

CURRICULUM VITAE

Colleen Marie Brophy, M.D.

Professor of Surgery
Division of Vascular Surgery
Vanderbilt University
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PROFILE: I am a surgeon, scientist, and entrepreneur. My clinical interest is in complex distal infrainguinal vascular reconstructions. My research interest is in the area of smooth muscle relaxation and the goal of my project is to develop methods to enhance vein graft patency. I am committed to a transdisciplinary “bedside-to-bench-to-bedside” approach to research. I am a founder and former CEO of a biotechnology start up company AzERx that was acquired by Capstone Therapeutics, Inc. Capstone is developing a peptide based therapeutic to treat fibrotic and vascular disorders and is entering phase 2 clinical trials. Finally, I am interested in developing and promoting leadership training for women in science, engineering, and health care.

EDUCATION:

B.S., Chemistry with an interdisciplinary emphasis in Molecular Biology,
University of Utah, 1979
M.D., University of Utah College of Medicine, 1983

POST GRADUATE TRAINING:

7/83-6/87 Intern and Resident, General Surgery, Yale University
7/87-6/88 Chief Resident and Instructor, Department of Surgery, Yale University
10/88-10/89 Postdoctoral Fellow, Yale University, Department of Surgery
7/89-6/91 Vascular Fellow, New England Deaconess Hospital, Harvard Surgical Service

PROFESSIONAL APPOINTMENTS:

7/88-10/88 Consultant, General Surgery, Umtata General Hospital, Umtata, Transkei, South Africa
7/91 - 6/92, Instructor in Surgery, Yale University, Department of Surgery
6/92 - 1/93, Associate Research Scientist, Yale University, Department of Surgery
1/93 - 6/93, Assistant Professor, Yale University, Department of Surgery
7/91 - 6/93, Staff Surgeon, West Haven VAMC
7/93 - 6/95, Assistant Professor, Medical College of Georgia, Department of Surgery and the Institute for Molecular Medicine and Genetics.

7/95 - 6/00, Associate Professor, Department of Surgery, Medicine (Institute for Molecular Medicine and Genetics), Medical College of Georgia.
7/97 - 6/00, Associate Professor, Department of Cell Biology and Anatomy, Medical College of Georgia
7/95 - 09/00, Staff Surgeon and Chief of Vascular Surgery, Augusta VAMC.
7/97 - 09/00, Associate member, Vascular Biology Center, Medical College of Georgia
7/00 - 09/00, Professor, Departments of Surgery, Medicine (Institute for Molecular Medicine and Genetics) & Cell Biology and Anatomy, Medical College of Georgia
10/00 – 06/30/08, Staff Surgeon, Phoenix VAMC
11/00 – 08/06, Research Professor of Bioengineering, Arizona State University
12/00 - current, Adjunct Professor of Molecular and Cellular Biology, Arizona State University
08/06 – 07/08, Adjunct Professor of Bioengineering, Arizona State University
01/02 – 07/08, Professor of Clinical Surgery, University of Arizona
2005 – current, Faculty member, Institute for Women's Leadership
11/02 – 02/06 Founder, AzERx, INC (Arizona Engineered Therapeutics)
08/06 - current, Adjunct Professor, Kinesiology, Center for Metabolic Biology, Arizona State University
07/01/08 – current, Professor of Surgery (with tenure) Vanderbilt University
07/01/08 – current, Staff Surgeon, Nashville VAMC
07/01/08 – current, Member Vanderbilt Vascular and Heart Institute

ADMINISTRATIVE POSITIONS:

7/91 - 6/93, Director, Noninvasive Vascular Laboratory, West Haven VA
7/92 - 6/93, Coordinator, Resident Rounds, Yale University
2/98 - 09/00, Women in Medicine Liason Officer, Medical College of Georgia
04/00 - 09/00, Chief of Vascular Surgery, Medical College of Georgia
07/03 – 02/05, Director of the PPT Center, Biodesign Institute, ASU
01/05 – 02/06 CEO, AzERx, Inc
05/03 – 07/08, Commissioner, Arizona Disease Control Regulatory Commission
07/02 – 06/08, Chief of Vascular Surgery, Phoenix VAMC

LEADERSHIP TRAINING:

1998/1999 Executive Leadership in Academic Medicine (ELAM)
2003, 2004, 2005, 2006, 2007, 2008 Executives Leading Sustainable Change, Institute for Women's Leadership

COMMITTEE ASSIGNMENTS:

1994 - 1995, Program Committee, Association for Academic Surgery
1995 - 1996, Chair, Program Committee, Academy of Surgical Research
1995 - 1997, Society of University Surgeons Representative to the American Association of Medical Colleges (Executive committee, SUS)
1995 - 1998, member, VA Research and Development Committee
1996, Member Dean's Committee on Faculty Compensation

1996 - 1997, Department of Surgery, Promotion and Tenure Committee
1997 - 2001, SVS/ISCVS, Lifeline Foundation, Board of Directors
1997 - 2000, MD/PhD committee, Medical College of Georgia
1998- 2003, Award committee, William von Liebig Foundation
1998 - 1999, Councillor, Association for Academic Surgery
1998 - 2000 Nominating Committee, Association for Academic Surgery
1998, Chair, Program Committee, Society of University Surgeons, Residents
Research Forum
1998 - 2001, Councillor, Society of University Surgeons
1999 - 2000, AWS representative to the Georgia Chapter of the American
College of Surgeons
1999 - 2000, Ways and Means Committee, Physicians Practice Group, MCG
2000, Chair, Scholarship Committee, Society of University Surgeons
1999 - 2002, Association for Academic Surgery representative to Surgical
Research Committee (SRC) of the American College of Surgeons (member,
Executive Committee, SRC).
2003 - 2007, Chair Committee on Women's Issues, Society of Vascular Surgery
2003- Current, Flinn Foundation ADCRC Translational Research Project
Advisory Committee
2004, 2006, 2008 Chair, Young Surgical Investigators Course, ACS
08/06 – NHLBI steering committee
01/08-current, Chair, Surgical Research Committee, ACS
01/08 – current, Society for Vascular Surgery Research committee
10/08 – Associate Examiner, American Board of Surgery

EDITORIAL BOARDS:

Ad Hoc Reviewer: VA Merit Review Board, Archives of Surgery, Journal of
Vascular Surgery, American Journal of Physiology, Am J Obstet Gyn,
Anesthesiology, Circulation, European Journal of Pharmacology
1994 - 1997, Associate Editor (Vascular), AHA Stroke Council Newsletter
1996 - 2000, Editorial Board, Journal of Surgical Research
1999 - 2005, Editorial Board, Surgery
2001 - current, Associate Editor, Journal of Surgical Research

STUDY SECTION SERVICE:

1/98 - ad hoc reviewer, Surgery and Bioengineering Study Section, NIH
12/98 - reviewer, Program Project, NIH
2/99, 10/99 - reviewer, K08 Study Section, NIH
07/01 - 06/06 - member, BTSS Study Section, NIH
02/06 – ad hoc Chair, BTSS study section
06/07 – ad hoc Chair BTSS special emphasis panel
10/06 – reviewer, Cardiovascular Devices (SBTS E), SBIR Study Section
10/07 – ad hoc Chair, SBST, Cardiovascular Devices, Study Section
02/08 – ad hoc Chair SBIR, Study Section
10/07 – ad hoc reviewer, BTSS, Study Section
06/08 – ad hoc reviewer, T38 Study section

07/01/08 – 06/30/10 – Chair BTSS Study Section

CURRENT RESEARCH FUNDING:

Principal Investigator:

12/09-11/13, VA Merit Review “Cyclic nucleotide-dependent relaxation.”
(\$600,000)

04/01/08–03/31/12, NIH 2R01 HL070715, "Prevention of Vein Graft Spasm"
(\$750,000 direct costs)

PREVIOUS RESEARCH AWARDS:

1/88 - 1/89, Ohse Research Award, Department of Surgery, Yale University, "An investigation of the propranolol mediated delay in aneurysm formation in the Blotchy mouse" (\$8,000)

1/89 - 1/90, Ohse Research Award, Department of Surgery, Yale University, "The effect of propranolol on matrix synthesis and cross-linking in the aneurysm-prone Blotchy mouse" (\$8,000).

11/88 - 10/90, NIH National Research Service Award, "The effect of beta-blockade on aneurysm formation in the Blotchy mouse" (\$30,000/year).

