expert opinion on patent applications for Acorn Technologies
- 2018 Acting Human Physiology Graduate Program Director
(Summer)

Awards and Honors:

- 1975-1976 Ryan Fellow
- 1977 Sigma Xi, elected to membership
- 1984-1989 American Heart Association Established Investigator
- 1992-1993 Wellcome Visiting Professor in the Basic Medical Sciences
- 1998- Fellow, Cardiovascular Section of the American Physiological Society
- 2004-2006 Honorary Senior Research Fellow in the Medical School, The University of Manchester, Manchester, UK
- 2006-2011 Honorary Faculty Fellow, Faculty of Medical and Human Sciences, The University of Manchester, Manchester, UK
- 2010 Photonics Center Berman Future of Light Prize at Science Day; Doctoral Student: Mehtap Yilmaz
- 2011 Named "an exemplary mentor in the positive development of junior colleagues" in the medical profession by Claremont Graduate University
- 2013 UROP grant, Stephy Qian Qian Lin.
- 2013 Mahesh Lectureship Medical College of Georgia
- 2014 Scholar's Day Award, PhD mentor to Tony Gao, Mechanism of Increased Aortic Stiffness with Aging, as a Biomarker of Cardiovascular Disease
- 2014 Gao et al manuscript "Aging impairs smooth muscle mediated regulation of aortic stiffness: a defect in shock absorption function" chosen for "distinction in scholarship in the AJP: Heart & Circulatory Phys" by APSselect.
- 2015-16 Member, Scientific Advisory Committee for the 12th Mechanisms of Vasodilation (MOVD) Symposium.
- 2016 Dean Franklin lectureship, Dalton Research Institute.

- 2018 Serchuck Award for Best Basic Science given by BU Medical School to Fred Chau, medical student and researcher in the Morgan lab.
2018 2018 BU Medical Campus, Evans Center, IBR Excellent Research Collaborator Award.

Committee Assignments:

International:

- 2000 Thesis Examiner, Victoria University of Technology's Postgraduate Studies Committee, Melbourne, Australia. Ph.D. candidate: Susan Bortolotto
2004 External Thesis Examiner, University of Calgary, Canada. Ph.D. candidate: Mircea Iftinca
2010- Ad Hoc reviewer for Biotechnology and Biological Sciences Council (BBSRC) Research Committee, UK.
2012- Peer Review Committee, Sparks Charity, London, UK.

National and Regional:

- 1983 Member, NIH Workshop on Pulmonary Initiative
1987 Ad Hoc Reviewer, October Meeting of Experimental Cardiovascular Sciences Study Section, NIH
1988-1991 Member of American Heart Association, Massachusetts Affiliate Research Peer Review Committee
1989-1991 Executive Committee, Council on Basic Science, American Heart Association, National Center
1989 NIH Site Visit Committee, NHLBI
1989-1991 Budget Committee, Council on Basic Science, American Heart Association, National Center
1989-1992 Member of American Heart Association, National Research Study Section: Cellular Physiology and Pharmacology
1992-1996 Member of Experimental Cardiovascular Sciences Study Section, NIH DRG
1997 Member, Special Emphasis Panel, NIH
1997 Temporary Member, Cardiovascular Study Section, CVA, NIH DRG
1998 Member, Special Emphasis Panel, NIH
2001-2002 Doctoral Dissertation Committee, Georgetown University, Department of Physiology & Biophysics. Candidate: Terence Woodsome
2001 Co-Organizer, Northeast Smooth Muscle Society Meeting
2004-2007 Ad Hoc Reviewer, NHLBI Board of Scientific Counselors, NIH
2003 Director Review Committee, The John B. Pierce Laboratory, Yale University School of Medicine
2004-2005 Member, AHA Northeast Affiliate NEA 5B (Cell Structure & Function) Peer Review Study Group
2005-2006 Co-Chair, AHA Northeast Affiliate NEA 6 (Cell Structure & Function) Peer Review Study Group
2006-2007 Chair, AHA Northeast Affiliate NEA 6 (Cell Structure & Function) Peer Review Study Group
2006 Ad Hoc Member NIH PN Study Section
2007 Ad Hoc Member NIH PN Study Section
2007-2015 Member, Association of Chairs of Departments of Physiology
2007 Member, Special Review Committee, Program Project Grant Application, NIH HLBP1 Study Section.

- 2009 Member, Special Review Committee, Program Project Grant Application, NIH HLBP1 Study Section
- 2009-2014 Member, External Advisory Committee, P50 O'Brien Urology Research grant, "Bladder Wall Re-modeling in LUTS", University of Pennsylvania, PI Sam Chacko.
- 2012-2018 Member, External Advisory Committee, Phase1 P20 COBRE Grant, "Endothelial Cell Injury", Brown University, PI Sharon Rounds, MD.
- 2015-2016 Member, Scientific Advisory Committee 2016 Mechanisms of Vasodilation Conference, Rochester Mn.
- 2015-2016 Session Chair, International Symposium on Vascular Biology: Back to the Future, BU School of Medicine, Boston USA
- 2016 External reviewer for tenure candidate, Syracuse University.
- 2018- Member, External Advisory Committee, Submitted Phase2 P20 COBRE Grant, "Endothelial Cell Injury", Brown University, PI Sharon Rounds, MD.
- 2020- External reviewer for tenure candidate, University of Iowa, Dr. Gary Pierce.

Local:

- 1983-1995 Committee on Animal Research, Beth Israel Hospital
- 1984-1987 Doctoral Dissertation Committee, Northeastern University, Department of Pharmacology. Candidate: Raju Danthuluri
- 1985-1987 Doctoral Dissertation Committee, MIT, Interdepartmental Bioengineering Program. Candidate: David Israel
- 1985-1987 Doctoral Dissertation Committee, Northeastern University, Department of Pharmacology. Candidate: Michael Campbell
- 1986 MD Thesis Reader, MIT HST MD Candidate: Brian Camazine
- 1986-1988 Search Committee: Hematology-Oncology Division, Department of Medicine, Beth Israel Hospital
- 1986-1989 Research Administration Task Force, Beth Israel Hospital
- 1986-1987 Search Committee: Director of Invasive Electrophysiology, Cardiology Division, Department of Medicine, Beth Israel Hospital
- 1987-1990 Doctoral Dissertation Committee, Harvard Medical School, Physiology Department. Candidate: Panos Papageorgiou, M.D.
- 1987-1991 Doctoral Dissertation Committee, Harvard Medical School, Physiology Department. Candidate: John Pawlowski, M.D.
- 1988 Senior Honors Thesis Reader, Department of Biochemistry and Molecular Biology. Candidate: Christina Graeser
- 1988 MD Honors Thesis Reader, MIT HST MD Candidate: Annabelle Okada
- 1989-1995 Research Laboratory Safety Committee, Beth Israel Hospital
- 1993-1995 Doctoral Dissertation Committee, Northeastern University, Department of Pharmacology. Candidate: Arti Jintsi
- 1995-2006 Data Safety Monitoring Board, bFGF clinical trial, Beth Israel Deaconess Medical Center
- 1995-2001 Boston Biomedical Research Institute Committees: Budget, Finance & Audit; Conflict of Interest; Development; Education; Governance; Investment; Patents & Technology Transfer; Public Relations; and Stewardship
- 1997-2005 Standing Committee on Faculty Fellowships in the Faculty of Medicine, Harvard Medical School
- 1997-2002 Core Faculty, T-32 Harvard-Longwood Research Training in Vascular Surgery
- 1999-2000 Boston Biomedical Research Institute ad hoc Committees: Construction Finance Committee and Facility Construction Committee

1999-2001 Doctoral Dissertation Committee, Brown University, Department of Physiology and Biotechnology. Candidate: Steven An

2000 Capital Campaign Task Force, Boston Biomedical Research Institute

2001-2006 Boston Biomedical Research Institute Education Committee

2002 MD Thesis Reader, MIT HST MD Candidate: Xiaodong Alec Li

2002-2005 PhD Thesis Committee, Tufts University, Sackler School of Biomedical Sciences. Candidate: Stella Markoulaki

2002-2006 Boston Biomedical Research Institute Kresge Cell Biology Core Facility Committee

2004-2006 PhD Thesis Committee, Brown University, Candidate: Hak Rim Kim

2004-2005 Boston Biomedical Research Institute Regenerative/Developmental Biology Faculty Search Committee

2005 Boston Biomedical Research Institute Student Website Project Committee

2005 Boston Biomedical Research Institute-Tufts Education Task Force

2005-2006 Boston Biomedical Research Institute Programmatic Task Force

2006--2009 Member, Integrated Protein Biology focus group, Boston Biomedical Research Institute

2006-2007 Member, Associate Dean Search Committee, Sargent College, Boston University

2006-2017 Member, Academic Advisory Committee, Sargent College.

2006- Participating Faculty Member, Molecular Biology, Cell Biology, and Biochemistry (MCBB) program, Boston University

2007-2008 PhD Thesis Committee, BU Medical School. Candidate: Kristin Park.

2007-2010 PhD Thesis Committee, Biomedical Engineering Department, CRC. Candidate: Corin Williams.

2007-2007 Participating faculty member, MSTP BU MD/PhD training program.

2007-2010 Member of University Research Council

2007 Member, MCBB Advisory Committee

2007- Graduate Admissions Committee, Department of Health Sciences, AAP program

2008-2009 Member, Core Facilities Committee

2007-2013 PhD Thesis Committee, Major Professor, MCBB program, Boston University. Candidate: Mehtap Yilmaz

2008-2010 PhD Thesis Committee, Molecular Medicine Program (special service appointment within Div. of Grad. Med. Sciences). Candidate: Jingmei Zhang.

2008-2013 PhD Thesis Committee, Major Professor, Bioengineering Program, Boston University. Candidate: Bob Saphirstein,

2009-2010 Science and Engineering Day Judge, CRC

2009-2010 MCBB Curriculum Committee, member

2009-2010 Systems Biology & Bioinformatics Coordinating Committee

2009-2011 Member, Search Committee for Chair of Physical Therapy Department

2009-2012 PhD Thesis Committee member, Second Reader, Molecular Medicine Program, Candidate: Alicia Evangelista.

2010-2012 Qualifying exam committee & thesis committee: PhD candidate: Dagmar Haeussler, Molecular Medicine Program.

2010-2012 Member, Boston University Appointment Promotion & Tenure Committee

2010-2013 Member, PhD Qualifying Committee, Brian Honeyman, MD PhD Candidate, Molecular Medicine Program

2012-2015 PhD Thesis committee, Major Professor, Bioengineering Program, Boston University. Candidate: Yuan (Tony) Gao,

2010-2012 Thesis committee member, Carolyn Ritterson Lew, 2nd reader

2009-2010 Co-Director, Aortic Stiffness Pre-ARC, Evans Center

2010-2016 Co-Director, Aortic Stiffness ARC, Evans Center, Department of Medicine

2010-2011 Member, Calcium Pre-ARC, Evans Center

2011-2018 Member, Calcium ARC, Evans Center

2011 Member, Search committee for CAS Associate Dean for Research and Outreach

2011 MCBB recruitment interview committee

2011-2013 Second Reader, PhD candidate: Dagmar Haeussler, Molecular Medicine Program.
2012 CMB Review Committee, Medical Campus
2012 MCBB recruitment interview committee
2013 Member, Steering Committee, Whitaker Institute
2013 Evans Day Judge, Department of Medicine Evans Center
2013- CIRTl Steering Committee
2013- Internal Executive Committee member, T32 "Training Program in Cardiovascular Biology: Pre-Doctoral".
2013-2019 Member, PhD Thesis Committee, Shenja Patterson, Molecular Medicine Program
2013 Member, Council of Deans
2013 Member, University Leaders
2014 Member, Strategic Planning Subcommittee on Research.
2014-2017 Member, Human Physiology Program Outcomes Committee
2014- Member, BU Animal Research Advisory Group
2007- Director of Departmental Research Seminar Series
2015- Member, Animal MRI Core Oversight Committee.
2015-2016 Member, College Appointments, Promotion & Tenure Committee
2015-2016 Chair, Tenure Track Assistant Professor Search Committee, Cardiovascular Scientist
2016 Member of Review Panel for the BU Nutrition & Metabolism Program, Graduate Medical Sciences, BU Medical Campus.
2016- Member, Planning Committee, Interdisciplinary Biomedical Research Office Yearly Symposium, BU IBRO office.
2016- Co-Director Shi Su PhD Committee.
2016-2017 Chair, Comprehensive Examination Committee, Human Physiology Program, Health Sciences Department, Anthony Accorsi.
2016-2019 Second Reader, PhD Thesis Committee, Pharmacology Program BU Medical School, Alissa Frame.
2016-2020 Member, University Committee on Academic Program Review (CAPR).
2017-2020 Member, MCBB Program Committee
2018- Member, BU's BEST Board
2018- Member, Advisory Committee, Research Event planning
2018-2019 Member Pre-Professional Advisory Board
2018—2019 Human Physiology Program, Health Sciences Department, Sargent College Search Committee Member, Clinical Assistant Professor.
2019- Thesis Advisory Committee member, Patrick Stoiber, PhD Candidate, MCBB Program.
2019- Core Member Mechanobiology Center Planning Committee
2019- Thesis Committee member, PhD Candidate, HP Program, Jesse Moreira
2019- Member, BU Sargent College, Graduate Education Committee
2020- Sargent College Internal Grant Review Committee 2020
2013-2020 MCBB PhD Thesis Committee, Patrick Stoiber

Memberships, Offices and Committee Assignments in Professional Societies:

1976- American Association for the Advancement of Science
1978- American Physiological Society
1979-2014 Biophysical Society
1982-1988 American Heart Association (Council on Basic Science)
1984-2000 Society of General Physiologists
1988-1994 Society for Experimental Biology and Medicine
1988- New England Smooth Muscle Society

