

CURRICULUM VITAE

Cristine L. Heaps, Ph.D.

Department of Veterinary Physiology & Pharmacology
College of Veterinary Medicine & Biomedical Sciences
Texas A&M University
College Station, TX 77843-4466

26 February 2009

Telephone: 979/458-0753
Facsimile: 979/845-6544
Email: cheaps@cvm.tamu.edu

Education

University of Michigan, Ann Arbor	B.S.	1988	Kinesiology
University of Texas, Austin	M.A.	1990	Exercise Physiology
University of Missouri, Columbia	Ph.D.	1999	Physiology
University of Missouri, Columbia	Postdoctorate		Vascular Biology

Professional Experience

1988-1990	Graduate Research Assistant, Human Performance Laboratory, University of Texas
1990	Research Consultant, U.S. Olympic Training Ctr, Int'l Ctr for Aquatic Research, CO
1990-1995	Research Scientist, KRUG Life Sciences, Armstrong Laboratory, Brooks AFB, TX.
1992	Research Consultant, Egyptian Aerospace Medical Facility, Cairo, Egypt
1995-1999	Graduate Research Assistant, Department of Physiology, University of Missouri
2000-2002	Postdoctoral Fellow, Dept. of Biomedical Sciences, University of Missouri
2003-2004	Research Assistant Professor, Dept Biomedical Sciences, University of Missouri
2004-pres	Assistant Professor, Dept. of Vet Physiology & Pharmacology, Texas A&M University

Honors and Awards

1988	University of Michigan Honors Graduate
1990	Phi Kappa Phi National Honor Society - University of Texas, Austin Chapter
1999	American Heart Association Predoctoral Fellowship, Heartland Affiliate
2002	Individual National Research Service Award, NIH/NHLBI
2003	Invited Speaker, Microcirculatory Society Young Investigator Symp, Experimental Biology
2005	Affiliate member, Huffines Institute of Sports Medicine & Human Performance, Dept. of Health & Kinesiology, Texas A&M University
2005	Investigator, Cardiovascular Research Institute, Texas A&M University System Health Science Center
2005	Fellow, Michael E. DeBakey Center for Comparative Medicine & Biomedical Devices, Texas A&M University

Professional Affiliations

American Physiological Society
American Heart Association

Publications

A. Theses

- a. Heaps C.L. Effect of rehydration with various fluids on the cardiovascular responses to exercise. M.A. Thesis, University of Texas, Austin 1990.
- b. Heaps C.L. Adaptations of coronary smooth muscle to chronic occlusion and exercise training. Ph.D. Thesis, University of Missouri, Columbia, 1999.