1/92 - 1/93, Ohse Research Award, Department of Surgery, Yale University, "Phospholipase D activation by mechanical stretch in cultured endothelial cells" (\$8,000).

9/92 - 9/93, Ohse Research Award, Department of Surgery, Yale University, "Molecular mechanisms of vasorelaxation: the role of cGMP-dependent protein kinase" (\$8,000).

7/93 - 6/95, American College of Surgeons Faculty Fellowship Award, "Molecular Mechanisms of Vasorelaxation" (\$30,000/year).

7/93 - 6/95, SVS/ISCVS Lifeline Foundation Award, "A Molecular Model of Vasospasm" (\$50,000/year).

1/1/94 - 1/1/99 Clinical Investigator Development Award, NIH, Declined.

7/1/93 - 6/30/98, Clinician Scientist Award, The American Heart Association, "The molecular mechanisms of vasospasm" (\$50,000/year).

7/1/94 - 6/30/96 American Heart Association, Grant in Aid, "Isolation and cDNA cloning of smooth muscle relaxation-associated phosphoproteins" (Collaborating Investigator).

1996, Von Leibig Foundation Award for Early-Career Academic Surgeons, (\$10,000).

9/94 - 9/95, GIT/MCG Collaborative Research Award, "An In Vitro Model of Vasospasm" (\$15,000).

4/96 - 3/99, VA Merit Review Board, "Cyclic Nucleotide Dependent Vasorelaxation," (\$218,000).

4/97 - 3/01, NIH - 1R01HL58027-01 “Heat shock proteins and vasospasm” (\$1,004,550).

7/98 - 6/99, GIT/MCG Collaborative Research Award, “The effect of shear stresses on ICAM, VCAM, and HSP20 expression at the common iliac artery bifurcation.” (\$15,000)

7/99 - 6/00, GIT/MCG Collaborative Research Award, “The hemodynamic effects

of an in vivo asymmetric arterial stenosis on the expression of biological markers of atherosclerotic plaque stability."(\$15,000).

4/99 - 3/04, VA Merit Review Board, "Cyclic Nucleotide Dependent Vasorelaxation" (\$662,000)

6/99 - 5/04, NIH - R13, "Fundamentals of Surgical Research Course" (\$25,000)

10/02 - 10/03, NIH- 1R43HL71309-1 Phase I STTR "Development of a vasoactive biogel" (\$100,000).

01/02-1/04, ADCRC "Recombinant Protein Therapeutics," (PI, Dr. Lokesh Joshi, \$442,264)

01/02-10/04, AHA "Bioactive Protein Therapeutics for Vasospasm," (PI, Dr. Lokesh Joshi, \$44,000)

4/01 - 3/06, NIH - 2RO1HL58027-01 "Heat shock proteins and vasospasm" (\$1,500,000)

10/04 – 07/07, NIH- 1R43HL71309-1 Phase II STTR "Development of a vasoactive biogel" (\$700,000)

04/01/03–03/31/08, NIH R01 HL070715, "Prevention of Vein Graft Spasm" (\$1,000,000 direct costs)

01/04-03/08 NIH "Peptide-Based Therapeutics for Vascular Disease" (K25). PI, Panitch.

10/04-11/08, VA Merit Review "Cyclic nucleotide-dependent relaxation." (\$700,000).

CERTIFICATION AND LICENSURE:

Medical License, State of Georgia

Medical License, State of Arizona

Medical License, State of Tennessee

Diplomat, American Board of Surgery, September, 1990, recertified 2000.

Certificate of Added Qualifications in Vascular Surgery, May, 1992, recertified, 2001.

Certificate of Added Qualifications in Critical Care, October, 1993, expired 1994

SOCIETY MEMBERSHIPS:

Fellow, American College of Surgeons, 1996

Association for Academic Surgery

Society of University Surgeons

Association of Women Surgeons

Association of VA Surgeons

Society for Vascular Surgery (Distinguished Fellow)

American Physiological Society

American Society for Cell Biology

American Association for the Advancement of Science

Society for Vascular Medicine

PATENTS:

M1-061-Reagents and Methods for Smooth Muscle Therapies, USPTO # 7135453
issued November 14, 2006

M2-040-Biological Affinity Based Delivery Systems

M3-026-Reagents and Methods for Vascular Smooth Muscle Therapies

M3-027-Therapeutic Compositions and Methods for Modulation of Contraction of Smooth Muscle

M3-036-Reagents and Methods for Vascular Smooth Muscle Therapies

M3-044-Use of Analogues of the Small Heat Shock-Related Protein to Prevent Intimal Hyperplasia

M3-052-Protein Transduction of Biomimetic Peptides Leads to Changes in the Actin Cytoskeleton of 3T3 Cells

M3-090-Peptide Based Approach to Wound Healing and Inhibition of Scar Formation

BIBLIOGRAPHY:

I. Refereed Journals:

1) Moore JG, Christian PE, Brown JA, Brophy CM, Datz F, Taylor A, and Alazraki A. Influence of meal weight and caloric content on gastric emptying of meals in man. *Dig Dis Sci* 29; 513-519, 1984.

2) Brophy CM, Moore JG, Christian PE, Egger MJ, Taylor AT. Variability of gastric emptying measurements in man employing standardized radiolabeled meals. *Dig Dis Sci* 31; 799-806, 1986.

3) Brophy CM, Tilson JE, Tilson MD. Age of onset, pattern of distribution and histology of aortic aneurysms in a genetically predisposed mouse. *J Vasc Surg.* 8:45-48, 1988.

4) Brophy CM, Tilson JS, Tilson MD, Propranolol delays the formation of aneurysms in the male Blotchy mouse. *J Surg Res.* 44:687-689, 1988.

5) Brophy CM, Tilson JE, Tilson MD. Propranolol stimulates the crosslinking of matrix components in skin from the aneurysm-prone Blotchy mouse. *J Surg Res.* 46:330-332, 1989.

6) Brophy CM, Seashore J. Meckel's Diverticulum in the pediatric surgical population. *Ct Med.* 53:203-205, 1989.

7) Brophy CM, Cahow CE. Primary small bowel malignant tumors: Unrecognized until emergent laparotomy. *Am Surg.* 55:408-412, 1989.

- 8) Brophy CM, Marks WH, Reilly JM, Tilson MD. Tissue inhibitor of metalloproteinases is matrix associated in aortic tissue: Report of a radioimmunoassay. *Biochem Biophys Res Comm* 167:898-903, 1990.
- 9) Reilly JE, Brophy CM, Tilson MD. Hydrocortisone rapidly induces rupture of aortic aneurysms in a genetically susceptible mouse. *Arch Surg* 125:707-709, 1990.
- 10) Ito RK, Rosenblatt MS, Contreras MA, Brophy CM, LoGerfo FW. Monitoring platelet interactions with prosthetic graft implants in a canine model. *ASAIO Trans* 36: M175-M178, 1990.
- 11) Brophy CM, Reilly JE, Smith JGW, Tilson MD. The role of inflammation in non-specific aortic aneurysm disease. *Ann Vasc Surg*, 5: 229-233, 1991.
- 12) Ito RK, Brophy CM, Contreras MA, Tsoukas A, LoGerfo FW. Persistent platelet activation by passivated grafts. *J Vasc Surg* 13:822-829, 1991.
- 13) Stonebridge PA, Miller AM, Tsoukas A, Brophy CM, Gibbons G, Pomposelli F, Freeman D, Campbell D, LoGerfo FW. Angioscopy of arm vein infrainguinal bypass grafts improves early patency. *Ann Vasc Surg* 5:170-175, 1991.
- 14) Brophy CM, Marks WH, Reilly JM, Tilson MD. Decreased tissue inhibitor of metalloproteinases in abdominal aortic aneurysm tissue. *J Surg Res* 50:653-657, 1991.
- 15) Brophy CM, Sumpio BE, Reilly JM, Tilson MD. Characterization of protease expression in aneurysmal aorta: Report of a unique 80kDa elastolytic activity. *Surg Res Comm* 10:315-321, 1991.
- 16) Stonebridge PA, Miller AM, Brophy CM, Gibbons G, Pomposelli F, Freeman D, Campbell D, LoGerfo FW. Angioscopic valvulotomy prevents vein graft damage. *J Vasc Surg* 13:813-821, 1991.
- 17) Brophy CM, Ito RK, Quist W, Rosenblatt MS, Contreras MA, Tsoukas A, LoGerfo FW. A canine model for evaluating blood prosthetic graft interactions. *J Biomed Mat Res* 25:1031-1038, 1991.
- 18) Stonebridge PA, Brophy CM. Spiral laminar flow in arteries? *Lancet* 338: 1360-1361, 1991.
- 19) Kwolek CJ, Pomposelli FB, Tannenbaum GA, Brophy CM, Gibbons GW, Campbell DR, Freeman DV, Miller AM, LoGerfo FW. Peripheral vascular bypass in juvenile-onset diabetes mellitus: Are aggressive revascularization attempts justified? *J Vasc Surg* 15:394-401, 1992.
- 20) Reilly JM, Brophy CM, Tilson MD. Characterization of an elastase from aneurysmal

aorta which degrades intact aortic elastin. *Ann Vasc Surg* 6:499-502, 1992.