1989-2000 International Society of Cardiovascular Pharmacotherapy
1991 Organizer, Contractility Subgroup Meeting, Biophysical Society
1991-2000 Abstract grader, American Heart Association, Annual Scientific Session
1992- Member, American Society for Cell Biology
1992 Organizer, New England Smooth Muscle Society Meeting
1993 Moderator, Postgraduate Seminar, American Heart Association (Council on Basic Science)
1994-1999 Clerk/Historian, International Society for Heart Research
1995-1997 Abstract grader, American College of Cardiology
1995- Mentor, American Physiological Society Mentoring Program for Women in Science
1996-1999 Councilor, Cell and General Physiology Section - Steering Committee, American Physiological Society
1996 Co-Organizer, New England Smooth Muscle Society
1996-1998 Scientific Program Committee, 1998 World Congress of the International Society for Heart Research
1997- International Union of Physiological Sciences, Cardiovascular Physiology Commission Member
1997-2000 Abstract grader, American Heart Association Council for High Blood Pressure Research
2000 Co-Chair, Session on Signal Transduction, FASEB Summer Research Conference on Smooth Muscle
2001-2010 Member, American Society for Biochemistry and Molecular Biology
2001-2002 Member, Scientific Advisory Council and Session Chair, University of Vermont Myogenic Centennial
2003 Co-Organizer, FASEB Summer Research Conference on Smooth Muscle
2004-2006 Member, Finance Committee, American Physiological Society
2004 Mentor, American Physiological Society Career Mentoring Program for Women in Physiology
2006-2007 Chair APS Task Force on Finance
2006 Organizer, FASEB Summer Research Conference on Smooth Muscle
2007- Mentor, International Mentoring Program, American Heart Association
2008- Affiliate Member, ASCB Public Information Committee—Abstract screening subcommittee
2009-2013 Member, ASCB Public Information Committee
2009, 2011 Career Mentoring Roundtable Leader, ASCB Annual meeting.
2013-2020 Member, The Physiological Society (UK)
2016- Member, European Muscle Society
2019- Member, Society for Neuroscience
2020- Member, European Society of Cardiology

Editorial Responsibilities:

1985-1991 Editorial Board of *Blood Vessels*
1989-1995 Editorial Board of *Cardiovascular Drugs and Therapy*
1991-1995 Editorial Board of *Journal of Cardiovascular Pharmacology*
1993-1996 Editorial Board of *American Journal of Physiology: Cell Physiology*
1993-2001 Editorial Board of *Hypertension*
1993-1999 Editorial Board of *Circulation Research*
1993-1998 Editorial Board of *American Journal of Physiology: Heart & Circulatory Physiology*
1996-2002 Associate Editor of *American Journal of Physiology: Cell Physiology*
2002-2012 Editorial Board of *American Journal of Physiology: Cell Physiology*
2005-2007 Editorial Board of *American Journal of Physiology: Heart & Circulatory Physiology*
2005-2019 Associate Editor of *Journal of Cellular and Molecular Medicine*

2008- Editorial Board of *Cell Health and Cytoskeleton*
2014-2017 Reviewing Editor for *J. Physiol.* (London)
2017-2020 Second Term as Reviewing Editor for *J. Physiol* (London)
2018-2020 Editorial Board member of *Scientific Reports*.
2019- Editorial Board Member, *Exploration of Medicine*

Invited reviewer for: *Archives of Biochemistry and Biophysics*, *American Journal of Physiology*, *Biochemical Journal*, *Biochemistry*, *Biochimica et Biophysica Acta*, *Biophysical Journal*, *Blood Vessels*, *Cardiovascular Drugs and Therapy*, *Circulation Research*, *Circulation*, *Experimental Cell Research*, *Gastroenterology*, *Hypertension*, *Journal of Biological Chemistry*, *Journal of Cardiovascular Pharmacology*, *Journal of Clinical Investigation*, *Journal of Clinical Sciences*, *Journal of General Physiology*, *Journal of Physiology*, *Journal of Vascular Research*, *Life Sciences*, *Molecular and Cellular Biology*, *Nature*, *Pflügers Archiv*, *PNAS*, *Science*.

Major Research Interests:

Vascular dementia, biomarkers and precursors of cardiovascular disease, mechanisms of aging-induced aortic stiffness, interactions between signaling proteins and cytoskeletal proteins, the differentiated smooth muscle cell; mechanisms of trafficking of signaling and focal adhesion molecules, mechanisms of pre-term labor.

Selected Invited Presentations:

- 1983 FASEB Symposium: "Coupling Mechanisms in Gastro-intestinal Smooth Muscle"
- 1983 NIH Workshop: "Airway Smooth Muscle"
- 1985 Winter Gordon Conference: "Angiotensin," invited speaker
- 1985 Summer Gordon Conference: "Excitation-Contraction Coupling," invited speaker
- 1985 FASEB Summer Research Conference: "Smooth Muscle," invited speaker
- 1986 Symposium on "The Ca Ion, Cardiac Myocyte and Vascular Smooth Muscle in Hypertension" (Nassau, Bahamas)
- 1986 Satellite Symposium of World Congress of Cardiology: "The Role of Ca Channel Blockers in the Management of Hypertension" (Washington, DC)
- 1987 New York Academy of Science Symposium: "Ca and Ca Channel Blockers"
- 1987 International Symposium: "Localization and Movement of Cytoplasmic Ca in Living Muscle" (Tokyo, Japan)
- 1987 British Biochemical Society Colloquium: "Regulation of Blood Flow" (London, England)
- 1987 International Workshop: "Endothelium and Vasomotor Control" (Chepstow, Wales)
- 1989 3rd International Cardiovascular Pharmacotherapy Symposium: "The Role of Calcium in the Control of Vascular Tone" (Kyoto, Japan)
- 1990 John Seidel Memorial Symposium: "Regulation of Smooth Muscle Contraction" (Woods Hole)
- 1990 Graduate Hospital Research Symposium: "Ca Imaging in Hypertrophy" (Philadelphia)
- 1991 FASEB Summer Research Conference: "Smooth Muscle," invited speaker: "Protein Kinase C"
- 1992 International Symposium: "Smooth Muscle," invited speaker: "Diverse Functional Effects of Recruitment of Specific Isoforms of Protein Kinase C in Smooth Muscle" (Fukuoka, Japan)
- 1992 European Conference on Microcirculation, co-chair and invited speaker: "New Techniques for Measuring Ions in Blood Vessels" (London, England)
- 1992 AHA Postgraduate Seminar on Intracellular Signalling: Regulation of Vascular Reactivity, invited speaker: "Calcium and Protein Kinase C (New Orleans)"
- 1992 British Society for Cardiovascular Research: Myofilaments and contractility. Keynote address: "Mechanisms of variation in Ca²⁺ sensitivity in smooth muscle" (London)
- 1993 Wellcome Lecture: "Smooth Muscle Contraction; A Tale of Two Kinases" (University of Louisville)
- 1993 FASEB Symposium on Protein Phosphorylation: "Protein Kinase C and Smooth Muscle"
- 1993 Visiting Professor Series, Medical College of Wisconsin: "Mechanisms of Smooth Muscle Contraction"
- 1994 British Physiological Society Meeting, "Symposium on Cellular Control of Contraction in Cardiac and Vascular Smooth Muscle, Compared," invited speaker: "Mechanisms of Ca Sensitization in Smooth Muscle" (Liverpool)
- 1994 NIH-sponsored conference on Male Impotence and Infertility: "Smooth Muscle Mechanisms of Contraction and Methods of Study" (Charlottesville, Virginia)
- 1995 Symposium on "Mechanisms of Ca sensitization" in honor of the 65th birthday of Professor Caspar Rüegg (Heidelberg)
- 1996 Evening Speaker, Ryan Foundation Annual Symposium "A Tale of Two Kinases" (Dartmouth College Minary Conference Center)
- 1996 Invited Symposium Speaker, International Society for Heart Research: "Ca-dependent and Ca-independent signal transduction in vascular smooth"

- muscle" (Chicago)
- 1997 Invited Symposium Speaker, Japanese Pharmacology Society: "PKC-Dependent and MLCK-Dependent Signalling in Smooth Muscle in Health and Disease" (Chiba, Japan)
- 1997 Invited Speaker, Ashai Chemical Company: "Novel Signalling Pathways in Normal and Spastic Smooth Muscle Cells"
- 1997 FASEB Symposium on Signal Transduction: "Novel Signal Transduction Mechanisms in the Vasculature"
- 1997 FASEB Summer Research Conference-Fred Fay Smooth Muscle Conference: "Caldesmon-Calponin Interactions in the Regulation of Contraction"
- 1998 Keynote Speaker, Coronary Club, Tohoku Medical Society: "Thin & Thick Filament Regulation in Vascular Smooth Muscle - State of the Art" (Sendai, Japan)
- 1998 James O. Davis Graduate Student Lecture, University of Missouri: "Thin & Thick Filament Regulation of Contraction of the Vascular Cell" (Columbia, Missouri)
- 1998 Invited Speaker, Signalling Mechanisms in Vascular Smooth Muscle. Acta Physiologica Scandinavica Symposium (Margretetops, Sweden)
- 1998 Invited Speaker, ABFIM'98 Meeting: "Signalling Pathways in Differentiated Smooth Muscle Cells" (Mexico City)
- 1998 Principal Speaker, Indiana University Physiology Department Retreat: "Smooth Muscle: Controversies and Contributions to Health and Disease" and "Signaling Pathways in Differentiated Smooth Muscle"
- 1999 Invited Speaker, Second John Seidel Symposium, "Signaling Pathways that Terminate on Thin Filament Proteins" (Woods Hole)
- 1999 Symposium Speaker, Basic Science of Vasospasm, University of Chicago: "Signaling Pathways in Differentiated Smooth Muscle in Health and Disease" (Chicago)
- 1999 State of the Art Lecture, Council for High Blood Pressure Research, AHA Meeting: "Mechanisms of Vascular Smooth Muscle Contraction" (Orlando)
- 2000 Invited Speaker, Myometrial Research Symposium, Annual Meeting of the Society for Gynecological Investigation: "Signal Transduction in Contractile Smooth Muscle" (Chicago)
- 2000 Cardiology Grand Rounds, Beth Israel Deaconess Medical Center: "Novel Signaling Pathways in Differentiated Vascular Smooth Muscle" (Boston)
- 2000 FASEB Summer Research Conference in Smooth Muscle: "CaMKII-Dependent Signaling in Smooth muscle" (Snowmass)
- 2001 Visiting Professor, Center for Perinatal Biology, Loma Linda University: "Caveolin--A Scaffolding Protein that Regulates Myometrial Contractility, "Signal Transduction in Differentiated Smooth Muscle: A Tale of Two Kinases" (Loma Linda)
- 2001 Thirteenth Annual Graduate Student Research Forum, New York Medical College. Keynote address: "Signaling Pathways Leading to Contraction of Differentiated Smooth Muscle" (Valhalla)
- 2001 3rd David F. Bohr Lecture on Smooth Muscle, 8th Mechanism of Vasodilatation, Boston University School of Medicine: "Signaling Mechanisms in Differentiated Vascular Smooth Muscle: A Tale of Two Pathways" (Boston)
- 2002 Invited Speaker, Myogenic Centennial: "Ca-dependent kinases and myogenic contractions: a role for CaMKII?" (Stowe)
- 2002 Invited Speaker, Honors Students Symposium, University of Liverpool: "Why Calponin is Important for Smooth Muscle Function" (Liverpool)
- 2002 Invited Speaker, Cardiology Seminar Series, University of Manchester: "Calmodulin and CaMKII, a Dynamic Interaction" (Manchester)
- 2003 Invited Speaker, Experimental Biology Symposium on Thin Filament Regulation of Muscle Contraction, University of Manchester: "The Smooth Muscle Thin Filament" (San Diego)
- 2003 FASEB Summer Research Conference in Smooth Muscle: Session Organizer and Speaker: "CaMKII Variants in Smooth muscle--What are they doing?" (Snowmass)
- 2003 Invited Speaker, Smooth Muscle Designated Lecture, Combined Physiological Society/British Pharmacological Society Meeting: "What's New in Smooth Muscle Signaling Pathways?" (Manchester UK)