B. Refereed Full-length Publications

1. González-Alonso J, CL Heaps, EF Coyle. Rehydration after exercise with common beverages and water. *Int J Sports Med* 13: 399-406, 1992.
2. Heaps CL, J González-Alonso, EF Coyle. Hypohydration causes cardiovascular drift without reducing blood volume. *Int J Sports Med* 15: 74-79, 1994.
3. Heaps CL, SH Constable. Physiological responses of rhesus monkeys to exercise at varied temperatures. *Aviat Space Environ Med* 66: 137-142, 1995.
4. Webb, JT, MD Fischer, CL Heaps, AA Pilmanis. Exercise-enhanced preoxygenation increases protection from decompression sickness. *Aviat Space Environ Med* 67: 618-624, 1996.
5. Heaps CL, MD Fischer, RC Hill. Female acceleration tolerance: Effects of menstrual state and physical condition. *Aviat Space Environ Med* 68:525-530, 1997.
6. Heaps CL, M Sturek, JA Rapps, MH Laughlin, JL Parker. Exercise training restores adenosine-induced relaxation in coronary arteries distal to chronic occlusion. *Am J Physiol Heart Circ Physiol* 278: H1984-H1992, 2000.
7. Heaps CL, DK Bowles, M Sturek, MH Laughlin, JL Parker. Enhanced L-type Ca²⁺ current density in coronary smooth muscle of exercise-trained swine is compensated to limit myoplasmic free Ca²⁺ accumulation. *J Physiol (Lond)* 528: 435-445, 2000.
8. Heaps CL, M Sturek, EM Price, MH Laughlin, JL Parker. Sarcoplasmic reticulum Ca²⁺-ATPase activity is impaired in coronary smooth muscle distal to chronic occlusion. *Am J Physiol Heart Circ Physiol* 281: H223-H231, 2001.
9. Jones JJ, NJ Dietz, CL Heaps, JL Parker, M Sturek. Calcium buffering in coronary smooth muscle after chronic occlusion and exercise training. *Cardiovasc Res* 51: 359-367, 2001.
10. Heaps CL, DK Bowles. Gender-specific K⁺-channel contribution to adenosine-induced relaxation in coronary arterioles. *J Appl Physiol* 92: 550-558, 2002.
11. Heaps CL, DK Bowles. Non-uniform changes in arteriolar myogenic tone within skeletal muscle following hindlimb unweighting. *J Appl Physiol* 92: 1145-1151, 2002.
12. Bowles DK, CL Heaps, KK Maddali, JR Turk, EM Price. Hypercholesterolemia inhibits L-type calcium current in coronary macro-, not microcirculation. *J Appl Physiol* 96: 2240-2248, 2004.
13. Heaps CL, JL Parker, M Sturek, DK Bowles. Altered calcium sensitivity contributes to enhanced contractility of collateral-dependent coronary arteries *J Appl Physiol* 97: 310-316, 2004.
14. Bowles DK, VK Ganjam, LJ Rubin, KK Maddali, DL Tharp, CL Heaps. Endogenous testosterone stimulates expression and activity of coronary L-type Ca²⁺ channels. *Am J Physiol Heart Circ Physiol* 287: H2091-H2098, 2004.
15. Heaps CL, DL Tharp, DK Bowles. Hypercholesterolemia abolishes adenosine-activation of voltage-dependent K⁺ channels in porcine coronary arterioles. *Am J Physiol Heart Circ Physiol* 288: H568-H576, 2005.
16. Korzick DH, JM Muller-Delp, P Dougherty, CL Heaps, DK Bowles, KK Krick. Exaggerated coronary vasoreactivity to endothelin-1 in aged rats: role of protein kinase C. *Cardiovasc Res* 66: 384-392, 2005.
17. Heaps CL, ML Mattox, KA Kelly, CJ Meininger, JL Parker. Exercise training increases basal tone in arterioles distal to chronic coronary occlusion. *Am J Physiol Heart Circ Physiol* 290: H1128-H1135, 2006.
18. Wu G, JK Collins, P Perkins-Veazie, M Siddiq, KD Dolan, KA Kelly, CL Heaps, CJ Meininger. Dietary supplementation with watermelon pomace juice enhances arginine availability and ameliorates the metabolic syndrome in Zucker diabetic fatty rats. *J Nutrition* 137: 2680-2685, 2007.

19. Heaps CL, EC Jeffery, GA Laine, EM Price, DK Bowles. Effects of exercise training and hypercholesterolemia on adenosine-activation of voltage-dependent K⁺ channels in coronary arterioles. *J Appl Physiol* 105: 1761-1771, 2008.
20. Forough R, MW Miller, M Mattox, W Dunlap, A Ambrus, R Barhoumi, CL Heaps, JL Parker. Enhanced myocardial vascularity and contractility by novel FGF-1 transgene in a porcine model of chronic coronary artery occlusion. *J Tehran Univ Heart Ctr* 4: 197-204, 2008.
21. Fogarty JA, MD Delp, JM Muller-Delp, GA Laine, JL Parker, CL Heaps. Neuropilin-1 is essential for enhanced VEGF₁₆₅-mediated vasodilatation in collateral-dependent arterioles of exercise trained swine. *J Vasc Res* 46:152-161, 2009.