21) Brophy CM, Rosales O, Sumpio BE. Phospholipase C, a putative mechanotransducer for endothelial cell response to acute hemodynamic changes. *Biochem Biophys Res Comm.* 190: 576-581, 1993.

22) Tilson MD, Reilly JM, Brophy CM, Webster EL, Barnett TR. Expression and sequence of the gene for tissue inhibitor of metalloproteinases (TIMP-1) in patients with abdominal aortic aneurysms. *J Vasc Surg* 18:266-270, 1993.

23) Berg C, Brophy CM, Dransfield D, Lincoln TM, Goldenring J, Rasmussen H. Impaired cyclic nucleotide-dependent relaxation in human umbilical artery smooth muscle. *Am J Physiol* 268:H202-H212, 1995.

24) Whitney EG, Throckmorton D, Yeh J, Isales C, Rasmussen H, Brophy CM. Kinase activation and smooth muscle contraction in the presence and absence of calcium. *J Vasc Surg* 22:37-44, 1995.

25) Brophy CM, Lamb S, Rasmussen H, Goldenring J. Partial purification and characterization of an endogenous inhibitor of cGMP-dependent protein kinase. *Surgical Forum*, 66:338-340, 1995.

26) Arora S, Meier GH, Pedersen H, Brophy C, Lacey K, Gusberg RJ. Non-invasive impedance analysis: a new noninvasive test for graft surveillance. *Cardiovasc Surgery* 3:659-664, 1995.

27) Yeh JL, Whitney EG, Brophy CM. Nitric oxide (NO) is an autocrine feedback regulator of vascular smooth muscle contraction. *Surgery*, 119:104-109, 1996.

28) Whitney EG, Berg CM, Yeh JL, Jerius H, Brophy CM. Renal artery smooth muscle is refractory to angiotensin. *J Surg Res*, 61:307-310, 1996.

29) Epstein AM, Throckmorton D, Brophy CM. Serotonin induces tyrosine phosphorylation of mitogen-activated protein kinase with the subsequent phosphorylation of caldesmon in vascular smooth muscle. *Surgical Forum* 67:360-362, 1996.

30) Brophy CM, Whitney EG, Lamb S, Beall A. The cellular mechanisms of cyclic nucleotide-dependent vasorelaxation. *J Vasc Surg*, 25:390-397, 1997.

31) Whitney EG, Brophy CM, Kahn EM, Whitney DG. Inadequate cerebral perfusion is an unlikely cause of stroke during carotid artery reconstruction. *Ann Vasc Surg*, 11:109-114, 1997.

32) Jerius H, Bagwell D, Beall A, Brophy C. The impact of balloon embolectomy on the function and morphology of the endothelium. *J Surg Res*, 67:9-13, 1997.

- 33) Beall AC, Kato K, Goldenring JR, Rasmusen H, Brophy CM. Cyclic nucleotide-dependent vasorelaxation is associated with the phosphorylation of a small heat shock-related protein. *J Biol Chem*, 272:11283-11287, 1997.
- 34) Evans L, Frenkel L, Brophy CM, Rosales O, Sudhaker CB, Li G, Du W, Sumpio BE. Activation of diacylglycerol in cultured endothelial cells exposed to cyclic strain. *Am J Physiol*, 272:C650-656, 1997.
- 35) Epstein AM, Throckmorton D, Brophy CM. MAP kinase activation: an alternative signaling pathway for sustained vascular smooth muscle contraction, *J Vasc Surg*, 26:1-6, 1997.
- 36) Rosales OR, Isales CM, Barrett PQ, Brophy C, Sumpio BE. Exposure of endothelial cells to cyclic strain induces elevations of cytosolic Ca^{2+} concentration through mobilization of intracellular and extracellular pools. *Biochem J*. 326:385-392, 1997.
- 37) Brophy CM, Beall A, Lamb S, Dickinson M. Small heat shock proteins and vasospasm in human umbilical artery smooth muscle, *Biol Repro* 57, 1354-1359, 1997.
- 38) Jerius H, Beall A, Woodrum D, Epstein A, Brophy C. Thrombin-induced vasospasm: Cellular signaling mechanisms. *Surgery* 123:46-50, 1998.
- 39) Epstein A, Beall A, Wynn J, Mulloy L, Brophy CM. Cyclosporine, but not FK506, selectively induces renal and coronary artery smooth muscle contraction. *Surgery* 123:456-460, 1998.
- 40) Brophy CM, Woodrum D, Dickinson M, Beall A. Thrombin activates MAPKAP-2 kinase in vascular smooth muscle. *J Vasc Surg* 27:963-969, 1998.
- 41) Kirby LB, Brophy CM. Balloon angioplasty induces heat shock protein 70 in human blood vessels. *Surgical Forum* 69:285-286, 1998.
- 42) Throckmorton D, Packer CS, Brophy CM. Protein kinase C activation during calcium-independent vascular smooth muscle contraction. *J Surg Res*, 78: 48-53, 1998.
- 43) Brophy CM, Beall A, Mannes K, Lamb S, Dickinson M, Woodrum D, DeVoe L. Heat shock protein expression in umbilical artery smooth muscle. *J Repro and Fertility*, 114:351-355, 1998.
- 44) Brophy CM, Lamb S, Graham A. The small heat shock protein, HSP20, is an actin associated protein. *J Vasc Surg*, 29:326-333, 1999.
- 45) Jerius HJ, Karolyi DR, Mondy JS, Beall A, Wooton D, Ku D, Cable S, Brophy CM. Flow induced vasodilation is associated with increases in the phosphorylation of a small heat shock protein (HSP20), *J Vasc Surg*, 29: 678-684,1999.

- 46) Beall A, Epstein A, Woodrum D, Brophy CM. Cyclosporine-induced renal artery smooth muscle contraction is associated with increases in the phosphorylation of specific contractile regulatory proteins. *Biochem Biophys Acta*, 1449:41-49, 1999.
- 47) Brophy CM, Dickinson M, Woodrum D. Phosphorylation of the small heat shock-related protein, HSP20, in vascular smooth muscles is associated with changes in the macromolecular associations of HSP20. *J Biol Chem*, 274:6324-6329, 1999.
- 48) Beall A, Bagwell CA, Woodrum D, Stoming TA, Kato K, Suzuki A, Rasmussen H, Brophy CM. Heat shock-related protein, HSP20, is phosphorylated on serine 16 during cyclic nucleotide-dependent relaxation. *J Biol Chem*, 274:11344-11351, 1999.
- 49) Kirby L, Mondy JS, Brophy CM. Balloon angioplasty is associated with the expression of heat shock protein 70 in human atherosclerotic vessels, *Ann Vasc Surg*, 13:475-479, 1999.
- 50) Knoepp L, Beall A, Woodrum D, Brophy C. Cellular stress inhibits smooth muscle relaxation. *Surgical Forum*, 50:432-433, 1999.
- 51) Woodrum DA, Wingard C, Beall A, Brophy CM, Rasmussen H. The phosphorylation events associated with cyclic nucleotide dependent inhibition of vascular smooth muscle contraction. *Am J Physiol*, 277: H931-939, 1999.
- 52) Jerius H, Beall A, Bagwell CA, Karolyi D, Brophy CM. Vascular smooth muscle mechanics in isolated perfused segments of carotid arteries. *Surgery* 127:148-154, 2000.
- 53) Knoepp L, Bagwell CA, Garlich P, Lamb S, Brophy CM. Thrombin contraction of vascular smooth muscle: implications for vasospasm. *Int J Invest Surg*, 1:285-290, 1999.
- 54) Knoepp L, Beall A, Woodrum D, Shaver E, Mondy JS, Dickinson M, Brophy CM. Cellular stress inhibits vascular smooth muscle relaxation. *J Vasc Surg.*,31:343-353, 2000.
- 55) Brophy CM, Knoepp L, Xin J, and Polluck JS. Functional expression of NOS 1 in vascular smooth muscle. *Am J Physiol*, 278:H991-997, 2000.
- 56) Bagwell CA, Brophy CM. Enhanced arterial contractile responses in diabetic hypercholesterolemic pig carotid arteries. *Int J Surg Invest*, 1:477-481, 2000.
- 57) Fuchs LC, Knoepp L, Pipkin W, Dickinson M, Hayles C, Brophy C. The effect of behavioral stress on heat shock proteins and physiologic contractile responses in borderline hypertensive rats. *Am J Physiol*, 279: R492-498, 2000.
- 58) Brophy CM, Molinari R, Dickinson M. The macromolecular associations of heat shock protein 27 (HSP27) in vascular smooth muscle. *Surgery* 128: 320-326, 2000.