- 2003 Invited Speaker, Massachusetts Biotechnology Council: "ERK, Caldesmon & Women's Health" (Boston)
- 2004 Alberta Heritage Foundation Visiting Lecturer: "Calponin, Archvillin and the Smooth Muscle Cell Cortex: What they tell us about Contractility" (Calgary, Alberta, Canada)
- 2005 BVARI Inflammatory Mediators Symposium: "Overview of Signaling Networks in Smooth Muscle" (Boston)
- 2005 Invited Speaker, Case Western University: "MARCKS, A PKC-dependent CaM Targeting Protein in Smooth Muscle" (Cleveland)
- 2006 Invited Speaker, Sargent College, Boston University: "MARCKS, a PKC-dependent Master Regulator of CaM Targeting" (Boston)
- 2006 Invited Speaker, Department of Physiology and Biophysics, BU Medical School, "MARCKS, a PKC-dependent Master Regulator of CaM Targeting" (Boston)
- 2006 FASEB Summer Research Conference on "Smooth Muscle": Conference Organizer, Snowmass CO.
- 2007 Invited Speaker, Biomolecular Seminar Series, MCBB, Boston University, "Dynamics of the Smooth Muscle Cytoskeleton" (Boston)
- 2007 Invited Speaker, Molecular Medicine Series, Tufts University, New England Medical Center, "Dynamics of the Smooth Muscle Cytoskeleton" (Boston)
- 2007 Robert Manley Keynote Speaker, Harold Amos Annual Symposium of the Albert J. Ryan Foundation, Minary Conference Center, Dartmouth College, "Preterm Labor: From Molecule to Man".
- 2007 Department of Molecular and Cell Biology, Boston University, Distinguished Lecturer Series, "Smooth Muscle, ERK, Contractility and the Role of a New Protein, Smooth Muscle Archvillin".
- 2008 Saint Elizabeth Hospital, Tufts University, Research Seminar Series, "SmAV, Traffic Cop for Vascular Signaling Pathways"
- 2008 North-East Smooth Muscle Society Meeting, West Roxbury VA, Keynote Speaker: "Plasticity of the Vascular Smooth Muscle Cytoskeleton".
- 2009 Boston University Biology Department Graduate Student Organization meeting: "Signal Transduction, Cytoskeleton & Smooth Muscle".
- 2009 Keynote Speaker: New England Research Club Research Week, University of New England: "Pre-term Labor, from Molecule to WoMan".
- 2009 Invited speaker and session chair, FASEB Summer Research Conference on "Smooth Muscle", Lucca, Italy. Title of talk: "Protein Scaffolds: Pulling it all Together".
- 2009 Invited Speaker: ASCB Special Interest Group: "Plasticity of the Nonmuscle Actin Cytoskeleton in Differentiated Vascular Smooth Muscle".
- 2011 Invited Talk: Research Seminar Series: "Cytoskeletal Biology, Aortic Stiffness and Cardiovascular Disease: A Connection?" BIDMC, Harvard Medical School.
- 2011 Invited Talk: WCVI Seminar Series: "Cytoskeletal Biology, Aortic Stiffness and Cardiovascular Disease: A Connection?" Whitaker Institute.
- 2011 Invited Talk: Pulmonary Center Seminar Series: "Cytoskeletal Biology, Smooth Muscle Plasticity, and Cardiovascular Disease: A Connection?" BU Medical Center.
- 2012 Invited Talk: FASEB Summer Research Conference: The non-muscle cytoskeleton and it's role in Vascular function.
- 2012 Invited Talk: Symposium Sponsored by Biomedical Engineering Society: Cell Motility in Health & Disease. Experimental Biology Meeting, San Diego CA "Vascular Cell Cytoskeletal Biology in Health & Disease".
- 2013 Invited Talk: Society of Gynecologic Investigation Annual Meeting "Plasticity of the Smooth Muscle Cytoskeleton and Its Importance to Uterine Function.
- 2013 Invited Talk: Experimental Biology National Meeting, Boston, Featured Topic: "Signaling & the Cytoskeleton: Regulation of Smooth muscle Contractility & Stiffness.
- 2013 10th Annual Mahesh Lectureship: "Cytoskeletal Biology, Aortic Stiffness and Cardiovascular Disease: A Connection?" Medical College of Georgia, Georgia Regents University, Augusta GA

- 2013 International Union of Physiological Sciences, Birmingham UK. Invited talk: The importance of the smooth muscle cytoskeleton to pre-term labour.
- 2013 International Union of Physiological Sciences, Birmingham UK. Talk in Session sponsored by Biochemical Society: "Juggling balls—Family and Physiology".
- 2015 Experimental Biology Meeting, Boston, MA Talk in symposium, "Increased Vascular Stiffness in Hypertension" sponsored by the American Society of Pharmacology and Experimental Therapeutics on "Subcellular targets for the treatment of aging-induced vascular stiffness.
- 2015 Invited Seminar: "Subcellular Targets for the Potential Treatment of Increased Vascular Stiffness" as part of the Molecular Medicine Series (MMS) at Tufts Medical Center, November 2015.
- 2016 Featured Speaker, Wiggers Symposium, American Physiological Society, Experimental Biology Meeting, San Diego April 3, 2016, "Mechanisms of Aortic Stiffness and Consequent Cardiovascular Disease with Aging".
- 2016 Session Chair and Featured Speaker, European Muscle Conference, September 1, 2016, "Vascular Smooth muscle Cytoskeletal Function: Contractility and Beyond".
- 2016 'Molecular Mechanisms of Aortic Stiffness and Consequent Cardiovascular Diseases with Aging'. Dean Franklin Lecture, Dalton Cardiovascular Research Center, University of Missouri.
- 2017 "Molecular Mechanisms of Aortic Stiffness and Consequent Neurovascular disease with Aging" MPPB Department Seminar Series Brown University & CPVB COBRE, Providence RI, October 27, 2017.
- 2019 "*Molecular Causes of Increased VSM Stiffness with Aging*". Ninth Annual Meeting of the North American Artery Society". Meeting theme: "*Chronological vs. Vascular Aging: Biological, Clinical and Population Implications*", May 17-18, 2019 University of Iowa Main Ballroom.
- 2019 "Capitalizing on Mechanobiology to Prevent Vascular Dementia", Mechanobiology Research on Tap Symposium. April 3, 2019.
- 2019 Invited speaker: North American Artery Society. "Molecular Causes of increased Vascular Smooth Muscle Stiffness with Aging". May 17th 2019, Iowa City, Iowa.
- 2019 Invited lecture: "The role of the cytoskeleton in vascular aging", AHA Annual Hypertension meeting, New Orleans Sept 5th 2019.

Teaching Experience:

- 1974 Conference leader (first-year medical students); neurophysiology course, University of Cincinnati Medical School
- 1975-1976 Lectures on antibiotics (second-year medical students); pharmacology, University of Cincinnati Medical School
- 1978,1980 Lectures: "Gastrointestinal Smooth Muscle Physiology" (residents and graduate students); GI physiology course, Mayo Medical School
- 1979 Lecture: "Smooth Muscle Neurophysiology" (residents and graduate students); CNS physiology course, Mayo Medical School
- 1978,1980 Lectures: "General Smooth Muscle Structure and Function", "Autacoids" (second-year medical students); pharmacology course, Mayo Medical School
- 1983-1986 Laboratory on gastrointestinal physiology (first-year medical students); Physiology 700, Mammalian Physiology, Harvard Medical School
- 1984 Lecture: "Excitation-Contraction Coupling" (graduate students); Physiology 706, Regulation of Muscle Function, Harvard Medical School
- 1984-1987 Conference leader (first-year medical students); Physiology 700, Mammalian Physiology, Harvard Medical School
- 1985 Lecture: "Cytoplasmic Ca²⁺ Measurement and Regulation"; Biology 221, Harvard University

1985	Lecture: "Regulation of Contractile Function by Calcium" (graduate students); Physiology 215, Harvard Medical School
1987	Lecture series: "Smooth Muscle Signaling" (graduate students); Physiology 215, Harvard Medical School
1987-1991	Graduate course: "Smooth Muscle Cellular Physiology" (graduate students); Physiology 324, Harvard Medical School
1987	Lecture: "Smooth Muscle Physiology"; Review and Update in Neurobiology for Neurosurgeons; MBL, Woods Hole, Massachusetts
1987-1991	Conference section leader (first-year medical students); Metabolism and Function in Human Organ Systems (New Pathway), Harvard Medical School 702
1992-1995	Cell & Molecular Physiology 210, Harvard Medical School, lecture: "Smooth Muscle" (graduate students -- Markey Program)
1993-1994	Cell & Molecular Physiology 210, Harvard Medical School, lecture: "Skeletal and Cardiac Muscle Excitation - contraction coupling." (graduate students)
1995	Biology 110 - Cell Physiology and Biophysics - Muscle Physiology, Brown University (graduates and undergraduates)
2001	Lecture: "Smooth Muscle", Wellesley College Summer Undergraduate Science Program
2003-2005	Chemistry & Biology of the Cell, Harvard Medical School, lecture: "Smooth Muscle and Its Regulation" (medical & dental students)
2004	Co-organizer, BBRI Summer Undergraduate Research Program Lecture Series
2004-2006	BIDMC Research Fellows Lecture Series, lecture: "Proteomics"
2007-	SAR HS750, Graduate level course, <i>Critical Analysis of Physiological Literature</i> Sargent College, Boston University.
2008-	SAR HS793 M1, <i>Masters Thesis</i> , Sargent College, Boston University
2008-	GRS MB908 MCBB Research
2009-2015	HS360/560, Muscle Biology in Health and Disease, Lecture: "Smooth Muscle, Its Regulation & Disorders"
2016-	SAR HS905 M1 Dissertation Research
2008-	SAR HS793 M1 Literature-based Research Paper (grad students)
2008-	SAR HS791 M1 Independent Research (grad students)
2008-	SAR HS495 M1 Directed Study (undergrad students)
2008-2020	SAR HS750 The Physiologist's Toolbox / Critical Analysis of Physiologic Data Sources
2017	SAR HP151 Introduction to the Health & Rehabilitation Professions

Education Funding:

7/1/85-6/30/00	NIH/NIGMS 5T32GM07258-19S1, Institution: Harvard University Training Faculty, "Integrative Biology: from Cells to Organisms"
7/1/93-6/30/04	NIH/NHLBI T32HL007734, Institution: Beth Israel Deaconess Medical Center, PI: Logerfo, F.W., Training Faculty, "Harvard-Longwood Research Training in Vascular Surgery".
7/1/94-7/31/05	NIH/NHLBI T32HL007374, Institution: Harvard University (Medical School), PI: Morgan, J.P., Training Faculty, "Cardiovascular Research Training Program".
7/1/98-6/30/09	NIH/NIGMS T32GM007592, Institution: Massachusetts General Hospital, PI: Miller, K., Training Faculty, "Basic Science Research Training for Anesthetists".
4/1/04-3/31/09	NIH/NHLBI 1T32HL076130-01, Institution: Beth Israel Deaconess Medical Center PI: Sellke, F.W., Training Faculty, "Cardiovascular Surgery Training Grant".

2008-	NIH MSTP BU MD/PhD training program at BU PI: Benjamin Wolozin, training faculty.
2010-	NIH Molecular Medicine T32 "Graduate Program in Molecular Medicine": Co PIs: Herbert Cohen & Paul Pilch
2011-2014	NIH T32 in Metabolism, Endocrinology and Obesity: PI Shalender Bhasin, MD
2009-2019	NIH/NHLBI 5T32HL007969 Institution: Boston University PI: Katya Ravid Training Faculty & Executive Committee Member, "Training in Cardiovascular Biology: Pre-Doctoral"
2015-2020	NIH/NHLBI T32 HL-0072245 Institution: Boston University. PI: Victoria Bolotina, PhD. "Multidisciplinary Training in Cardiovascular Research."

Students/Fellows Trained/Mentored:

1. Arlene Bradley, M.D., Cardiology fellow - Cytoplasmic calcium levels during coronary artery vasomotion, 7/83-6/85. Current position: Associate Professor, Cardiovascular Division, Wayne State University.
2. James Ferguson, M.D., F.A.C.C., Cardiology fellow - Changes in $[Ca^{2+}]_i$ during length-tension relationship in vascular smooth muscle, 1/85-7/87. Current position: Associate Director, Clinical Cardiology Research, Texas Heart Institute.
3. Meei Jiang, Ph.D., postdoctoral fellow - Ca^{2+} and phosphorylation in smooth muscle contraction, 6/85-8/88. Current position: Associate Professor Academia Sinica, Institute of Biomedical Sciences, Taipei, Taiwan.
4. Joseph Weinstein, M.D., Cardiology fellow - *In vitro* properties in human saphenous veins and mammary arteries used for coronary bypass operations, 5/86-6/88. Current position: Assistant Professor, Cardiovascular Division, College of Physicians & Surgeons, Columbia University.
5. Frank Brozovich, M.D., Ph.D., research resident - Mechanism of "latch," 6/86-6/89. Current position: Professor, Department of Cardiovascular Disease, Mayo Clinic, Rochester.
6. Loree Griffin, high school student – Contraction of *in vitro* vascular smooth muscle preparations, 7/86-9/86.
7. Christine Ferguson, high school student – Mechanisms for vascular contractility, 7/86-9/86.
8. Loretta Marzullo, high school student – Mechanisms for vascular contractility, 7/86-7/87.
9. Andre Ruzycky, Ph.D. M.B.A., postdoctoral fellow - Relative roles of C-kinase and MLC kinase in VSM, 8/86-3/88. Current position: VP, Business Development, Hologic Inc.
10. Panagiotis Papageorgiou, M.D., Ph.D., Physiology graduate student - Excitation-contraction coupling in hypertension, 2/87-6/90. Current position: Assistant Professor in Medicine, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston.