C. Abstracts/Presentations at Scientific Meetings

1. Heaps CL, J González-Alonso, EF Coyle. The effect of rehydration with various fluids on the cardiovascular responses to exercise. *Med Sci Sports Exerc* 23: S85, 1991.
2. González-Alonso J, CL Heaps, EF Coyle. Rehydration following exercise: comparison of various solutions. *Med Sci Sports Exerc* 23: S84, 1991.
3. Kenefick RW, SW Trappe, EF Coyle, CL Heaps, PQ Franciosi, LJ D'Acquisto, JP Troup. Hematological changes with prolonged swim training at altitude. *Med Sci Sports Exerc* 23: S91, 1991.
4. Heaps CL, RA Howard, SH Constable. An exercising primate model for the evaluation of selected occupational stressors. *Med Sci Sports Exerc* 24: S132, 1992.
5. Heaps CL, DJ Coffey, SH Constable. Effect of rate of heat gain while at rest on selected serum enzymes in rhesus monkeys. *Med Sci Sports Exerc* 25: S29, 1993.
6. Heaps CL, MD Fischer, JF Wiegman, JT Webb. Blood lactate response to dual cycle ergometry at 75% VO_{2peak}. *Aviat Space Environ Med* 64: 420, 1993.
7. Fischer MD, CL Heaps, JF Wiegman, RC Hill. Female +Gz tolerance to the 4.5-7 simulated aerial combat maneuver. *Aviat Space Environ Med* 64: 450, 1993.
8. Heaps CL, MD Fischer, JT Webb. Dual-cycle ergometry as an exercise modality during prebreathe with 100% oxygen. Seventh Annual Workshop on Space Operations Applications and Research Symposium (SOAR). NASA Conference Publication 3240: 496, 1994.
9. Webb JT, MD Fischer, CL Heaps, AA Pilmanis. Exercise with prebreathe appears to increase protection from decompression sickness. Seventh Annual Workshop on Space Operations Applications and Research Symposium (SOAR). NASA Conference Publication 3240: 497, 1994.
10. Heaps CL, MD Fischer, RC Hill. Menstrual cycle effects on +Gz acceleration tolerance. Panel: Combat Aviation: Gender, Selection, and Training. Aerospace Medical Association Annual Meeting, May, 1994, San Antonio, TX.
11. Webb JT, MD Fischer, CL Heaps, AA Pilmanis. Increased denitrogenation efficiency maintains decompression sickness protection while reducing prebreathe time. *Aviat. Space Environ Med* 65: 454, 1994.
12. Rapps JA, CL Heaps, Q Zhong, M Sturek, MH Laughlin, JL Parker. Impaired adenosine-induced relaxation and decreases in myoplasmic free Ca²⁺ in porcine collateral-dependent coronary arteries: effects of exercise training. *Circulation* 94: 1488, 1996.
13. Heaps CL, JA Rapps, Q Zhong, M Sturek, MH Laughlin, JL Parker. Impaired cAMP-mediated vasorelaxation of porcine coronary arteries distal to chronic coronary occlusion: Effects of exercise training. *Circulation* 96: 1311, 1997.
14. Heaps CL, JA Rapps, Q Zhong, M Sturek, MH Laughlin, JL Parker. Effects of exercise training on smooth muscle relaxation and myoplasmic free Ca²⁺ responses of coronary arteries distal to chronic occlusion. *FASEB J* 11: A480, 1997.
15. Heaps CL, JA Rapps, AM Sawani, MH Laughlin, JL Parker. α -adrenergic vasoconstrictor responses in canine and porcine models of chronic coronary occlusion. *FASEB J* 12: A405, 1998.
16. Heaps CL, NJ Dietz, M Sturek, MH Laughlin, JL Parker. Chronic coronary artery occlusion alters vascular smooth muscle myoplasmic Ca²⁺ regulation. *FASEB J* 13: A93, 1999.