- 59) Woodrum DA, Brophy CM. The paradox of smooth muscle physiology. *Molecular and Cellular Endocrinology*, 177:135-143, 2000.
- 60) Komalavilas P, Mehta S, Wingard CJ, Dransfield D, Bhalla J, Woodrum J, Molinaro JR, Brophy CM. PI3 kinase and Akt/ protein kinase B inhibit smooth muscle contraction. *J Appl Physiol*, 91:1819-1827, 2001.
- 61) Brophy CM, Woodrum DA, Pollock J, Dickinson M, Komalavilas P, Cornwell TL, Lincoln TM. Restoration of contractile function to cultured smooth muscle cells by cGMP-dependent protein kinase expression. *J Vasc Res*, 39:95-103, 2002.
- 62) Macomson SD, Brophy CM, Miller AV, Harris VA, Shaver EG. Heat shock protein expression in cerebral vessels after subarachnoid hemorrhage. *Neurosurgery* 51:204-211, 2002.
- 63) Brophy CM. Stress and vascular disease at the cellular and molecular levels. *W J Surg* 26:779, 2002.
- 64) Pipkin W, Dickinson M, Brophy C. The small heat shock-related protein, Localization, macromolecular associations and function of the small heat shock-related protein, HSP20, in rat heart. *Circulation*, 107:469-476, 2003.
- 65) Woodrum DA, Pipkin W, Tessier D, Komalavilas P, Brophy CM. Phosphorylation of the heat shock-related protein, HSP20, mediates cyclic nucleotide-dependent relaxation. *J Vasc Surg*, 37:874-81, 2003.
- 66) Tessier D, Komalavilas P, Panitch A, Joshi L, Brophy CM. The small heat shock protein, HSP20, is dynamically associated with the actin cross-linking protein, actinin. *J Surg Res*, 111:152-157, 2003.
- 67) Flynn CR, Komalavilas P, Tessier D, Thresher J, Niederkofler E, Nelson RW, Panitch A, Joshi L, Brophy CM. Transduction of biologically active motifs of the small heat shock related protein, HSP20, leads to relaxation of vascular smooth muscle. *Faseb J*, 17:1358-1360, 2003.
- 68) Tessier D, Komalavilas P, McLemore L, Thresher J, Brophy CM. Sildenafil induced relaxation is associated with increases in the phosphorylation of the heat shock related protein (HSP20), *J Surg Res* 118:21-25, 2004.
- 69) Tessier D, Komalavilas P, Liu B, Kent KC, Thresher JS, Dreiza CM, Panitch A, Joshi L, Furnish E, Stone W, Fowl R, Brophy CM. Transduction of peptide analogues of the small heat shock-related protein, HSP20, inhibits smooth muscle contraction and intimal hyperplasia. *J Vasc Surg* 40:106-114, 2004.
- 70) McLemore, E, Tessier DJ, Flynn CR, Furnish EJ, Komalavilas P, Tessier D, Thresher JS, Joshi L, Stone WM, Fowl RJ, Brophy CM. Transducible recombinant small heat

shock-related protein, HSP20, inhibits vasospasm and platelet aggregation *Surgery* 136:573-8, 2004.

71) Dreiza CM, Brophy CM, Komalavilas P, Furnish EJ, Joshi L, Pallero M, Murphy-Ullrich JE, von Rechenberg M, Ho YJ, Richardson B, Xu N, Zhen Y, Peltier JM, Panitch A. Transducible heat shock protein 20 phosphopeptide alters cytoskeletal dynamics. *FASEB J*, 19:261-263: 2004 (www.fasebj.org/cgi.doi/10.1096/fj.04-2911fje;doi:10.1096/fj.04-2911fje).

72) Huey KA, Thresher JS, Brophy CM, Roy RR. Inactivity-induced modulation of Hsp20 and Hsp25 content in rat hindlimb muscles. *Muscle & Nerve*, 30:95-101, 2004.

73) Komalavilas P, DaCosta L, Brophy CM. Lysophosphatidic acid induces phosphorylation of heat shock protein 27. *Proceedings of the 12th International Conference on second messengers and phosphoproteins*, 133-138, 2004.

74) Flynn CR, Brophy CM, Furnish EJ, Komalavilas P, Tessier D, Thresher J, Joshi L. Transduction of phosphorylated heat shock-related protein 20, HSP20, prevents vasospasm of human umbilical artery smooth muscle. *J Appl Phys* 98:1836-1845, 2005.

75) McLemore EC, Tessier DJ, Thresher J, Komalavilas P, Brophy CM. Role of the small heat shock proteins in regulating vascular smooth muscle tone. *Journal of the American College of Surgeons* 2005; 201(1):30-6

76) Lopes L, Brophy CM, Furnish E, Flynn CR, Sparks O, Komalavilas P, Joshi L, Panitch A, Bentley MV. Comparative study of the skin penetration of protein transduction domains and a conjugated peptide. *Pharma Res* 22:750-8, 2005.

77) Brophy CM, Sharpnack R, Constructive politics: Managing relationships through conversations. *Women in Science*, 34: 8-12, 2005.

78) Dereska NH, McLemore EC, Tessier DJ, Bash DS, Brophy CM. Short-term, moderate dosage vitamin E supplementation may have no effect on platelet aggregation, coagulation profile, and bleeding time in healthy individuals. *J Surg Res*, 132:121-129, 2006.

79) Flynn, CR, Smoke CC, Furnish E, Komalavilas P, Thresher J, Brophy C. In vivo activation of a transducible recombinant form of human HSP20 by co-expression with the catalytic subunit of PKG. *Protein Expression and Purification*, 52:50-58, 2007.

80) G. Gonzalez, J. C. Uribe, L. Tari, C. Brophy, and C. Baral, "Mining Gene-Disease relationships from Biomedical Literature: Incorporating Interactions, Connectivity, Confidence, and Context Measures.," *Pacific Symposium in Biocomputing*, Maui, Hawaii, 2007. <http://psb.stanford.edu/psb-online/proceedings/psb07/gonzalez.pdf>

81) Lopes LB, Furnish E, Komalavilas P, Seal BL, Panitch A, Bentley M, Brophy CM. Enhanced skin penetration of P20 phosphopeptide using protein transduction domains. *European Journal of Pharmaceutics and Biopharmaceutics*, 68: 441-445, 2008.

82) Komalavilas P, Penn R, Flynn CR, Thresher J, Lopes L, Furnish E, Guo M, Pallero MA, Murphy-Ullrich JE, and Brophy CM. The small heat shock-related protein, HSP20 is a cAMP-dependent kinase substrate involved in airway smooth muscle relaxation. *Am J Physiol*, 294:L69-78, 2008.

83) Lopes L, Furnish EJ, Komalavilas P, Flynn CR, Ashby P, Hansen A, Ly DP, Yang GP, Longaker MT, Rousseau E, Sheller MR, Panitch A, Brophy CM. Cell permeant peptide analogues of the small heat shock protein, HSP20, reduces TGF β 1 induced CTGF expression in keloid fibroblasts. 2009 Mar;129(3):590-8. Epub 2008 Sep 11.

84) Inhibition of HSP27 Phosphorylation by a Novel Cell-permeant MAPKAP Kinase 2 Inhibitor. Lopes LB, Flynn CR, Komalavilas P, Panitch A, Brophy CM, Seal BL. *Biochem Biophys Research Comm*, 382: 535-539, 2009.

85) Dreiza, CM, Komalavilas P, Furnish EJ, Flynn CR, Sheller MR, Smoke CC, Lopes LB, Brophy CM, The Small Heat Shock Protein 20, HSP20, Submitted J. *Stress Prot Mol Chap*.