11. John Pawlowski, M.D., Ph.D., Physiology graduate student - Mechanism of intrinsic active vascular tone, 9/87-10/91. Current position: Assistant Professor, Department of Anesthesia, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston.
12. Richard Kuntz, MD, MSc, Cardiology fellow - Vasodilation through nitric oxide, 5/88-7/91. Current position: Senior Vice President & Chief Scientific, Clinical and Regulatory Officer, Medtronic, Inc.
13. Peg Baumann, M.D., Gerontology fellow - Cellular mechanisms of bladder contraction, 6/88-4/90. Current position: Associate Professor, Department of Gerontology, University of Illinois.
14. Eiichi Suematsu, M.D., Ph.D., postdoctoral fellow - Ca and phosphorylation of myosin light chains in vascular smooth muscle, 4/89-1/91. Current position: Physician, Itoda Town Hospital, Fukuoka, Japan.
15. Raouf Khalil, M.D., Ph.D., postdoctoral fellow/research associate - PKC translocation, 10/89-1992; Instructor, Harvard Medical School, 1992-1/95. Current position: Department of Surgery, Veterans Affairs Boston Healthcare System; Associate Professor of Surgery, Department of Surgery, Brigham and Women's Hospital Harvard Medical School.
16. William Butler, M.D., fellow, Department of Neurosurgery, Massachusetts General Hospital -Mechanism of post hemorrhagic cerebral vasospasm, 1/90-12/92. Current position: Assistant Professor in Neurosurgery, Massachusetts General Hospital, Harvard Medical School.
17. Hideaki Katsuyama, D.D.S., Ph.D., postdoctoral fellow - Mechanism of tone maintenance in smooth muscle cells, 4/91-1/93. Current position: Director of Coordinating Office for I.T.I., Tokyo, Japan.
18. Tenin Aburto, Ph.D., postdoctoral fellow - Mechanism of α_2 -mediated vascular contraction, 7/91-9/92. Current position: Instructor of Pharmacology, Northeastern University.
19. Sara E. Szal, predoctoral fellow - HMS MD and MIT HST programs - Mechanism of increased vascular resistance in human pre-eclampsia, 7/92-7/93. Current position: Obstetrics/gynecology resident, University of California, San Francisco.
20. Ying-Ming Liou, Ph.D., postdoctoral fellow - Second messengers in smooth muscle cell growth, 9/92-1/94. Current position: Assistant Professor, Department of Life Sciences, National Chung-Hsing University, Taichung, Taiwan.
21. Chi-Ming Hai, Ph.D., Visiting Scientist - $[Ca^{2+}]_i$ -dependence of length-induced changes in myosin phosphorylation, 93-95. Current position: Professor, Physiology Department, Brown University.
22. Mukesh Jain, M.D., cardiology fellow - Intrinsic vascular tone, 7/93-10/95. Current position: Director, Case Cardiovascular Research Institute, Professor of Medicine, Case Western Reserve University School of Medicine.
23. Arie Horowitz, D.Sc., postdoctoral fellow - The role of calponin in regulation of smooth muscle contractility, 12/93-12/95. Current position: Assistant Professor, Department of Medicine, Dartmouth Medical School.
24. Constance Bergh-Menice, Ph.D., postdoctoral fellow - Mechanism of Ca-independent contractions, 4/94-9/97. Current position: family leave.

25. Hope Ricciotti, M.D., postdoctoral fellow - Mechanism of pre-term labor, 9/94-6/95. Current position: Associate Professor of Obstetrics, Gynecology & Reproductive Biology, Beth Israel Deaconess Medical Center, Harvard Medical School. Collaborator, 95-96.
26. Regent Laporte, D.V.M, Ph.D., postdoctoral fellow - Signal transduction cascades involving MAP kinase and PKC, 1995-1998. Current position: Instructor at University of California, San Diego-Clinical & Translational Research Institute (CTRI).
27. Michael Reddy, undergraduate student, Washington State University - Methods of protein-loading into intact smooth muscle cells, 6/95-9/95.
28. Michael Taggart, Ph.D., Visiting Scientist - Myosin light chain phosphorylation in myometrium; 7/95-9/95, 1/98-2/99, 7/00-8/00. Current position: Senior Scientist, University of Manchester.
29. Julie Rapps, Ph.D. - American Physiological Society Mentoring Program, 1995-present.
30. Chantal Dessy, Ph.D. - Transfection of blood vessels with antisense oligonucleotides, 1/96-1/98. Current position: Assistant Professor, Universite Catholique de Louvain; Institute de recherche experimentale et Clinique, Louvain, Brussels, Belgium.
31. Carrie Sougnez, undergraduate student, Northeastern University - PKC isoforms in smooth muscle; 1/96-9/96, 9/97-1/98. Current position: Research staff, Whitehead Genome Project.
32. Steven Levine, undergraduate student, Tufts University - Role of MAPK in vascular smooth muscle, 1/97-6/97.
33. InKyeom Kim, M.D., Ph.D., Visiting Scientist, Kyungpook National University - Hypertrophy and proliferation of smooth muscle, 1/97-6/99. Current position: Associate Professor, Department of Pharmacology, School of Medicine, Kyungpook National University, Korea.
34. Helene Quach, undergraduate student, Ecole Nationale de Chimie, Physique et Biologie - MAPK-CaD interactions in vascular smooth muscle, 5/97-8/97.
35. Barbara Leinweber, Ph.D., postdoctoral fellow - Calponin interactions in vascular smooth muscle cells, 9/97-11/99. Current position: Director of Research BDL Biochemistry, LLC.
36. Motohisa Tofukuji, Ph.D., Visiting Scientist – Cardioplegia and myogenic contractions: cellular mechanisms, 97-98. Current position: Associate Professor, Department of Cardiothoracic Surgery, Tohoku University, Japan.
37. Naruto Matsuda, M.D., Ph.D., Visiting Scientist, Tottori University Faculty of Medicine, Japan, 4/98-3/00. Current position, Assistant Professor, Department of Cardiothoracic Surgery, Tottori University.
38. Young-Ho Lee, D.V.M., Ph.D., postdoctoral fellow - Caldesmon and cytoskeletal integrity, 4/98-4/99; Visiting Scientist 6/00-7/00. Current position: Professor, Department of Physiology, Yonsei University College of Medicine, Korea.
39. Taylor Ripley, undergraduate Biochemistry student, Boston College - Ca-independent signaling pathways, 6/98-9/98.
40. Melissa Goodwillie, undergraduate student, Northeastern University - Cloning of ferret calponin isoforms, 1/99-7/99. Current position: predoctoral student, University of Wisconsin, Microbiology Department.

41. Justin Hulvershorn MD PhD CSO, research assistant, imaging of free CaM levels in smooth muscle cells. 1995-1998, Current position Founder and Chief Science officer of Mirador Biomedical.
42. Hyun-Dong Je, Ph.D., postdoctoral fellow – Calponin as a signaling molecule, 3/99-2/04. Current position: Assistant Professor, Department of Pharmacology, Catholic University of Daegu, Gyeongbuk, Korea.
43. Todd Ashworth, undergraduate student, Northeastern University – Cloning CaP from ferret blood vessels, 6/99-12/99.
44. Samudra S. Gangopadhyay, Ph.D., Research Assistant Professor, Boston University - CaMKII isoforms in vascular smooth muscle, 10/99-9/05 postdoctoral fellow. 9/05-2006: Instructor, Boston Biomedical Research Institute; 2006-2008 Research Assistant Prof. Boston University, Sargent College; Currently: Research Assistant Prof., Department of Endocrinology, Diabetes & Nutrition, B.U. Medical Campus.
45. Michael Caruso, undergraduate student, Northeastern University – Nonviral gene delivery methods for blood vessels, 6/00-12/00.
46. Wentong (Tony) Lu, M.D., postdoctoral fellow - Calponin as a signaling molecule, 12/00-12/02. Current position: Research Scientist, Center for Perinatal Biology, Loma Linda University School of Medicine.
47. Yunping Li, M.D., Visiting Scientist, Anesthesia Attending Physician, Beth Israel Deaconess Medical Center; Assistant Professor, Department of Anaesthesia, Harvard Medical School – New therapeutics for preterm labor, 1/01-present.
48. Sabah Malek, high school student - Mechanisms of parturition, 6/01-8/01; undergraduate student, Boston University, 6/02-8/02, 5/03-9/03, 6/04-1/05.
49. Jae-Young (Jane) You, undergraduate student, Wellesley College, Howard Hughes Medical Institute Fellow - Targeting and regulation of calmodulin in smooth muscle cells, 6/02-8/02, 1/03, 5/03-9/03. Current position: Medical Student, Dartmouth University.
50. Sang-Jin Lee, M.D, Ph.D., Visiting Scientist - Associate Professor, Department of Physiology, Chungbuk National University College of Medicine, Korea – Developmental changes in myometrial signaling pathways during gestation, 1/03–1/04.
51. William Marganski, Ph.D., postdoctoral fellow - Functional role of CaMKII gamma G-2, 9/03-5/05. Current position, Research Scientist, Department of Systems Biology, Harvard Medical School.
52. Michael Riley, visiting PhD student, University of Manchester - Effects of Antisense- and RNAi-mediated downregulation of caveolin in smooth muscle, 9/03-12/03, 6/04-9/04 Current position postdoctoral fellow, University of Nottingham UK.
53. Diana Mujali, undergraduate student, Wellesley College - Introduction of bioactive peptides into living smooth muscle cells, 6/1/04-9/05/04. Currently: Research technician Children's Hospital, Harvard Medical School.
54. Steven Munevar, Ph.D., postdoctoral fellow - Research Fellow in Surgery, Department of Surgery, Beth Israel Deaconess Medical Center - CaMK as a signaling molecule in normal smooth muscle and pathophysiologic states of vascular spasm, 9/04-6/06. Currently: CEO, Munevar & Associates; Adjunct Assistant Prof, Mass Bay Community College.

55. Susanne Vetterkind, Ph.D., AHA postdoctoral fellow, Endré A. Balazs Scholar, Research Assistant Professor, Boston University— Role of smooth muscle phosphatase and ZIP kinase, ERK Scaffolds and cytoskeleton, 6/05-6/16.
56. Beth Colombo, undergraduate student, Bowdoin College – Role of PKC delta in vascular contractility, 5/05-09/05. Currently Med student at U. Mass
57. Edouard Kengni, Ph.D., postdoctoral fellow – Smooth muscle scaffolding proteins, 1/06-7/07. Currently postdoctoral fellow, Mass. Gen. Hospital.
58. Hak Rim Kim, Ph.D., postdoctoral fellow – Actin remodeling in blood vessels, 6/06-3/10. Currently Tenure Track Assistant Professor, Dankook University, South Korea.
59. Sarah Appel, Ph.D., postdoctoral fellow -- Acidic calponin in nonmuscle signal transduction, 9/07-9/10. Currently tenure track Assistant Professor, University of Koln, Germany.
60. Mehtap Yilmaz, MCBB predoctoral student --- Targeting domains of gamma CaMKII variants. 9/07-12/13. Currently postdoctoral fellow, Medical Genetics Department, Kocaeli University Medical School, Izmit, Kocaeli, Turkey.
61. John Min, BU undergraduate student---Non-proliferative functions of Src in vascular smooth muscle cells 1/08—6/11. Currently, PhD student Harvard Medical School, Genome Science/Genomics.
62. Ransom Poythress, MCBB PhD student---Geography of smooth muscle adhesion plaques and dense bodies ---5/08-5/13. Current position: Tenure Track Assistant professor, Department of Biology, Houghton College, New York.
63. Bob Saphirstein, Bioengineering PhD student, Postdoctoral fellow—Compliance of adhesion plaques--4/25/08—7/01/14. Current position: Analyst, Healthcare Strategy Consulting at Fletcher Spaght, Inc., Greater Boston Area
64. Rina Yamin, Postdoc, Research Assistant Professor—FLNA and vascular function in health and disease. 9/13/10-8/12/17.
65. Qian Qian (Stephy) Lin--- Undergraduate Student Researcher. Ceramide and Sirt and atherosclerosis in vascular cells. 2012-2015.
66. Yuan (Tony) Gao, Bioengineering PhD student---Mechanotransduction in cardiovascular aging. 2012-2016.
67. Worawit (Wit) Suphamungmee, Postdoctoral fellow—Platinum Replica EM of dVSM cells. 4/13-1/2014 Current Position: Tenure Track Assistant Professor, Department of Anatomy, Mahidol University, Bangkok Thailand.
68. Heung Mook Shin, Sabbatical stay. Alternative medicine to prevent vasospasm. 9/12-9/13. Currently Dean, College of Oriental Medicine, Dongguk University.
69. Jessica Pate, MS student Human Physiology Co-Mentored with Sweta Girgenrath, Smooth Muscle Defects and Muscular Dystrophy. 9/13-9/15
70. Nivin Omar, MS thesis student, Human Physiology. A Study of the Role of Actin Polymerization in the Regulation of Vascular Contractility in a Mouse Model. 6/14-5/2017.

71. Christopher Nicholson, Postdoctoral Fellow. Aging-induced changes in miRs regulating cortical cytoskeleton. 9/14—12/2018.
72. Dekoia Burton, Undergraduate Student Researcher. Ceramide and Sirt-induced IQGAP proteolysis 9/14---11/14.
73. Milan Aggarwal, Postdoctoral Fellow. Deacetylases and smooth muscle function. 12/14—9/16.
74. Diana Zhang, Summer Medical Student Research Fellow. The Effectiveness of Cell Permeant Decoy Peptides in Decreasing Aortic Stiffness. 5-14-15 – 1-30-16. MSSRP Fellowship recipient. (medical student summer research program).
75. Kuldeep Singh, Postdoctoral Fellow. Cytoskeletal based decoy peptides to reverse aging-induced aortic stiffness. 1-2-16---present.
76. Shivani Mohan, Undergraduate Student Researcher. 1/1/2016---5-9-2017.
77. Sophie Lee, Undergraduate Student/UROP Student Researcher, Lab Manager. Mir 145 and VSM function. 1/1/2016--5-9-2017. (current: PA student, Tufts Medical)
78. Stephanie (Qianhui) Liang, Summer Medical Student Research Fellow. The importance of non-coding RNA in aging blood vessels. MSSRP Fellowship recipient. 5-14-16—1-30-2017.
79. Joshua Kang, Undergraduate Student Researcher from Human Biology Department, UCSD, Summer, 2016. Smooth muscle and aortic stiffness.
80. Shi Su, doctoral student, HP program Co-Mentor with Peter Kang. 3-31-2016-present.
81. Yandan Wang, Thesis MS student, HP program. Cardiovascular neuroscience of brain. 9-6-2016-2018.
82. Garima Panday, Visiting Scientist, Chemical modification of bioactive peptides, 9-20-16-12-1-16.
83. Nivedita Mandal, SMED student (BS/MD) at BU, Development of therapeutic cell permeant decoy peptides to decrease aortic stiffness, 9-6-2016—6-1-2017.
84. Caitlin O'Rourke, CAS student, Lab Manager & 2017 UROP student, A program of microRNAs that regulate vascular aging, 9-16—1-18.
85. Arnaldo Franco, Biology, CAS undergraduate student, Dean's Scholar, Epigenetic regulation of vascular gene expression (10-1-2016—5-11-2017).
87. Fred Chua, Summer Medical Student Research Fellow, Sex-Related Differences in Aortic Stiffness of Aged Mice. 5-14-2017--7-7-2017. (*Received first place in 2018 Medical Student Research Poster Competition*).
88. Cornelia Williams, Summer High School Student, Vascular Dementia and Brain Microbleeds. Summer 2017, June 26-Aug 20, 2017.
89. Rebecca Williams, UROP student, co-mentor with Katherine Zhang, Bioengineering, BU. Biomechanics of aortic stiffness during heartbeat Summer 2017, June 1-December 2017.
90. Xing, Yi, Human Physiology MS student, Thesis track. Sept. 1, 2017--2019.