17. Heaps CL, KL Griffin, ML Mattox, MH Laughlin, JL Parker. Exercise training increases arterial tone in vasculature distal to chronic coronary occlusion. *FASEB J* 13: A1083, 1999.
18. Heaps CL, M Sturek, EM Price, MH Laughlin, JL Parker. Sarcoplasmic reticulum Ca²⁺-ATPase activity is impaired in coronary smooth muscle distal to chronic occlusion. *FASEB J* 14: A163, 2000.
19. Heaps CL, DK Bowles, M Sturek, MH Laughlin, JL Parker. Increased voltage-gated Ca²⁺ current density in coronary smooth muscle of exercise trained pigs is compensated to limit net Ca²⁺ accumulation. *FASEB J* 14: A614, 2000.
20. Fogarty JA, CL Heaps, ML Mattox, SM Hartsfield, MH Laughlin, JL Parker. Exercise training increases spontaneous tone and oscillatory behavior in porcine resistance arteries isolated distal to coronary occlusion. *FASEB J* 14: A161, 2000.
21. Fogarty JA, J Muller-Delp, CL Heaps, MD Delp, MH Laughlin, JL Parker. Size-dependent responses of coronary arteries to adenosine and exercise training in collateralized hearts. *Physiologist* 43: 344, 2000.
22. Heaps CL, DK Bowles. Gender-specific K⁺ channel contribution to adenosine-induced relaxation in porcine coronary arterioles. *FASEB J* 15: A50, 2001.
23. Heaps CL, DK Bowles. Hypercholesterolemia abolishes voltage-dependent K⁺ channel contribution to adenosine-mediated relaxation in coronary arterioles. *FASEB J* 16: A84, 2002.
24. Heaps CL, EM Price, DK Bowles. Molecular expression and function of TEA-sensitive voltage-dependent K⁺ channels in coronary arterioles. *FASEB J* 17: A71, 2003.
25. Bowles DK, VK Ganjam, LJ Rubin, KK Maddali, DL Tharp, CL Heaps. Endogenous testosterone stimulates expression and activity of L-type Ca²⁺ channels in coronary smooth muscle. *FASEB J* 18: A271, 2004.
26. Korzick DL, CL Heaps, DK Bowles. Exaggerated coronary vasoreactivity to endothelin-1 in aged rats: role of protein kinase C. *FASEB J* 18: A271, 2004.
27. Heaps CL, JL Parker, DK Bowles. Altered calcium sensitivity contributes to enhanced contractility of collateral-dependent coronary arteries. *FASEB J* 18: A270, 2004.
28. Heaps CL, DK Bowles. Membrane cholesterol content modulates voltage-dependent K⁺ current in coronary arteriolar smooth muscle. *FASEB J* 19: A686, 2005.
29. Bruce SM, JA Fogarty, JL Parker, CL Heaps. Neuropilin contributes to enhanced relaxation responses to VEGF₁₆₅ in chronically occluded porcine coronary arterioles after exercise training. *Circulation* 112: II291, 2005.
30. Heaps CL, ML Mattox, M Sturek, JL Parker. Increased Ca²⁺ sensitization in collateral-dependent coronary arterioles of exercise trained swine: role of Rho-kinase. *FASEB J* 20: A730, 2006.
31. Bruce SM, CL Heaps. Enhanced protein kinase C contribution to agonist-mediated contraction in coronary arteries from hypercholesterolemic swine. *FASEB J* 20: A1399, 2006.
32. Trott DW, SM Steelman, CL Heaps, CR Woodman. Rho-kinase contributes to increased contractile responses in coronary arteries of hypercholesterolemic swine. *FASEB J* 21: 743.11, 2007.
33. Steelman SM, CL Heaps. Protein kinase C contributes to enhanced calcium sensitivity in coronary arteries from hypercholesterolemic swine. *FASEB J* 21: 900.6, 2007.
34. Heaps CL, EC Jeffery, EM Price, DK Bowles. Impaired forskolin-mediated relaxation in coronary arterioles of hypercholesterolemic swine: role of voltage-dependent K⁺ channels. *FASEB J* 21: 741.3, 2007.
35. Hargrove L, E Jobgen, C Heaps, J Parker, K Kelly, K Wilbanks, V Baweja, G Wu, C Meininger. Fidarestat, an aldose reductase inhibitor, increases levels of tetrahydrobiopterin to support vascular function in diabetic rats. *Microcirculation* 14: 492, 2007.
36. Xie W, AJ Widmer, RJ Widmer, JL Parker, CL Heaps. Effects of ischemic heart disease and exercise training on mechanisms of nitric oxide production. *FASEB J* 22:1152.2, 2008.
37. Xie W, JG Morales, PA Lindahl, JL Parker, CL Heaps. Role of superoxide anion in exercise training-enhanced, endothelium-mediated vasodilatation in collateral-dependent coronary arterioles. *Arterioscler Thromb Vasc Biol* annual meeting 2009 (selected for presentation).