86) Furnish EJ, Brophy CM, Harris VA, Macomson S, Winger J, Head G, Shaver EG. Treatment with transducible phosphopeptide analogues of the small heat shock related protein, HSP20 prevents and reverses delayed vasospasm after experimental subarachnoid hemorrhage. Submitted, *J Neurosurgery*.

87) Ba M, Singer CA, Tyagi M, Brophy C, Baker J, Cremona C, Halayko A, Gerthoffer WT. HSP20 phosphorylation and airway smooth muscle relaxation. Submitted, *Am J Phys*.

88) Lopes LB, Brophy CM, Flynn CR, Yi Z, Bowen B, Smoke C, Moreley E, Seal B, Mandarino L, Panitch A, Carey C, Komalavilas P. A novel cell permeant peptide inhibitor of MAPKAP Kinase II inhibits intimal hyperplasia in a human saphenous organ culture model. Submitted, *Am J Surg*

89) Ward B, Seal BL, Brophy CM, Panitch A. Design of a bioactive cell-permeant, peptide: when a transduction domain does more than transduce. Submitted, *J Peptide Sci*.

II. Chapters and Reviews:

1) Tilson MD, Brophy CM. Pharmacologic manipulations in abdominal aortic aneurysm disease, in Greenhalgh R, Mannick J. eds., The Cause and Management of Aneurysms. pp. 221-226 W B Saunders Inc. 1990.

2) Tilson MD, Elefteriades J, Brophy CM. Tensile strength and collagen in abdominal

aortic aneurysm (AAA) disease, in Greenhalgh R, Mannick J, eds., The Cause and Management of Aneurysms. pp.97-104, W B Saunders Inc. 1990.

3) Brophy CM, Smith JW, Tilson MD. The Pathology of nonspecific abdominal aortic aneurysm disease, in Ernst CB, Stanley JC (eds.), Current Therapy in Vascular Surgery -II, B. C. Decker Inc. 1991, pp 238-241.

4) Brophy CM, Tilson MD. New concepts in abdominal aortic aneurysm disease. Resident and Staff Physician, 36:33-38, 1990.

5) Brophy CM. Review of: Iatrogenic Vascular Injury: A Discourse on Surgical Technique. T.J. Bunt eds. Futura Publishing, Mount Kisco. J Vasc Surg 12:764-765, 1990.

6) Tilson MD, Brophy CM. Aneurysm pathogenesis, in Greenfield, LJ ed. Textbook of Surgery: Scientific Principles and Practise. Lippincott, Philadelphia. pp. 1674-1680, 1992.

7) Brophy CM. GI vascular and ischemic syndrome. Current Opinion in General Surgery. Daly JM. ed. pp.225-231, 1993.

8) Brophy CM. Infrainguinal occlusive disease with and without diabetes. J. Cardiovasc. Diagnosis and Proc. 12:43-45, 1994.

9) Brophy C, Awolesi M, Sumpio B. Regulation of vasomotor tone and vasospasm, in Sidawy AN, Sumpio BE, Giordano JM, DePalma RG, eds. Basic Science of Vascular Disease. Futura Publishing, Mt. Kisco, N.Y., 367-384, 1997.

10) Brophy CM, Acute embolic and thrombotic disease. Pp. 167-198. In Longo, ed. Intestinal Ischemia Disorders, Quality Medical Publishing. St. Louis, MO. 1998.

11) Brophy C, Review of "Cell Biology: a laboratory based handbook.." Julio Celis eds. Academic Press, San Diego, CA. J Vasc Surg. p 391, 1999.

12) Brophy CM. Review of: "Varicose Veins and Telangectasias: Diagnosis and Treatment." Goldman, Weiss, Bergan eds. Quality Medical Publishing Inc. St. Louis, MO. Arch Surg 134:1279, 1999.

13) Brophy CM, The dynamic regulation of blood vessel caliber. J Vasc Surg, 31:391-395, 2000.

14) Dreiza C, Komalavilas P, Furnish E, Flynn CR, Sheller MR, Smoke CC, Lopes LB, Brophy CM. The Small Heat Shock Protein 20, HSP20. Submitted Am J Physiol.

III. Books:

1) Vascular Surgery, Davies and Brophy eds. Springer Verlag, 2006.

IV. Case Reports:

1) Gertler JP, Brophy CM, Elefteriades JA. Esophageal rupture after routine endoscopy: A proposed mechanism. J Clin Gastroenterol 8; 175-176, 1986.

2) Brophy CM, Frederick WG, Schlessel R, Barwick K. Focal segmental ischemia of the terminal ileum mimicking Crohn's disease. J Clin Gastroenterol. 10:343-347, 1988.

3) Brophy CM, Bock JF, West AB, McKhann CF. Liver cell adenoma: Diagnosis and treatment of a rare hepatic neoplastic process. Am J Gastroenterol. 84:429-432, 1989.

4) Brophy CM, Morris J, Sussman J, Modlin IM. "Pseudo-ascites" secondary to an amylase producing ovarian cystadenoma. J Clin Gastroenterol. 11:703-706, 1989.

5) Brophy CM, Ballantyne GH, Modlin IM, Small bowel obstruction secondary to phytobezoar in the post gastrectomy patient. Contemp Surgery. 37:27-30, 1990.

6) Brophy CM, Quist WC, Kwolek C, LoGerfo FW. Disruption of proximal axillobifemoral bypass graft anastomosis. J Vasc Surg 15:218-220, 1992.

7) Brophy CM, Evans L, Sumpio BE, Defecation syncope secondary to functional IVC obstruction during valsalva: A case report of successful surgical repair. Ann Vasc Surg 7:374-377, 1993.

8) Kirby L, Abbas J, Brophy C. Recanalization of an occluded popliteal artery following posterior knee dislocation. Ann Vasc Surg. 13, 622-624, 1999.

9) Pipkin W, Brophy C, Nesbit R, Mondy JS. Early experience with infectious complications of percutaneous femoral artery closure devices. J Vasc Surg, 32:205-208, 2000.

10) Tessier D, Brophy C, Causes, diagnosis and management of duodenal obstruction after aortic surgery. J Vasc Surg, In Press.

V. Abstracts:

Brophy CM, Braverman IM, Tilson JE, Tilson MD. Age of onset, pattern of distribution and histology of aortic aneurysm development in a genetically predisposed mouse. Eastern Vascular Society, 1987.

Brophy CM, Tilson JE, Tilson MD. Propranolol delays the formation of aneurysms in the aneurysm prone Blotchy mouse model. Association for Academic Surgery, 1987.

Brophy CM, Tilson JE, Tilson MD. Propranolol stimulates the crosslinking of matrix

components in skin from the aneurysm-prone Blotchy mouse. Association for Academic Surgery, 1988.

Reilly JM, Brophy CM, Tilson MD. Direct histochemical evidence for an elastase in aneurysmal aorta that degrades aortic elastin. Surg Forum. XL:283-285, 1989.

Brophy CM, Reilly JM, Walker-Smith JG, Tilson MD. A reappraisal of the microscopic pathology of abdominal aortic aneurysm disease: Do inflammatory cells co-distribute with loss of elastin? New England Society for Vascular Surgery, 1989.

Brophy CM, Ito RK, LoGerfo FW. Persistent platelet activation by passivated grafts. New England Society for Vascular Surgery, 1990.

Brophy CM, Reilly JM, Tilson MD. Decreased tissue inhibitor of metalloproteinases in abdominal aortic aneurysm tissue. Association for Academic Surgery, 1990.

Brophy CM, Rosales OR, Sumpio BE. Vascular endothelium senses changes in hemodynamics via phosphoinositol pathway, The Association for Academic Surgery, 1991.

Theoharides TC, Brophy CM. Increased numbers of activated mast cells in abdominal aortic aneurysms. FASEB, 1992.

Rosales OR, Barrett PQ, Brophy CM, Cox N, Sumpio BE, Isales CM. Stretch increases cytosolic calcium and 1,4,5 inositol tris-phosphate in cultured endothelial cells via a pertussis toxin-insensitive mechanism. AFCR, April 1992, Baltimore, MD.

Cohen R, Brophy CM, Ng A, Sumpio BE. Radiation-induced carotid arteritis. Connecticut section, American Board of Surgery, November, 1992, Cromwell, CT.

Whitney EG, Berg CM, Yeh JL, Brophy CM. Renal artery smooth muscle is uniquely refractory to angiotensin. SVS/ISCVS Lifeline foundation research forum, Seattle, June 1994.