91. Emily Thunberg, Bioengineering undergrad, student research fellow, Endosomes and aortic stiffness with aging. Sept 1 2017— present
92. Anne Kim, Human Physiology undergrad, Sept 1, 2017- present. Vascular smooth muscle non-muscle myosin and aortic stiffness. UROP awardee Spring 2018.
93. Sheshank, Mageshwar, Human Physiology MS student, thesis track, topic: Sex differences in vascular damage to brain Oct. 1 2017-present
93. Lova Prasadareddy Kajuluri, postdoctoral fellow, April 2, 2018- .
94. Komal Patel, Human Physiology undergrad, April, 2018 -- .
95. Eamon Khatibifar, BU medical student, Summer Research Scholarship, APO E, aortic stiffness and vascular dementia, May-July 2019
96. Katie Kaplan, PhD student MCBB 2019- .

BIBLIOGRAPHY

Original Reports:

1. Morgan KG, Entrikin RK, Bryant SH. Myotonia and block of chloride conductance by iodine in avian muscle. *Am J Physiol* 1975; 229:1155-1158.
2. Morgan KG, Bryant SH. The mechanism of action of dantrolene sodium. *J Pharmacol Exp Ther* 1977; 201:138-147.
3. Morgan KG, Bryant SH. Pentobarbital: Presynaptic effect in the squid giant synapse. *Experientia* 1977; 33:487-488.
4. El-Sharkawy TY, Morgan KG, Szurszewski JH. Intracellular electrical activity in canine human gastric smooth muscle. *J Physiol (London)* 1978; 279:291-307.
5. Telander RL, Morgan KG, Kreulen DL, Schmalz PF, Kelly KA, Szurszewski JH. Human gastric atony with tachygastria and gastric retention. *Gastroenterology* 1978; 75:497-501.
6. Morgan KG, Schmalz PF, Szurszewski JH. The inhibitory effects of vasoactive intestinal polypeptide on the mechanical and electrical activity of canine antral smooth muscle. *J Physiol (London)* 1978; 282:437-450.
7. Morgan KG, Schmalz PF, Go VLW, Szurszewski JH. Electrical and mechanical effects of molecular variants of CCK on antral smooth muscle. *Am J Physiol Endocrinol Metab Gastrointest Physiol* 1978; 235:E324-E329.
8. Morgan KG, Schmalz PF, Go VLW, Szurszewski JH. Effects of pentagastrin G17 and G34 on the electrical and mechanical activities of canine antral smooth muscle. *Gastroenterology* 1978; 75:405-8412.
9. Morgan KG, Szurszewski JH. Mechanisms of phasic and tonic actions of pentagastrin on canine gastric muscle. *J Physiol (London)* 1980; 301:229-242.
10. Neering IR, Morgan KG. Use of aequorin to study excitation-contraction coupling in mammalian smooth muscle. *Nature* 1980; 288:585-587.
11. Morgan KG, Muir TC, Szurszewski JH. The electrical basis of contraction and relaxation in canine fundal smooth muscle. *J Physiol (London)* 1981; 311:475-488.
12. Angel F, Schmalz PF, Morgan KG, Go VLW, Szurszewski JH. Innervation of the muscularis mucosa in the canine stomach and colon. *Scan J Gastroenterol* 1982; 71:71-75.
13. Morgan JP, Morgan KG. Vascular smooth muscle: The first recorded Ca²⁺ transients. *Pflüg Archiv* 1982; 395:75-77.
14. Morgan KG. Electrophysiological differentiation of alpha-receptors on arteriolar smooth muscle. *Am J Physiol Heart Circ Physiol* 1983; 244:H540-H545.
15. Morgan KG. Comparison of membrane electrical activity of cat gastric submucosal arterioles and venules. *J Physiol (London)* 1983; 345:135-147.

16. Schmalz PF, Morgan KG, Szurszewski JH. Pentagastrin potentiates nonadrenergic inhibitory neuromuscular transmission in the oral stomach of the dog. *Am J Physiol Gastrointest Liver Physiol* 1983; 245:G597-600.
17. Morgan JP, Morgan KG. Stimulus-specific patterns of intracellular calcium levels in ferret portal vein smooth muscle. *J Physiol (London)* 1984; 351:155-167.
18. Morgan JP, DeFeo TT, Morgan KG. A chemical procedure for loading the calcium indicator aequorin into mammalian working myocardium. *Pflüg Archiv* 1984; 400:338-340.
19. Morgan JP, Morgan KG. Alteration of cytoplasmic ionized calcium levels in smooth muscle by vasodilators in the ferret. *J Physiol (London)* 1984; 357:539-551.
20. Bradley AB, Morgan KG. Cellular Ca²⁺ monitored by aequorin in adenosine-mediated smooth muscle relaxation. *Am J Physiol Heart Circ Physiol* 1985; 248:H109-H117.
21. Morgan KG, Angel F, Schmalz PF, Szurszewski JH. Intracellular electrical activity of the muscularis mucosa of the stomach of the dog. *Am J Physiol Gastrointest Liver Physiol* 1985; 249:G256-G263.
22. DeFeo TT, Morgan KG. Responses of enzymatically isolated mammalian vascular smooth muscle cells to pharmacological and electrical stimuli. *Pflüg Archiv* 1985; 404:100-103.
23. Morgan KG, DeFeo TT, Wenc K and Weinstein R. Alterations of excitation-contraction coupling by platelet-derived growth factor in enzymatically isolated and cultured vascular smooth muscle cells. *Pflüg Archiv* 1985; 405:77-79.
24. DeFeo TT, Morgan KG. Calcium-force relationships as detected with aequorin in two different vascular smooth muscles of the ferret. *J Physiol (London)* 1985; 369:269-282.
25. Morgan JP, Gwathmey JK, DeFeo TT, Morgan KG. The effects of amrinone and related drugs on intracellular calcium in isolated mammalian cardiac and vascular smooth muscle. *Circulation* 1986; 73 (Suppl III):65-77.
26. DeFeo TT, Morgan KG. A comparison of two different indicators: Quin 2 and aequorin in isolated single cells and intact strips of ferret portal vein. *Pflüg Archiv* 1986; 406:427-429.
27. Bradley AB, Morgan KG. Alteration in cytoplasmic calcium sensitivity during porcine coronary artery contractions as detected by aequorin. *J Physiol (London)* 1987; 385:437-448.
28. Morgan KG, Jiang MJ. Measurement of cytoplasmic Ca²⁺ during tonic and phasic contractions of mammalian smooth muscle. *Excerpta Medica Elsevier Science Publishers; International Congress Series* 1987; 725:109-123.
29. Jiang MJ, Morgan KG. Intracellular calcium levels in phorbol ester-induced contractions of vascular muscle. *Am J Physiol Heart Circ Physiol* 1987; 253:H1365-H1371.
30. DeFeo TT, Briggs GM, Morgan KG. Ca²⁺ signals obtained with multiple indicators in mammalian vascular muscle cells. *Am J Physiol Heart Circ Physiol* 1987; 253:H1456-H1461.
31. DeFeo TT, Morgan, KG. Calcium-force coupling mechanisms during vasodilator-induced relaxation of ferret aorta. *J Physiol (London)* 1989; 412:123-133.

32. Morgan JP, Morgan KG. Intracellular calcium and cardiovascular function in heart failure; effects of pharmacologic agents. *Cardiovasc Drugs and Ther* 1989; 3(3):959-970.
33. Jiang MJ, Morgan KG. Agonist-specific myosin phosphorylation and intracellular calcium during isometric contractions of arterial smooth muscle. *Pflüg Archiv* 1989; 413:637-643.
34. Ruzycky AL, Morgan KG. Involvement of the protein kinase C system in calcium-force relationships in ferret aorta. *Br J Pharmacol* 1989; 97:391-400.
35. Weinstein JS, Grossman W, Weintraub RM, Thurer RL, Johnson RG, Morgan KG. Differences in α -adrenergic responsiveness between human internal mammary arteries and saphenous veins. *Circulation* 1989; 79:1264-1270.
36. Brozovich FV, Morgan KG. Stimulus specific changes in the mechanical properties of vascular smooth muscle. *Am J Physiol Heart Circ Physiol* 1989; 257:H1573-H1580.
37. Papageorgiou P, Morgan KG. The nuclear-cytoplasmic $[Ca^{2+}]$ gradient in single mammalian vascular smooth muscle cells. *P Soc Exp Biol Med* 1990; 193:331-334.
38. Brozovich FV, Walsh MP, Morgan KG. Regulation of force in skinned, single ferret aortic smooth muscle cells. *Pflüg Archiv* 1990; 416:742-749.
39. Papageorgiou P, Morgan KG. Intracellular free Ca^{2+} is elevated in hypertrophic aortic muscle from hypertensive rats. *Am J Physiol Heart Circ Physiol* 1991; 260:H507-H515.
40. Egashira K, Morgan KG, Morgan JP. Effects of cocaine on excitation-contraction coupling of arterial smooth muscle from the ferret. *J Clin Invest* 1991; 87:1322-1328.
41. Resnick MS, Maitland LA, Morgan KG. Flosequinan, a vasodilator with a novel mechanism of action. *Br J Pharmacol* 1991; 102:974-978.
42. Papageorgiou P, Morgan KG. Increased Ca^{2+} signaling after α -adrenoceptor activation in vascular hypertrophy. *Circ Res* 1991; 68:1080-1084.
43. Suematsu E, Resnick M, Morgan KG. Ca^{2+} -independent change in phosphorylation of the myosin light chain during relaxation of ferret aorta by vasodilators. *J Physiol (London)* 1991; 440:85-93.
44. Suematsu E, Resnick M, Morgan KG. Change of Ca^{2+} requirement for myosin phosphorylation by prostaglandin F_{2a} . *Am J Physiol Cell Physiol* 1991; 261:C253-C258.
45. Khalil R, Morgan KG. Imaging of protein kinase C distribution and translocation in living vascular smooth muscle cells. *Circ Res* 1991; 69:1626-1631.
46. Pawlowski J, Morgan KG. Mechanism of intrinsic tone in ferret vascular smooth muscle. *J Physiol (London)* 1992; 448:121-132.
47. Collins E, Walsh MP, Morgan KG. Contraction of single vascular smooth muscle cells by phenylephrine at constant $[Ca^{2+}]_i$. *Am J Physiol Heart Circ Physiol* 1992; 262:H754-H762.
48. Khalil R, Morgan KG. Phenylephrine-induced translocation of protein kinase C and shortening of two types of vascular cells of the ferret. *J Physiol (London)* 1992; 455:585-599.

49. Katsuyama H, Wang C-L, Morgan KG. Regulation of vascular smooth muscle tone by caldesmon. *J Biol Chem* 1992; 267:14555-14558.
50. Khalil RA, Lajoie C, Resnick MS, Morgan KG. Ca^{2+} -independent isoforms of protein kinase C differentially translocate in smooth muscle. *Am J Physiol Cell Physiol* 1992;263:C714-C719.
51. Perreault CL, Allen PD, Hague NL, Morgan KG, Morgan JP. Negative inotropic and relaxant effects of cocaine on myopathic human ventricular myocardium and epicardial coronary arteries, *in vitro*. *Cardiovasc Res* 1993;27:262-268.
52. Simons M, Morgan KG, Parker C, Collins E, Rosenberg RD. The protooncogene *c-myc* mediates an intracellular calcium rise during the late G_1 phase of the cell cycle. *J Biol Chem* 1993; 268:627-632.
53. Katsuyama H, Morgan KG. Mechanisms of Ca^{2+} -independent contraction in single permeabilized ferret aorta cells. *Circ Res* 1993;72:651-657.
54. Aburto TK, Lajoie C, Morgan KG. Mechanisms of signal transduction during alpha-2 adrenergic receptor-mediated contraction of vascular smooth muscle. *Circ Res* 1993;72:778-785.
55. Khalil RA, Morgan KG. PKC-mediated redistribution of mitogen-activated protein kinase during smooth muscle cell activation. *Am J Physiol Cell Physiol* 1993;265:C406-C411.
56. Kiuchi K, Sato N, Shannon RP, Vatner DE, Morgan K, Vatner SF. Depressed β -adrenergic receptor- and endothelium-mediated vasodilation in conscious dogs with heart failure. *Circ Res* 1993;73:1013-1023.
57. Khalil RA, Lajoie C, Morgan KG. In situ determination of the $[\text{Ca}^{2+}]_i$ threshold for translocation of the alpha protein kinase C isoform. *Am J Physiol Cell Physiol* 1994;266:C1544-C1551.
58. Szal SE, Repke JT, Seely EW, Graves SW, Parker CA, Morgan KG. $[\text{Ca}^{2+}]_i$ signalling in pregnant human myometrium. *Am J Physiol Endocrinol Metab* 1994;267:E77-87.
59. Kiuchi K, Shannon RP, Sato N, Bigaud M, Lajoie C, Morgan KG, Vatner SF. Factors involved in delaying the rise in peripheral resistance in developing heart failure. *Am J Physiol Heart Circ Physiol* 1994;267:H211-216.
60. Liou Y-M, Morgan KG. Redistribution of PKC isoforms in association with vascular hypertrophy of rat aorta. *Am J Physiol Cell Physiol* 1994; 267:C980-C989.
61. Parker CA, Takahashi K, Tao T, Morgan KG. Agonist-induced redistribution of calponin in contractile vascular smooth muscle cells. *Am J Physiol Cell Physiol* 1994; 267:C1262-C1270.
62. Yoo J, Ellis R, Morgan KG, Hai C-M. Mechanosensitive modulation of myosin phosphorylation and phosphatidylinositol turnover in smooth muscle. *Am J Physiol Cell Physiol* 1994; 267:C1657-C1665.
63. Doctrow SR, Abelleira SM, Curry LA, Heller-Harrison R, Kozgrich JW, Malfroy B, McCarroll LA, Morgan KG, Morrow AR, Musso GR, Smart JL, Straub JA, Turnbull B, Gloff CA. The bradykinin analog RMP-7 increases intracellular free calcium in rat brain microvascular endothelial cells. *JPET* 1994; 271:229-237.
64. Khalil RA, Menice CB, Wang C-L A, Morgan KG. Phosphotyrosine-dependent targeting of MAP kinase in differentiated contractile vascular cells. *Circ Res* 1995; 76: 1101-1108.