Gregory AK, Newman KM, Brophy CM, Tilson MD. Evidence for autoimmunity in the abdominal aortic aneurysm. SVS/ISCVS Lifeline foundation research forum, Seattle, June 1994.

Evans LV, Brophy CM, Shin T, Mills I, Sumpio BE. Hemodynamic forces activate distinct signalling pathway kinetics in vascular smooth muscle and endothelial cells. SVS/ISCVS Lifeline foundation research forum, Seattle, June 1994.

Yeh JL, Whitney EG, Brophy CM. Nitric oxide (NO) is an autocrine feedback regulator of vascular smooth muscle contraction. Academy of Surgical Research, Orlando FL, September, 1994, J Invest Surg 7:375, 1994.

Throckmorton D, Brophy CM, Packer CS, Isales C, Rasmussen H. Caldesmon phosphorylation, but not myosin light chain phosphorylation, occurs during calcium-independent, phorbol ester-induced smooth muscle contraction. American Society of Cell Biology, San Francisco, CA, December 10, 1994.

Whitney EG, Brophy CM, Kahn EM, Whitney DG. Inadequate cerebral perfusion is an unlikely cause of stroke during carotid artery reconstruction. Southern Association for Vascular Surgery, Cancun, Mexico, Jan 26, 1995.

Brophy CM, Lamb S, Rasmussen H, Goldenring J. Partial purification and characterization of an endogenous inhibitor of cGMP-dependent protein kinase. University system research symposium. MCG, May 22, 1995.

Brophy CM, Bagwell C, Gerrity R. Experimental diabetes enhances vasoconstrictor responses to serotonin. SVS/ISCVS, New Orleans, LA, June 11, 1995.

Brophy CM, Throckmorton D. Caldesmon and MARCKS phosphorylation during smooth muscle contraction. SVS/ISCVS, New Orleans, LA, June 11, 1995.

Brophy CM, Throckmorton D. Caldesmon phosphorylation does not correlate with vascular smooth muscle relaxation. 9th international conference on second messengers and phosphoproteins. October 28, 1995, Nashville, TN.

Jerius H, Ku D, Wooten D, Brophy C. Low intravascular pressure as seen in non-occlusive mesenteric ischemia enhances blood vessel vasoconstriction. GA Chapter ACS, Spring, 1996

Epstein A, Bowen A, Wynn J, Jerius H, Brophy C. Cyclosporine is a selective renal artery smooth muscle contractile agonist: implications for post-transplant hypertension. Association of VA Surgeons, April 28, 1996, Detroit MI.

Jerius H, Bagwell CA, Nesbit R, Brophy C. The impact of Fogarty embolectomy on the function and morphology of the endothelium. Association of VA Surgeons, April 30, 1996, Detroit MI.

Beall A, Goldenring J, Rasmussen H, Brophy C. Phosphorylation of a 20 kDa protein that is highly homologous to α B-crystallin in vascular smooth muscle. Cold Spring Harbor Symposium, May 1-5, 1996.

Brophy CM, Beall A, Rasmussen H. The phosphorylation of a small heat shock-related protein is associated with cyclic nucleotide-dependent vasorelaxation. American Heart Association, Research Fellowship Symposium, 11/9/96, New Orleans, LA.

Brophy CM, Jerius H, Epstein A, Beall A, Woodrum D. Thrombin-induced vasospasm: Cellular signalling mechanisms. SVS/ISCVS, 6/1/97, Boston, MA.

Jerius H, Beall A, Wooten D, Ku D, Brophy CM. The influence of pressure and flow on

endothelial-dependent vasodilation. SVS/ISCVS, 6/1/97, Boston, MA.

Kirby L, Brophy CM. Balloon angioplasty is associated with the expression of heat shock protein 70 in human atherosclerotic vessels, Moretz Surgical Society, 3/6/98 Augusta, GA.

Brophy CM. The small heat shock protein, HSP20, is an actin associated protein. SVS/ISCVS, 6/4/98, San Diego, CA

Karolyi DR, Jerius HJ, Ku D, Brophy CM. Flow induced vasodilation is associated with increases in the phosphorylation of a small heat shock protein (HSP20). Endothelial regulation of vascular tone. Am Physiol Conf. Augusta, GA 9/16/98, The Physiologist 41:267.

Brophy CM, Pollock JS. Nitric oxide synthase in vascular smooth muscle. Endothelial regulation of vascular tone. Am Physiol Conf. Augusta, GA 9/18/98, The Physiologist 41:271.

Woodrum DA, Dransfield DT, Rasmussen H, Brophy CM. Overexpression of the type II cAMP-dependent protein kinase regulatory subunit (R_{II}) is associated with impaired cyclic nucleotide dependent vasorelaxation. Endothelial regulation of vascular tone. Am Physiol Conf. Augusta, GA 9/18/98, The Physiologist 41:274.

Brophy CM, Dickinson M, Woodrum D. Phosphorylation of the small heat shock-related protein, HSP20, in vascular smooth muscles is associated with changes in the macromolecular associations of HSP20. Siedel Symposium, 4/11-4/14/99, Woods Hole, MA.

Beall A, Woodrum D, Stoming TA, Kato K, Suzuki A, Rasmussen H, Brophy CM. Heat shock-related protein, HSP20, is phosphorylated on serine 16 during cyclic nucleotide-dependent relaxation. Siedel Symposium, 4/11-4/14/99, Woods Hole, MA.

Woodrum DA, Wingard C, Beall A, Brophy CM, Rasmussen H. The phosphorylation events associated with cyclic nucleotide dependent inhibition of vascular smooth muscle contraction. FASEB, 4/20/99, Washington DC.

Knoepp L, Beall A, Brophy C. Physiologic effects of stress on vascular smooth muscle. Lifeline Foundation Research Initiatives, Wash., DC, 4/99.

Knoepp L, Garlich P, Lamb S, Brophy CM. Mitogen- and stress-activated protein kinases are tyrosine phosphorylated by thrombin stimulation of vascular smooth muscle. Association of VA Surgeons, St. Louis, MO, 5/99.

Knoepp L, Beall A, Mondy S, Brophy CM. Stress impairs smooth muscle relaxation. SVS/ISCVS Lifeline Foundation Resident Research Award, Washington DC, 6/99.

Knoepp L, Beall A, Woodrum D, Brophy CM. Cellular stress inhibits vascular smooth muscle relaxation. American College of Surgeons Surgical Forum, San Francisco CA, 10/99.

Karolyi D, Knoepp L, Brophy C, Giddens D. The effects of physiological and pathological conditions on shear stress and flow fields through the rabbit aortic bifurcation. Biomedical Engineering Society, Atlanta, GA, 10/99.

Brophy C, Dickinson M. The macromolecular associations of heat shock protein-27 (HSP27) in response to stress. Society of University Surgeons, Toronto, Ontario, Canada, 2/10, 2000.

Hales C. Brophy C. Smooth muscle relaxation during the initiation vs. the sustained phase of contraction. FASEB, San Diego, CA 4/16/00.

Woodrum DA, Rasmussen H, Dickinson M, Brophy CM. Phosphorylation of the small heat shock related protein, HSP20, mediates mesangial cell relaxation. FASEB, San Diego, CA 4/16/00.

Tessier D, Woodrum D, Komalavilas P, Brophy C. Engineered Protein Therapeutics. SVS/AAVS Research forum 06/09/02, Boston, MA.

Tessier D, Brophy CM The small heat shock protein, HSP20, is dynamically associated with the actin cross-linking protein, actinin. Presented at the plenary session of the Association for Academic Surgery, 11/06/02, Boston, MA, Journal of Surgical Research. 2002;107;S269-70.

Flynn, C.R., Komalavilas, P., Brophy, C.M., and Joshi, L. (2002) Scaleable Production of Recombinant HSP20 Analogues in Plant and Bacterial Systems. American Society of Cell Biology. Abstract # 02-LB-3746-ASCB. Molecular Biology of the Cell, 13: Supplement.

Komalavilas, P., Tessier, D., Flynn, C.R., Thresher, J., Niederkofler, E., Nelson, R., Joshi, L., and Brophy, C.M. (2002) Transduction of Peptide Analogues of The Small Heat Shock-Related Protein, HSP20, Relaxes Vascular Smooth Muscle. American Society of Cell Biology (2002) Abstract # 02-LB-3691-ASCB. Molecular Biology of the Cell, 13: Supplement.

Tessier D, Komalavilas P, McLemore L, Thresher J, Brophy CM. Sildenafil induced relaxation is associated with increases in the phosphorylation of the heat shock related protein (HSP20), Association for Academic Surgery, Sacramento, November 2003.

Flynn CR, Furnish E, Komalavilas P, Tessier D, Thresher J, Johsi L, Brophy CM. Applied vascular proteomics: Recombinantly-derived HSP20 analogues lead to relaxation of vascular smooth muscle and inhibition of platelet aggregation. Mol Biol Cell 14: 44a, 2003; ASCB, San Francisco.

Parmiter C, Furnish E, Komalavilas P, Brophy CM. Phospho-HSP20 peptide analogues cause actin depolymerization by altering the association of cofilin and 14-3-3. ASCB, San Francisco, December 2003.

Komalavilas P, DaCosta L, Brophy CM. Lysophosphatidic acid induces phosphorylation of heat shock protein 27. 12th International meeting of Second Messengers and Phosphoproteins, 08/04, Montreal, Canada.

McLemore EC, Flynn CR, Furnish EJ, Komalavilas P, Tessier D, Thresher JS, Joshi L, Brophy CM. Engineered proteomic analogues that inhibit vasospasm and platelet aggregation. SUS, Feb 13, 2004, St. Louis, MO.

Dreiza CM, Brophy CM, Komalavilas P, Pallero M, Murphy-Ullrich J, Furnish EJ, Joshi L, von Rechenberg M, Ho J, Richardson B, Xu N, Zhen Y, Peltier JM, Panitch A. Transduction of heat shock protein (HSP20) phosphopeptide alters cytoskeletal dynamics. Gordon Conference: Biology of 14-3-3 proteins, 02/04.

Hinjose-Kurtzberg M, Thresher J, Komalavilas P, Brophy CM. Heat shock related protein 20 is a key player in airway smooth muscle relaxation. American Society for Cell Biology, December, 2005.

Flynn CR, Smoke C, Komalavilas P, Thresher J, Guo M, Penn R, Brophy CM. Full-length and peptide analogues of phosphorylated HSP20 are effective elicitors of a relaxed phenotype in intact vascular smooth muscle and isolated cell systems. American Society for Cell Biology, December, 2005.

Komalavilas P, Flynn CR, Thresher J, Guo M, Penn R, Pallero MA, Murphy JE, Brophy CM. Protein kinase A inhibition reverses forskolin induced phosphorylation of heat shock-related protein 20 and disruption of stress fibers in human airway smooth muscle cells. American Society for Cell Biology, December, 2005.

Flynn CR, Komalavilas P, Brophy CM, Joshi L. Scaleable production of recombinant HSP20 in plant and bacterial systems. American Society for Cell Biology, December, 2005.

Hansen A, Garcia C, Komalavilas B, Brophy CM. The role of the small heat shock proteins in the regulation of lower esophageal sphincter tone. AAS/SUS. Feb 2006.

Ward, B.C., Brophy, C., and Panitch, A. Use of a Novel MAPKAP-K2 Inhibitor Peptide In Abdominal Adhesion Prevention. Abstract for platform presentation, Biomedical Engineering Society Annual Meeting, Los Angeles, CA, September 2007.

Flynn CR, Yi Z, Lopes L, Mandarino L, Brophy CM, Meyer C. Quantitative proteomics of inhibited TGF β signaling networks in human keloid fibroblasts. ADA, Chicago 2007.

Komalavilas P, Lopes L, Flynn CR, Smoke C, Seal B, Panitch A, Brophy CM. Reduction of heat shock protein 27 phosphorylation inhibits the development of intimal hyperplasia. Experimental Biology, San Diego, 04/08.

Morley EL, Thresher J, Grow L, Wheatley G, Komalavilas P, Brophy CM. Human saphenous vein relaxation in response to sodium nitroprusside correlates with systolic blood pressure and phosphorylated heat shock protein 27. Experimental Biology, San Diego, 04/08.

Smoke C, Morley E, Flynn CR, Komalavilas P, Brophy CM. Transduction of recombinant heat shock protein 27 increases contractility of vascular smooth muscle. Experimental Biology, San Diego, 04/08.

Carey CD, Borkon MJ, Lopes LB, Komalavilas P, Guzman RJ, Dattilo JB, Brophy CM. A cell permeant inhibitor of MAPKAP Kinase II reduces intimal hyperplasia in an organ culture model of human saphenous vein. Association of VA Surgeons, Boston, MA, 04/09.

Carey CD, Borkon MJ, Guzman RJ, Brophy CM, Dattilo RJ. Spontaneous late recanalization of the internal carotid artery following anticoagulation: case report. Association of VA Surgeons, Boston, MA, 04/09.

VI. INVITED LECTURES:

Mechanisms of graft failure. Vascular Surgery Retreat, Waterville Valley, New Hampshire, December 1990.

Something old, something new, something borrowed, something blue: New techniques in the management of infrainguinal vascular disease. Surgical grand rounds, Yale University, September, 1991.

The genetics of abdominal aortic aneurysm disease, who should be screened? Clinical management of vascular disease. September 1992, Toledo, OH.

Molecular mechanisms of vasospasm. Vascular Fellows Research Conference, Boston, MA, January, 1993.

Vasospasm: From Bedside to Bench. Surgical Grand Rounds, Yale University, March 1993.

Infrainguinal occlusive disease with and without diabetes. Yale Vascular Forum: Multidisciplinary Vascular Care, June 1993.

Molecular Biology and Genetic Engineering for the Surgeon. Academy of Surgical Research. Breckenridge, CO, October 1, 1993.

Vasospasm, from Bedside to Bench, GA Baptist Surgical Grand Rounds, April 13, 1994.

Nonoperative Approaches to Abdominal Aortic Aneurysms, MCG Surgical Research Conference, May 28, 1994.

Carotid endarterectomy for symptomatic and asymptomatic carotid stenosis. Brain Attack, AHA, Atlanta GA, May 21, 1994, Savannah GA, Feb. 25, 1995.

Regulation of Vasomotor Tone in the Human Umbilical Artery. MCG, OB/GYN Grand Rounds, June 2, 1994.

The Diabetic Patient with Vascular Insufficiency: New Tricks and Techniques for Distal Revascularization, GA Surgical Society, Sea Island, GA, September, 1994.

Angioscopically Assisted Infrainguinal Bypass Procedures. Operating Room Nursing, Savannah, GA, October 5, 1994.

Current Trends in the Management of Diabetic Foot Infections, A Primary Care Perspective, Augusta, GA, November 3, 1994.

Impaired cyclic nucleotide-dependent relaxation in human umbilical artery smooth muscle. Department of Biochemistry Seminar, MCG, November 2, 1994.

Thrombosis and vascular wall interactions, American College of Surgeons, October 26, 1995, New Orleans, LA

The Mechanisms of NO-induced vasorelaxation. Vascular Biology Seminar, 2/27/96, MCG.

Evaluation of Renal Vascular Hypertension, James B. Hudson Society, Augusta, GA 9/20/96

Chronic venous insufficiency, Ambulatory Care Lecture Series, 10/96, MCG

Renovascular Hypertension, Surgery Grand Rounds, 10/96, MCG

Heat Shock Proteins and Vasorelaxation, Research in Progress, IMMAG, MCG, 11/96.

Renovascular Hypertension - Recognition and Management, Primary Care and Family Practice Symposium, MCG, 2/22/97 and 5/3/97.

Abdominal Aortic Aneurysms - Recognition and Therapy, Primary Care and Family Practice Symposium, MCG, 2/22/97 and 5/3/97.

Surgical Approaches to Vascular Diseases of the Gastrointestinal System, Medical and Surgical Approaches to GI Disorders, Sea Island, GA, 7/97.

Stress and Cardiovascular Disease at the Cellular Level, Medical University of South Carolina, Surgical Grand Rounds, 2/3/98.

Heat Shock Proteins and Vasospasm, Research in Progress, IMMAG, MCG, 9/98.

Molecular Basis of Vasospasm: Rationale for Prevention. General Session, American College of Surgeons, Orlando, FL, 10/98.

Current Concepts in the Pathogenesis of Aortic Aneurysm Disease: Is it a Genetic Disease? Progress in Angioscopy, Harvard Continuing Education Course, Boston, MA, December 6, 1998.

Peripheral Vascular Disease. The Diabetic Foot and Wound Healing Symposium, Ramada Plaza Hotel, Augusta, GA, 3/27/99.