65. Mii S, Khalil RA, Morgan KG, Ware JA, Kent KC. Mitogen-activated protein kinase and proliferation of human vascular smooth muscle cells. *Am J Physiol Heart Circ Physiol* 1996; 270:H142-H150.
66. Butler WE, Peterson JW, Zervas NT, Morgan KG. Intracellular calcium, myosin light chain phosphorylation, and contractile force in experimental cerebral vasospasm. *Neurosurgery* 1996; 38:781-787.
67. Jahn L, Sadoshima J-I, Greene A, Parker C, Morgan KG, Izumo S. Conditional differentiation of heat- and smooth-muscle-derived cell lines transformed by a temperature-insensitive mutant of SV40 large T-antigen. *J Cell Sci* 1996; 109:397-407.
68. Horowitz A, Clement-Chomienne O, Walsh M, Tao T, Katsuyama H, Morgan KG. Effects of calponin on force generation by single smooth muscle cells. *Am J Physiol Heart Circ Physiol* 1996; 270:H1858-H1863.
69. Horowitz A, Clement-Chomienne O, Walsh MP, Morgan KG. ϵ isoenzyme of protein kinase C induces a Ca^{2+} -independent contraction in vascular smooth muscle. *Am J Physiol Cell Physiol* 1996; 271:C589-C594.
70. Jain M, Dai HB, Carozza JP, Sellke F, Morgan KG. Intrinsic tone as potential vascular reserve in conductance and resistance vessels. *Circulation* 1996; 94:1083-1088.
71. Graceffa P, Adam LP, Morgan KG. Strong interaction between smooth muscle caldesmon and calponin. *J Biol Chem* 1996; 271:30336-30339.
72. Taggart MJ, Menice CB, Morgan KG, Wray S. Effect of metabolic inhibition on intracellular Ca^{2+} , phosphorylation of myosin regulatory light chain and force in isolated rat smooth muscle. *J Physiol (London)*. 1997; 499:485-496.
73. Tseng S, Kim R, Kim T, Morgan KG, Hai C-M. F-actin disruption attenuates agonist-induced $[\text{Ca}^{2+}]_i$, myosin phosphorylation and force in smooth muscle. *Am J Physiol Cell Physiol* 1997; 272:C1960-C1967.
74. Rittenhouse AR, Parker C, Brugnara C, Morgan KG, Alper SL. Inhibition of maxi-K currents in ferret portal vein smooth muscle cells by the antifungal clotrimazole. *Am J Physiol Cell Physiol* 1997; 273:C45-C56.
75. Menice CB, Hulvershorn J, Adam LP, Wang CLA, Morgan KG. Calponin and mitogen-activated protein kinase signaling in differentiated vascular smooth muscle. *J Biol Chem* 1997; 272(40):25157-25161.
76. Tang SQ, Morgan KG, Parker C, Ware JA. Requirement for protein kinase C (θ) for cell cycle progression and formation of actin stress fibers and filopodia in vascular endothelial cells. *J Biol Chem* 1997; 272 (45):28704-28711.
77. Parker CA, Takahashi K, Tang JX, Tao T, Morgan KG. Cytoskeletal targeting of calponin in differentiated, contractile smooth muscle cells of the ferret. *J Physiol (London)*. 1998; 508.1:187-198.
78. Dessy C, Kim I, Sougnez CL, Laporte R, Morgan KG. A role for MAP kinase in differentiated smooth muscle contraction evoked by α -adrenoceptor stimulation. *Am J Physiol Cell Physiol* 1998; 275:C1081-C1086.

79. Matsuda N, Tofukuji M, Morgan KG, Sellke F. Coronary microvascular protection with mg²⁺: effects on intracellular calcium regulation and vascular function. *Am J Physiol Heart Circ Physiol* 1999; 276:H1124-H1130.
80. Tofukuji M, Matsuda N, Dessy C, Morgan KG, Sellke F. Intracellular free calcium accumulation in ferret vascular smooth muscle during crystalloid and blood cardioplegic infusions. *J Thorac Cardiovasc Surg* 1999; 118:163-172.
81. Lee Y-H, Kim I, Laporte R, Walsh MP, Morgan KG. Isozyme-specific inhibitors of PKC translocation: effects on contractility of single permeabilized vascular muscle cells of the ferret. *J Physiol (London)* 1999; 517(Pt 3):709-720.
82. Taggart MJ, Lee Y-H, Morgan KG. Cellular redistribution of PKC α , rhoA and ROK α following smooth muscle agonist stimulation. *Exp Cell Res* 1999; 251(1):92-101.
83. Matsuda N, Tofukuji M, Morgan KG, Sellke FW. Influence of oxygenation on endothelial modulation of coronary vasomotor function during hyperkalemic cardioplegia. *Surgery* 1999; 126(2):264-71.
84. Matsuda N, Morgan KG, Sellke FW. Preconditioning improves cardioplegia-related coronary microvascular smooth muscle hypercontractility: role of K_{ATP} channels. *J Thorac Cardiovasc Surg* 1999; 118(3):438-445.
85. Leinweber BD, Leavis PC, Grabarek Z, Wang C-LA, Morgan KG. Extracellular regulated kinase (ERK) interaction with actin and the calponin homology (CH) domain of actin-binding proteins. *Biochem J* 1999; 344(1):117-123.
86. Lee Y-H, Gallant C, Guo H, Li Y, Wang C-LA, Morgan KG. Regulation of vascular smooth muscle tone by N-terminal region of caldesmon: Possible role of tethering actin to myosin. *J Biol Chem* 2000; 275(5):3213-20.
87. Kim I, Je H-D, Gallant C, Zhan Q, Van Riper D, Badwey JA, Singer HA, Morgan KG. Ca²⁺-calmodulin-dependent protein kinase II-dependent activation of contractility in ferret aorta. *J Physiol (London)* 2000; 526.2:367-374.
88. Kim I, Leinweber BD, Morgalla M, Butler WE, Seto M, Sasaki Y, Peterson JW, Morgan KG. Thin and thick filament regulation of contractility in experimental cerebral vasospasm. *Neurosurgery* 2000; 46:440-7.
89. Taggart MJ, Leavis P, Feron O, Morgan KG. Inhibition of PKC α and rhoA translocation in differentiated smooth muscle by a caveolin scaffolding domain peptide. *Exp Cell Res* 2000; 258:72-81.
90. Matsuda N, Morgan KG, Sellke FW. Effects of pinacidil on coronary Ca²⁺-myosin phosphorylation pathway in cold potassium cardioplegia model. *Am J Physiol Heart Circ Physiol* 2000; 279(3):H882-H888.
91. Dessy C, Matsuda N, Hulvershorn J, Sougnez CL, Sellke FW, Morgan KG. Evidence for involvement of the PKC- α isoform in myogenic contractions of the coronary microcirculation. *Am J Physiol Heart Circ Physiol* 2000; 279(3):H916-H923.
92. Leinweber B, Parissenti AM, Gallant C, Gangopadhyay S, Kirwan-Rhude A, Leavis PC, Morgan KG. Regulation of protein kinase C by the cytoskeletal protein calponin. *J Biol Chem* 2000; 275:40329-40336.

93. Hulvershorn J, Gallant C, Wang C-LA, Dessy C, Morgan KG. Calmodulin levels are dynamically regulated in living vascular smooth muscle cells. *Am J Physiol Heart Circ Physiol* 2001; 280:H1422-H1426.
94. Je H-D, Gangopadhyay SS, Ashworth TD, Morgan KG. Calponin is required for agonist-induced signal transduction--evidence from an antisense approach in ferret smooth muscle. *J Physiol (London)* 2001; 537.2:567-577.
95. Yeon DS, Kim JS, Ahn DS, Kwon SC, Kang BS, Morgan KG, Lee YH. Role of protein kinase C-or RhoA-induced Ca²⁺ sensitization in stretch-induced myogenic tone. *Cardiovasc Res* 2002; 53(2):431-438.
96. Shin HM, Je HD, Gallant C, Tao TC, Hartshorne DJ, Ito M, Morgan KG. Differential association and localization of myosin phosphatase subunits during agonist-induced signal transduction in smooth muscle. *Circ Res* 2002; 90(5):546-553.
97. Li Y, Je HD, Malek S, Morgan KG. ERK1/2-mediated phosphorylation of myometrial caldesmon during pregnancy and labor. *Am J Physiol* 2003; 284:R192-R199.
98. Gangopadhyay SS, Barber AL, Gallant C, Grabarek Z, Smith JL, Morgan KG. Differential functional properties of calmodulin-dependent protein kinase IIgamma variants isolated from smooth muscle. *Biochem J* 2003; 372(Pt 2):347-357.
99. Shin HM, Morgan KG. Vasodilation by Banhabackchulchunmatang, a Chinese medicine, is associated with negative modulation of PKC α activation and NO production. *Life Sciences* 2003; 74:723-732.
100. Je HD, Gallant C, Leavis PC, Morgan KG. Caveolin-1 regulates contractility in differentiated vascular smooth muscle. *Am J Physiol* 2004; 286:H91-H98.
101. Li Y, Je HD, Malek S, Morgan KG. Role of ERK1/2 in uterine contractility and preterm labor in rats. *Am J Physiol Regul Integr Comp Physiol* 2004; 287(2):R328-35.
102. Gangopadhyay SS, Takizawa N, Gallant C, Barber AL, Je HD, Smith TC, Luna EJ, Morgan KG. Smooth muscle archvillin: a novel regulator of signaling and contractility in vascular smooth muscle. *J Cell Sci* 2004; 117(Pt 21):5043-57.
103. Gallant C, You, JY, Sasaki Y, Grabarek Z, Morgan KG. MARCKS is a major PKC-dependent regulator of calmodulin targeting in smooth muscle. *J Cell Sci* 2005;118(Pt 16):3595-605.
104. Marganski W, Gangopadhyay SS, Je HD, Gallant C, Morgan KG. Targeting of a novel Ca²⁺/calmodulin-dependent protein kinase II is essential for extracellular signal-regulated kinase-mediated signaling in differentiated smooth muscle cells. *Circ Res* 2005; 97(6):541-9.
105. Jang GJ, Ahn DS, Cho YE, Morgan KG, Lee YH. C(2)-ceramide induces vasodilation in phenylephrine-induced pre-contracted rat thoracic aorta: role of RhoA/Rho-kinase and intracellular Ca(2+) concentration. *Naunyn Schmiedebergs Arch Pharmacol* 2005; 372: 242-50.
106. Ryu SK, Ahn DS, Cho YE, Choi SK, Kim YH, Morgan KG, Lee YH. Augmented sphingosylphosphorylcholine-induced Ca(2+)-sensitization of mesenteric artery contraction in spontaneously hypertensive rat. *Naunyn Schmiedebergs Arch Pharmacol* 2006; 373(1):30-6.
107. Deng L, Trepast X, Butler JP, Millet E, Morgan K G, Weitz DA, Fredberg JJ. Fast and slow dynamics of the cytoskeleton. *Nature Materials*, 2006; 5(8):636-40.

108. Li Y, Gallant C, Malek S, Morgan KG. Focal adhesion signaling is required for myometrial ERK activation and contractile phenotype switch before labor. *J Cell Biochem*, 2007; 100:129-140.
109. Ahn DS, Choi SK, Kim YH, Cho, YE, Shin HM, Morgan KG, Lee YH. Enhanced stretch-induced myogenic tone in the basilar artery of spontaneously hypertensive rats. *J Vasc Res*, 2007; 44:182-191.
110. Munevar S, Gangopadhyay SS, Gallant C, Colombo B, Sellke FW, Morgan KG. CaMKII T287 and T305 regulate history-dependent increases in alpha agonist-induced vascular tone, *J Cell Mol Med*, 2008; 12:219-26. PMID:18088385
111. Gangopadhyay SS, Gallant C, Sundberg EJ, Lane WS, Morgan KG. Regulation of CaM kinase II by a small CTD phosphatase *Biochemical JI*, 2008; 412:507-16. [PMC2724867](#)
112. Wu X, Morgan KG, Jones CJ, Tribe RM, Taggart MJ. Myometrial mechanoadaptation during pregnancy: implications for smooth muscle plasticity and remodeling. *JCMM* 2008; 12:1360-73. [PMC2729593](#)
113. Kim HR, Gallant C, Leavis PC, Gunst SJ, Morgan KG. Cytoskeletal Remodeling in Differentiated Vascular Smooth Muscle is Actin Isoform-Dependent and Stimulus-Dependent. *Am J Physiol Cell Physiol*. 2008; 295:C768-78. [PMC2544444](#)
114. Vetterkind S, Morgan KG. The pro-apoptotic protein Par-4 facilitates vascular contractility by cytoskeletal targeting of ZIPK. *J Cell Mol Med* 2009; 13(5): 887-895. PMC2700217
115. Gangopadhyay SS*, Kengni E,* Appel S*, Gallant C, Kim HR, Leavis P, DeGnore J, Morgan KG. Smooth muscle Archvillin is an ERK scaffolding protein. *JBC* 2009 284:17607-15. PMC2719399
116. Li YP, Reznichenko M, Tribe R, Hess P, Taggart MJ, Kim HR, Gangopadhyay S, Morgan KG. Gestation-Dependent Stretch Activates Focal Adhesion Signaling and Modulates Human Myometrial Activation. *PLoS ONE* 2009 4(10):e7489. [PMC2759504](#)
117. Kim HR, Graceffa P, Ferron F, Gallant C, Boczkowska M, Dominguez R, Morgan KG. Actin Polymerization in Differentiated Vascular Smooth Muscle Cells Requires Vasodilator-Stimulated Phosphoprotein (VASP). *Am J Physiol: Cell* 2010; 298:C559-71. [PMC2838578](#)
118. Vetterkind S, Lee E, Sundberg E, Poythress RH, Tao TC, Preuss U, Morgan KG. Par-4: A new activator of myosin phosphatase *Mol Biol Cell* 2010 22:1214-24. PMC2847525.
119. Appel S, Allen, PG, Vetterkind S, Jian-Ping, Jin J-P, Morgan KG. h3/Acidic Calponin: An Actin-binding Protein that Controls ERK1/2 activity in Non-muscle Cells. *Mol Biol Cell* 2010, 21:1409-22. PMC2854098.
120. Appel S, Morgan KG. Scaffolding proteins and non-proliferative functions of ERK1/2. *Comm & Integrative Biol* 2010; 3:354-6. PMID: 20798825
121. Kim HR, Leavis PC, Graceffa P, Gallant C, Morgan KG. A New Method for Direct Detection of the Sites of Actin Polymerization in Intact Cells and Its Application to Differentiated Vascular Smooth Muscle. *Am J Physiol: Cell* 2010; 299:C988-93. 2010. [PMC2980300](#)
122. Gallant C, Appel S, Graceffa P, Leavis P, Lin JJ-C, Gunning, PW, Schevzov G, Chaponnier C, DeGnore J, Lehman W and Morgan KG. Tropomyosin Variants Describe Distinct Functional Subcellular

- Domains In Differentiated Vascular Smooth Muscle Cells. *Am J Physiol: Cell* 2011. 300:1356-65. PMC3118631.
123. Cho Y-E, Ahn D-S, Morgan KG, Lee Y-H. Enhanced contractility and myosin phosphorylation induced by Ca²⁺-independent MLCK activity in hypertensive rats. *Cardiovascular Research* 2011; 91:162-70. [PMC3112018](#)
 124. Vetterkind S, Saphirstein RJ, Morgan KG. Stimulus-specific activation and actin dependency of distinct, spatially separated ERK1/2 fractions in A7r5 smooth muscle cells. *PLoS One* 2012: Volume 7 Issue 2 e30409. [PMC3283592](#)
 125. Jensen MH, Watt J, Hodgkinson J, Gallant C, Appel S, El-Mezgueldi M, Angelini TE, Morgan KG, Lehman W, Moore JR. Effects of basic calponin on the flexural mechanics and stability of F-actin. *Cytoskeleton* 2012 69:49-58. PMID: 22135101
 126. Lehman W, Morgan KG. Structure and Dynamics of the Actin-Based Smooth Muscle Contractile and Cytoskeletal Apparatus. *Journal of Muscle Research and Cell Motility*, 2012; 33: 461-9. PMC3394904
 127. Min J, Reznichenko M, Poythress P, Gallant C, Vetterkind S, Li Y, Morgan KG. Src Modulates Contractile Vascular Smooth Muscle Function via Regulation of Focal Adhesions. *J Cell Physiol*. 2012; 227: 3585-92. [PMC3348426](#)
 128. Baranwal S, Naydenov NG, Harris G, Dugina V, Morgan KG, Chaponnier C, Andrei I, Ivanov AI. Non-redundant roles of cytoplasmic beta- and gamma-actin isoforms in regulation of epithelial apical junctions. *MBoC* 2012; 23:3542-53. PMID: 22855531 PMCID3442403
 129. Kang YH, Yang IJ, Morgan KG, Shin HM. Cinnamyl alcohol attenuates vasoconstriction by activation of K⁺ channels via NO-cGMP-protein kinase G Pathway and inhibition of Rho-kinase. *Exp. Mol. Med*. 2012; 44:749-55. PMID:23178275
 130. Yilmaz M, Gangopadhyay SS, Leavis P, Grabarek Z, Morgan KG. Phosphorylation at Ser26 in the ATP binding site of Calcium Calmodulin dependent Kinase II as a mechanism for switching off the kinase activity. *Bioscience Reports* 2013; 33: (2),art:e00116.doi:10.1042. PMC3566533
 131. Saphirstein RJ, Gao YZ, Jensen MH, Gallant CM, Vetterkind S, Moore JR, Kathleen G. Morgan KG. The Focal Adhesion: A Regulated Component of Aortic Stiffness. *PLoS One* 2013; 8:e62461 PMID: 23626821.
 132. Poythress RH, Gallant C, Vetterkind S, Morgan KG. Vasoconstrictor-induced endocytic recycling regulates focal adhesion protein localization and function in vascular smooth muscle. *Am J Physiol Cell Physiol*. 2013; 305:C215-27. PMID:23703522.
 133. Vetterkind S, Poythress RH, Lin QQ, Morgan KG. Hierarchical scaffolding of an ERK1/2 activation pathway. *Cell Communication and Signaling*. 2013; 11:65. PMID: 23987506.
 135. Kim HR, Gallant C, Morgan KG. Regulation of PKC Auto-Phosphorylation by Calponin in Contractile Vascular Smooth Muscle. *BioMed Research International* 2013; 358643. PMID 24350264.
 136. Jensen MH, Morris EJ, Galant C, Graceffa P, Leavis P, Morgan KG, Weitz DA, Moore JR. Mechanism of calponin stabilization of Cross-linked actin networks. *Biophysical J*; 2014 106(4):793-800. PMID 24559992.

137. Gao YZ, Saphirstein RJ, Yamin R, Suki B, Morgan KG. Aging Impairs Smooth Muscle Mediated Regulation of Aortic Stiffness: A Defect in Shock Absorption Function?* *Am J Physiol Heart Circ Physiol*. 2014; 307:H1252-61. PMID 25128168.
*Chosen for distinction in scholarship by APS select.
138. Saphirstein RJ, Gao YZ, Lin QQ, Morgan KG. Cortical Actin Regulation Modulates Vascular Contractility and Compliance in Veins. *J Physiol* 2015; 593:3929-41. PMID 26096914. *Highlighted in cover photo of journal
139. Fry JL, Shiraishi Y, Turcotte R, Yu X, Gao YZ, Bachschmid M, Zhang K, Morgan KG, Cohen RA, Seta F. Vascular Smooth Muscle Sirtuin-1 Protects Against Aortic Dissection During Angiotensin II-induced Hypertension. *J Am Heart Assoc*. 2015 4(9):e002384. PMID 26376991.
140. Nicholson CJ, Seta F, Lee S, Morgan KG. MicroRNA-203 mimics age-related aortic smooth muscle dysfunction of cytoskeletal pathways. *Journal of Cellular and Molecular Medicine*. 2017, *JCMM* 21 (1), 81-95. PMID 27037223.
141. Vetterkind S, Lin QQ, Morgan KG. A novel mechanism of ERK1/2 regulation in smooth muscle involving acetylation of the ERK1/2 scaffold IQGAP1. *Scientific Reports* published online August 24th, 2017.
142. Nicholson CJ*, Singh K*, Saphirstein RJ, Gao YZ, Li Q, Chiu JG, Leavis P, Verwoert, GC Mitchell GF, AortaGen Consortium, Porter TM, Morgan KG. Reversal of aging-induced increases in aortic stiffness by targeting cytoskeletal protein-protein interfaces. *Journal of the American Heart Association*, 2018.
143. Kajuluri L, Li Y, Morgan KG. The uterine myocyte, contractile machinery and proteins of the myometrium and their relationship to the dynamic nature of myometrial function. *Current Opinion in Physiology*, 10.1026/j.cophys.2019.09.006
144. Erik N. Taylor^{1,2*}, Nasi Huang², Jonathan Wisco³, Yandan Wang⁴, Kathleen G. Morgan⁴, and James A. Hamilton² The brains of aged mice are characterized by altered tissue diffusion properties and cerebral microbleeds. *Journal of Translational Medicine* in press 2020

Abstracts not yet published in full:

Society for Neuroscience 2019 Meeting

Aging-induced vascular damage of the mouse thalamus is associated with both motor and memory defects
*Y. WANG, E. TAYLOR, K. M. KANTAK, B. ZIKOPOULOS, F. SETA, J. HAMILTON, K. MORGAN;
Boston Univ., Boston, MA

Aging is a well-known risk factor underlying cardiovascular disease, but we know little about the effects of aging on the vasculature in the brain. We studied the relationship between aging and vascular damage in the brain of the mouse and correlated vascular changes with behavioral changes in motor and memory-related tasks across age groups. The present study included three age groups: 3 (young), 17-18 (middle aged) and 24-25 (aged) month old C57B/6J male mice. We used a combination of histology (Prussian Blue staining, n=16) and MRI T2* imaging (n=9) to reveal the relationship between aging and vasculature damage in the brain. We conducted Novel Object Recognition tests (n=16) to test for cognitive defects associated with brain vascular damage. The histological data identified the mouse thalamus especially ventral posterolateral nucleus (VPM) and medial groups of the dorsal thalamus (MED), as the most vulnerable region for aging-induced microbleeds. The functional assay data indicated that vascular defects with aging may lead to motor and memory deficits in the mouse model. The MRI data also indicated the timeline of accumulation of thalamic microbleeds, and significant accumulation is first seen at middle-age, earlier than previously thought. The present study points to vascular disease as a possible factor as early as middle age in causing potentially irreversible brain damage. **Support:** NIH grant NIA R01AG53274

AHA Vascular Biology (NAVBO) Meeting 2020

[Jeff Arni Valisno](#), [Pavania Elavalakanar](#), CJ Nicholson, Kuldeep Singh, Dorina Avram, Richard A Cohen, Gary Mitchel, Kathleen G Morgan, Francesca Seta Bcl11b is a Newly Identified Regulator of Vascular Smooth Muscle Function and Stiffness
, April 2018, Arteriosclerosis Thrombosis and Vascular Biology 38(Suppl_1) DOI:
10.1161/atvb.38.suppl_1.512

Christopher J. Nicholson, Yi Xing, Sophie Lee, Stephanie Liang, Shivani Mohan, Caitlin O'Rourke, Joshua Kang and Kathleen G. Morgan*

Aging causes an aortic dysfunction phenotype by targeting the expression of members of the ERK pathway for Vascular Biology 2020 - **NAVBO Annual Meeting** Abstract 77

AHA Basic Cardiovascular Sciences (BCVS) Conference 2020

Non-muscle Myosin II Regulates Aortic Stiffness via Tension-dependent Phosphorylation of Specific Focal Adhesion Proteins.

Kuldeep Singh, Anne Bright Kim and Kathleen G Morgan

Non-muscle myosin II plays a role in many fundamental cellular processes including cell adhesion, migration and cytokinesis. However, its role in vascular function is not well understood. Here, we investigated the function of non-muscle myosin II in the biomechanical properties of mouse proximal aorta. We found that blebbistatin, a specific inhibitor of non-muscle myosin II decreases agonist-induced aortic stress and stiffness in a dose-dependent manner. We also specifically demonstrate, in freshly isolated contractile aortic smooth muscle cells, using deconvolution microscopy that the NM myosin IIA isoform co-localizes with contractile filaments in the core of the cell as well as in the non-muscle cell cortex. However, the NM myosin IIB isoform is only colocalized with contractile filaments, and is excluded from the cell cortex. Furthermore, both siRNA knockdown of NMIIA and NMIIB isoforms in a differentiated smooth muscle cell line A7r5 and blebbistatin-mediated inhibition of NM myosin II suppresses agonist-activated increases in phosphorylation of FAK Y925 and paxillin Y118. Thus, in the present study, we show, for the first time, that NM myosin II regulates aortic stiffness and that this regulation is mediated at least in part through the tension-dependent phosphorylation of focal adhesion proteins FAK and paxillin. Support: NIA AG053274.

NAVBO

Yi Xing Nicholson CJ, Morgan KG **Vascular Biology 2020 - NAVBO Annual Meeting** Abstract 77 titled, Aging causes an aortic dysfunction phenotype by targeting the expression of members of the ERK pathway for the ERK Pathway.

Book Chapters:

1. Morgan KG, Brozovich FV. Intracellular calcium levels and arterial smooth muscle function. In: *Essential Hypertension and Calcium: Calcium Ions, Calcium Channels, Calcium Agonists and Antagonists*. New York: Academic Press, 1989:84-111.
2. Morgan KG, Papageorgiou P. $[Ca^{2+}]_i$ distribution and signalling in vascular hypertrophy. In: *Advances in Experimental Medicine and Biology*. New York: Plenum Press, 1991:303-314.
3. Perreault CL, Morgan KG, Morgan JP. Effects of cocaine on intracellular calcium handling in cardiac and vascular smooth muscle. In: Thadani P, ed. *Cardiovascular Toxicity of Cocaine: Underlying Mechanisms*. Rockville: USDA, 1991:139-153.
4. Morgan KG. Role of calcium in the regulation of smooth muscle tone. In: Lenfant C, Brody J, Tkachuk VA, Center DM, eds. *Signal Transduction in Lung Cells*, 65th vol. of *Lung Biology in Health and Disease*. New York: Marcel Decker, 1993:335-349.
5. Khalil RA, Morgan KG. Enzyme translocations during smooth muscle activation. In: Bárány M, ed. *Biochemistry of Smooth Muscle Contraction*. San Diego: Academic Press, 1996:307-318.
6. Morgan KG, Kim I, Butler WE. Thick and thin filament regulation of smooth muscle contraction in health and disease. In: Kohama K and Sasaki Y, eds. *Molecular Mechanisms of Smooth Muscle Contraction*. Georgetown, TX: R. G. Landes, 1999:81-96.
7. Vetterkind S, Morgan KG. Regulation of smooth muscle contractions. In: *Muscle; Fundamental biology and mechanisms of disease*. Amsterdam, Elsevier, eds Hill JA and Olson EN, 2012: Volume 1 pp 1173-1182.
8. Nicholson CJ, Morgan KG. The role of non-coding RNA in the control of vascular contractility and disease. In: *Vascular Smooth Muscle Cells in Health and Disease*” Thompson Reuters, ed. Hai C-M, published 2016.