Carotid Endarterectomy - Indications and Results. Primary Care and Family Practice Symposium, Augusta, GA 2/16/99 and 4/20/99.

Diabetic Foot Problems - Current Management. Primary Care and Family Practice Symposium, Augusta, GA 2/16/99 and 4/20/99.

Carotid endarterectomy-Who should get surgery? Heart and Brain Attack, Savannah, GA 4/10/99.

The role of heat shock proteins in vascular smooth muscle contraction and relaxation. Basic Science of Vasospasm, University of Chicago, Chicago, IL, 4/17/99.

Carotid endarterectomy, indications and technique. Family practise conference, MCG, 4/19/99.

Stress and cardiovascular disease. Surgical Grand Rounds, Brigham and Womens Hospital, 6/99.

Stress and vascular smooth muscle responses. Research Seminar, University of Alabama, Birmingham, 6/99.

Intermittent Claudication- Evaluation and Therapy. Internal Medicine Recent Advances, Sea Island, GA 7/1/99.

Diabetic Foot Infection-Tip of the Iceberg. Internal Medicine Recent Advances, Sea Island, GA 7/2/99.

Carotid Artery Stenosis- Evaluation and Spectrum of Therapy. Internal Medicine Recent Advances, Sea Island, GA 7/3/99.

Renovascular Hypertension- Medical vs. Surgical Management. Internal Medicine

Recent Advances, Sea Island, GA 7/3/99.

Stress and Cardiovascular Disease at the Cellular and Molecular Level, Emory University, Department of Surgery, Grand Rounds, 8/5/99.

Stress of Life: From Molecules to Man. Salt Lake Surgical Society. Salt Lake City, 1/12/00.

Vasospasm, from Bench to Bedside: A Paradigm for the Surgical Scientist. Pacific Vascular Research Foundation Visiting Professor, University of California, San Francisco. 3/29/00.

The Paradox of Smooth Muscle Physiology. Rasmussen Biological Symposium, Augusta, 6/17/00.

Stress and Cardiovascular Disease at the Cellular and Molecular Level, Molecular and Cellular Biology Seminar, Arizona State University, 10/14/00.

The Etiology of Aneurysm Disease, Phoenix Integrated Residency Program, Grand Rounds, Phoenix, AZ, 11/17/00.

Stress of Life, From Man to Molecules, Distinguished Lecturer, New England Vascular Society, Providence, RI, 9/01.

From Bedside to Bench to Bedside: Technology Transfer for Surgeons, UMass Memorial Medical Center Grand Rounds, 04/02.

The Surgeon and the Biotech Revolution, Moderator, American College of Surgeons, 10/02, San Francisco, CA.

Transduction of Biomimetic Peptides of HSP20, Physiologic and Morphologic Responses. Chemistry/Biochemistry Seminar, 11/22/02 Arizona State University.

Peptides and Proteins as Pharmaceuticals. Research to Results, Tempe AZ, 12/11/02.

Women in Academic Medicine, Society for Vascular Surgery, Boston, MA, June 2003.

Science and Technology of the Future: The Surgeon's Role. Conemaugh Memorial Medical Center, Johnstown, PA, 04/07/03.

Proteomic Therapeutics for Cardiovascular Disease and Cancer, Owen Wangenstein, Surgical Forum Plenary Session, American College of Surgeons, October 2003.

Technology Transfer for Surgeons, Grand Rounds, Long Island Jewish Hospital, NY, 01/04.

From Bedside to Bench to Bedside: A Proteomics Approach. President's community enrichment program, ASU, 02/26/04.

Proteomic based therapeutics for the treatment of SAH-enhanced vasospasm. Barrows Neurologic Institute, Phoenix, AZ 04/30/04.

Constructive Politics: Managing Key Relationships through Conversations. WICR, Anaheim CA. 2004.

Leadership Training Opportunities. Women's Networking Lunch, AAS, 11/04

Prevention of Vein Graft Failure, Arizona Heart Institute. 03/05.

Molecular Vascular Surgery, UCSF, East Bay, 06/05.

Peripheral Arterial Disease in Diabetes-Presentation and Diagnosis, Multidisciplinary Management of the High Risk Diabetic Foot Conference, Scottsdale, AZ, 12/05

AzERx, Valley Ventures Annual Meeting, Tempe, AZ 2005.

Infrainguinal revascularization. Molecular Frontiers in Surgery, Tahoe, CA 02/2006.

Engineering therapeutic peptides, a proteomic approach, McGowan Institute for Regenerative Medicine, 02/02/06

Biotechnology start up companies. Commercializing Arizona Life Sciences Symposium. Phoenix, AZ 04/06.

Heat shock proteins and vasospasm, VISN18 research presentation, Phoenix, AZ 05/06.

New mechanisms of cyclic nucleotide dependent relaxation, FASEB, Smooth Muscle Symposium, Snowmass, CO, 08/06

Resolving Conflict as an Adventure, American College of Cardiology, Women's Career and Learning Development Conference, Dallas, TX 02/07 AND 02/08.

Constructive Politics: Managing Key Relationships. Society for Vascular Surgery Women's Leadership Development Retreat., Scottsdale, AZ. 03/08.

Translational Research: From Molecules to Man, Surgical Grand Rounds, Vanderbilt University, Nashville, TN, 10/03/08.

Beyond Nitric Oxide: New Concepts in the Regulation of Vascular Smooth Muscle Tone, Cardiology Conference, Vanderbilt University, Nashville, TN, 12/17/08.

Thin Filament Regulation of Smooth Muscle Tone; the Yin and Yang of the Small Heat

Shock Proteins, HSP20 and HSP27, Cell Biology Seminar, Vanderbilt University, Nashville, TN, 01/19/09.

Career Advice I Wish I'd Gotten 10 Years Ago. Association of Women Surgeons Dinner, Academic Surgical Congress, Fort Meyers, FL 02/04/09.

Yin and Yang: Balance in Science and Leadership, Joel J. Roslyn Lecture, Academic Surgical Congress, Fort Meyers, FL 02/06/09.

Smooth muscle cells: Culprits or Allies in Vascular Diseases, Research Initiatives in Vascular Disease, Washington DC. 04/28/09.

Harvard Longwood T32 Research Professor, Boston, MA, 05/04/09.

Keynote Speaker, Surgical Research Forum, Southwestern Medical Center, Dallas, TX, 06/03/09.

Bulkley Research Day Visiting Professor, Johns Hopkins, Baltimore, MD, 06/18/09.

TRAINEES:

Pre-doctoral:

Jennifer Yeh (8/93-6/94)
Drew Bagwell, AHA student fellowship (7/94-9/94)
Chris Cable, AHA student fellowship (6/95-8/95)
Keith Mannes, MCG Dean's summer student fellowship (6/95-8/95)
Audrey Gadacz (6/96-8/96) SVS/ISCVS Lifeline Foundation, student fellowship
Paul Garlich, MCG Dean's student fellowship (6/98-8/98)
David Woodrum, M.D./PhD. student 7/96-5/99, Ph.D. awarded 05/00.
Catherine Parmiter, PhD student, awarded 11/05
Christopher Garcia, undergraduate, minority research program 05/04-06/05
Erica Morley, PhD candidate 03/07 – 04/08

Post-doctoral:

E. Glenn Whitney, M.D., surgical resident (7/93-6/94)
Arthur Beall, Ph.D., postdoctoral fellow (9/94 - 1/97)
Hilde Jerius, M.D., vascular fellow (7/95-6/96)
Aaron Epstein, M.D., surgical resident (7/95-6/96)
Drew Bagwell, M.D., surgical resident (7/97-6/98)
Lem Kirby, M.D., vascular fellow (7/97-6/98)
Louis Knoepp, M.D. vascular fellow (7/98-6/99)
Ellen Shaver, M.D., VA Merit type II (7/98-current)
J. Shep Mondy, M.D., VA Career Development Award (1/99-06/2000)
Brandt Parramore, M.D., vascular fellow (7/99-2/00)
Walter Pipkin, M.D., SUS/Ethicon fellowship (7/99-6/00)
Gwen Alexander, PhD, VA Postdoctoral Fellowship (10/99 - 6/00)

Charles Robert Flynn, PhD, Arizona State University (2/01-current)
Deron Tessier, MD, Mayo Scottsdale (06/02 – 06/03)
Elizabeth Mclemore, Mayo Scottsdale (06/03-06/04)
Adam Hansen, Mayo Scottsdale (06/04-06/05)
Luciana Lopes, PhD (06/06-07/08)