Reviews/Commentaries:

1. Morgan JP, Morgan KG. Calcium and Cardiovascular Function: Intracellular calcium levels during contraction and relaxation of mammalian cardiac and vascular smooth muscle as detected with aequorin. *Am J Med* 1984; 77 (Suppl 5A):33-46.
2. Morgan KG. The role of $[Ca^{2+}]_i$ in the maintenance of vascular smooth muscle tone. *Am J Cardiol* 1987; 59:24A-28A.
3. Morgan KG. Calcium and vascular smooth muscle tone. *Am J Med* 1987; 82:9-15.
4. Morgan KG, Bradley AB, DeFeo TT. Calcium transients in smooth muscle. *Ann NY Acad Sci* 1988; 522:328-337.
5. Morgan KG, Papageorgiou P, Jiang MJ. Pathophysiological role of calcium in the development of vascular smooth muscle tone. *Am J Cardiol* 1989; 64:35F-40F.
6. Morgan JP, Morgan KG. Intracellular calcium and cardiovascular function in heart failure: Effects of pharmacologic agents. *Cardiovasc Drugs Ther* 1989; 3:959-970.
7. Morgan KG. The role of calcium in the control of vascular tone as assessed by the Ca^{2+} indicator aequorin. *Cardiovasc Drugs Ther* 1990; 4:1355-1362.
8. Morgan KG, Suematsu E. Effect of calcium and vascular smooth muscle tone. *Am J Hypertension* 1990; 3:291S-298S.
9. Morgan JP, Perreault CL, Morgan KG. The cellular basis of contraction and relaxation in cardiac and vascular smooth muscle. *Am Heart J* 1991; 121:961-968.
10. Khalil RA, Morgan KG. Protein kinase C—A second E-C coupling pathway in vascular smooth muscle. *News in Physiological Sciences* Feb 1992; 7:10-15.
11. Morgan KG, Khalil RA, Suematsu E, Katsuyama H. Calcium-dependent and calcium-independent pathways of signal transduction in smooth muscle. *Jap J Pharmacol* 1992; 58(suppl 2):47-53.
12. Morgan KG. Ca^{2+}_i versus $[Ca^{2+}]_i$. *Biophysical J* 1993; 65:561-562.
13. Walsh MP, Andrea JE, Allen BG, Clement-Chomienne O, Collins EM, Morgan KG. Smooth muscle protein kinase C. *Can J Physiol Pharmacol* 1994; 72:1392-1399.
14. Horowitz A, Menice CB, Laporte R, Morgan KG. Mechanisms of smooth muscle contraction. *Physiological Reviews*, 1996; 76:967-1003.
15. Walsh MP, Horowitz A, Clement-Chomienne O, Andrea JE, Allen BG, Morgan KG. Protein kinase C mediation of Ca^{2+} -independent contractions of vascular smooth muscle. *Biochem & Cell Biol* 1996; 74:485-502.
16. Morgan KG, Leinweber BD. PKC-dependent signalling mechanisms in differentiated smooth muscle. *Acta Physiol Scand* 1998; 164:495-505.
17. Lee YH, Hwang MK, Morgan KG, Taggart MJ. Receptor-coupled contractility of uterine smooth muscle: from membrane to myofilaments. *Exp Physiol* 2001; 86.2:283-288.

18. Morgan KG. Nonmuscle Motility/Cytoskeleton. *Am J Physiol Cell Physiol* 2001; 280:C1634-C1635.
19. Morgan KG, Gangopadhyay SS. Invited Review: Cross-bridge regulation by thin filament-associated proteins. *J Appl Physiol* 2001; 91:953-962.
20. Wier WG, Morgan KG. α_1 -Adrenergic signaling mechanisms in contraction of resistance arteries. *Rev Physiol Biochem Pharmacol* 2003; 150:91-139.
21. Taggart MJ, Morgan KG. Regulation of the uterine contractile apparatus and cytoskeleton. *Seminars in Cell Developmental Biology*, 2007; 18:296-304.
22. Morgan KG. Contractility in Health and Disease. *Journal of Cellular and Molecular Medicine*, 2008; 12, 2157.
23. Kim HR, Appel S, Vetterkind S, Gangopadhyay SS, Morgan KG. Smooth muscle signaling pathways in health and disease. *Journal of Cellular and Molecular Medicine*, 2008; 12: 2165-80. [PMC2692531](#)
24. Appel S, Morgan KG. Scaffolding proteins and non-proliferative functions of ERK1/2. *Communicative and Integrative Biology*, 2010; 3:354-6.
25. Yamin R, Morgan KG. Deciphering Actin Cytoskeletal Function In the Contractile Vascular Smooth Muscle Cell. *Journal of Physiology*, 2012 590: 4145-54 .
26. Lehman W, Morgan KG. Structure and dynamics of the actin-based smooth muscle contractile and cytoskeletal apparatus. *J. Muscle Res Cell Motil*, 2012 33:461-9. PMID 22311558.
26. Saphirstein R, Morgan KG. The Contribution of Vascular Smooth Muscle to Aortic Stiffness Across Length Scales. *Microcirculation* 2014; 21(3):201-7. PMID: L24635219.
27. Morgan KG. The Importance of the Smooth Muscle Cytoskeleton to Pre-term Labour. *Experimental Physiology* 2014; 99(3)525-9. PMID: 24121284.
28. Seta F, Morgan K, Cohen R, Coleman D, Corkey R, Ravid K. The Arterial Stiffness Affinity Research Collaborative (ARC): A Successful Example of Team Science. Evans Center ARC Proceedings, 2015.
29. Brozovich, FV, Nicholson CJ, Degen CV, Gao YZ, Aggarwal M, Morgan KG. Mechanisms of Vascular Smooth Muscle Contraction and the Basis for Pharmacologic Treatment of Smooth Muscle Disorders. *Pharmacological Reviews*, Apr;68(2):476-532. 2016. PMID:27037223.
30. Kajuluri, LP, Li, Y and Morgan KG. The Uterine Myocyte, Contractile Machinery and Proteins of the Myometrium and their Relationship to the Dynamic Nature of Myometrial Function. Pregnancy and the Myometrium. *Current Opinions in Physiology*. In Press.

Patents & Discoveries Filed:

Morgan KG, Li Y, inventors; Boston Biomedical Research Institute, Inc. assignee. Methods for Delaying or Inducing Labor. US patent pending.

BU-2011-0184 NP Ref. No.: 701586-071820-P Discovery filed: Permeant cytoskeletal peptides to treat adverse cardiovascular outcomes. Filed 2011.

Research Funding Information:

Current:

- 12/15/2018-10/31/22 NIH R01HL136224, Co-investigator, J. Miano, PI, "The Role of Smooth Muscle Calponin in Vascular Pathobiology". Total \$2,348,454. Subcontract \$462,296
- 9/01/2017-5/31/2022 NIH R01AG053274, Principal Investigator KMorgan. "Actin and focal adhesion remodeling as therapeutic targets in cardiovascular disease". \$2,606,469.
- 9/1/19-8/31/24 Co-investigator, PI, Xi-long Zheng. Role of Smooth Muscle Autophagy in Aging-Associated Vascular Stiffness. Heart and Stroke Foundation of Canada (CIHR). \$960,000.
- 5/18/19- Aortic Stiffness as the Causal Factor of Increased brain bleeds in APOE knock out mice." Eamon Khatibifar (medical student) KG Morgan (mentor). Agency: NHLBI, T32.
- Pending Co-investigator, PI Lynne Coluccio, MyosinI in Smooth Muscle Contraction. Subcontract \$275,000.
- Co-investigator, PI Allison Dennis, Multispectral and Hyperspectral Preclinical Imager Spanning the Visible, NIR-I and NIR-II.
- Principal Investigator KMorgan "A New Approach to Prevent Aging-Induced Damage to High Flow Organs" 2021 Glenn foundation for Medical Research. Breakthroughs in Gerontology (BIG) Program

Completed:

- 9/01/2016-3/31/2018 NIH R56 AG053274, Principal Investigator K Morgan. "Actin and focal adhesion remodeling as therapeutic targets in cardiovascular disease". \$510,000.
- 2014-2017: NIH K-99, Role: Co-mentor of Hari Parameswaran. "Extracellular determinants of airway smooth muscle force: A new paradigm for sustained airway constriction".
- 2015-2017: NIH R21 AG050599, Principal Investigator. "The Role of the Cytoskeleton in Vascular Aging". \$445,000,
- 2017 Local: BU UROP Summer Fellowship Award to Caitlin O'Rourke, summer of 2017. "Molecular targets affected by a program of microRNAs causing aortic aging". Role: Mentor.
- 2017 Local: BU UROP Summer fellowship Award to Rebecca Williams, summer of 2017. "Biomechanics of aging aortas". Role: Mentor.
- 2007-2014 NIH 1P01 HL86655 (1-5), Principal Investigator/Program Director of P01, Project 1 and Core A "Dynamics of the Vascular Smooth Muscle Cytoskeleton" Total: \$8.8M
- 1983-2012 NIH 2R01 HL31704, Principal Investigator

- "Regulation of Contraction and Growth of Blood Vessels" Total: \$3.47M
- 2006-2012 NIH 1R01 HL080003, Principal Investigator
"Subcellular Organization of Signaling in Smooth Muscle" Total: \$1.2M
- 2003-2009 NIH 1 R01 HD043054 (1-6), Principal Investigator
"Signaling and Uterine Contractility during Pregnancy" Total:\$1.7M
- 2009 Boston University UROP grant Mentor (John Min PI) "The role of Src in smooth muscle contractility."
- 2006-2007 NIH 1R13 HL086301, Principal Investigator
"Conference Proposal: Smooth Muscle"
- 2004-2007 NRSA 1F32 HL74470 Mentor (Principal Investigator: Samudra S. Gangopadhyay) "CaMK II Variants and Vascular Smooth Muscle Function"
- 2003-2006 Wellcome Trust Project Grant (1-3), Collaborator (Principal Investigator: Michael Taggart) "A Study of Upstream and Downstream Partners of the RhoA/Rho Kinase Signalling Pathway in Human Myometrium"
- 2003-2004 FAER Research Training Grant (1-2), Mentor (Principal Investigator: Yunping Li) "Myometrial Quiescence and Preterm Labor—Toward a Molecular Understanding"
- 2002-2004 Wellcome Biomedical Collaboration Grant 066393/Z/01/Z (1-3), Collaborator (Principal Investigator: Michael Taggart) "Molecular Mechanisms of Human Uterine Smooth Muscle Contractility"
- 2002 Science Center Summer Research Award, Wellesley College Science Center, Co-Sponsor (Lead Investigator: Jae-Young You)
"Targeting and Regulation of Calmodulin in Smooth Muscle Cells"
- 2000-2001 NIH 1S10 RR14631-01, Principal Investigator
"Confocal Microscope Facility", Shared Instrumentation Grant
- 1998-2000 NIH F32 HL10026 (01-02), Sponsor (Principal Investigator: Barbara Leinweber)
"Calponin and Differentiated Vascular Smooth Muscle"
- 1997-2002 PPG P01-AR41637 (6-10), Collaborator (Principal Investigator: C.-L. Albert Wang) "Molecular Mechanisms of Smooth Muscle Regulation"
- 1996-2001 NIH 5R01 HL56035 (1-5), Collaborator 5% (Principal Investigator: John Badwey)
"MAPK in the Contractile Phenotype of Smooth Muscle"
- 1993-1995 Boots Research Award, Principal Investigator
"Effects of Flosequinan on Protein Kinase C"
- 1992-1996 NIH R37 HL33107, Collaborator 5% (Principal Investigator: Steven Vatner)
"Cardiovascular Control in Normal and Disease States"
- 1991-1993 Alkermes Research Award, Principal Investigator
"Mechanisms of Action of Vasodilator Peptides"

- 1990-1994 Zambon Research Award, Principal Investigator
"Intracellular Calcium Blockers"
- 1988-1993 Boots Research Award, Principal Investigator
"Vasodilatory Mechanisms"
- 1989-2006 NIH 1R01 HL42293 (1-18), Principal Investigator
"Contraction of Vascular Smooth Muscle Cells"
- 1987-1992 NIDA R01 DAO5171, Collaborator 7% (Principal Investigator: James P. Morgan)
"Cardiac and Vascular Toxicity of Cocaine"
- 1986-1987 Pfizer Research Award, Principal Investigator
"Ca Channel Blockers and Smooth Muscle E-C Coupling"
- 1984-1989 AHA Established Investigatorship, Principal Investigator
"Intracellular Ca and Contraction of Vascular Smooth Muscle"
- 1983-1986 AHA Grant-in-Aid 83 945, Principal Investigator
"Intracellular Ca²⁺ and Contraction of Vascular Smooth Muscle"
- 1981-1984 NIH R23 HL27847 (1-3), Principal Investigator
"Regulation of Contraction of Small Blood Vessels" (Converted to HL31704 in 1983)