Teaching

1. Appointments

2004-present Graduate Faculty, Texas A&M University, College Station
2006-present Graduate Faculty, Texas A&M Health Science Center

2. Courses

A. Professional/Graduate

- i. Guest Lecturer, Veterinary Cell Biology 506/333; Fall 2001.
Case study: rhabdomyolysis
1 lecture hour
Department of Veterinary Biomedical Sciences
College of Veterinary Medicine, University of Missouri
- ii. Lecturer, Multidisciplinary Approaches to Biomedical Sciences 400; Spring 2004
Techniques in study of ion channel function: electrophysiology and cannulated microvessels
1.5 lecture hours
Department of Veterinary Biomedical Sciences
College of Veterinary Medicine, University of Missouri
- iii. Lecturer, Medical Sciences 689 – Cardiovascular Sciences; Spring 2006
Cellular membrane properties: membrane structure and function, membrane transporters, electrophysiology of ion channels
3 lecture hours
Department of Systems Biology and Translational Medicine
The Texas A&M System Health Science Center
- iv. Lecturer, Systems Biology & Translational Medicine 603 – Cardiovascular Science; Spring 2007; Spring 2008
Cellular membrane properties: membrane structure and function, membrane transporters, electrophysiology of ion channels
3 lecture hours
Department of Systems Biology and Translational Medicine
The Texas A&M System Health Science Center
- v. Lecturer, Veterinary Physiology & Pharmacology 910 - Physiology; Fall 2008
Vascular Hemodynamics, Arterial Structure & Function, Capillary Structure & Function, Venous Structure & Function
6 lecture hours
Department of Veterinary Physiology & Pharmacology
College of Veterinary Medicine, Texas A&M University
- vi. Lecturer, Veterinary Physiology & Pharmacology 655 – Vascular Physiology; Fall 2008
Cell and molecular biology of vascular smooth muscle; mechanisms of vascular remodeling
8 lecture hours
Department of Veterinary Physiology & Pharmacology
College of Veterinary Medicine, Texas A&M University

B. Undergraduate

- i. Graduate Teaching Assistant, Activities; Fall 1988, Winter 1989, Fall 1989, Winter 1990, Summer 1990

Principles and proper technique in tennis, racquetball, soccer, and basketball

240 contact hours

Department of Kinesiology

College of Education, University of Texas, Austin

- ii. Graduate Teaching Assistant, Elements of Physiology Laboratory; Fall 1995, Winter 1995, Fall 1996
Laboratory investigations of skeletal, cardiac and smooth muscle contraction; action potential; spinal reflexes; cardiovascular, respiratory reflexes in dog, human
72 contact hours
Department of Medical Physiology
School of Medicine, University of Missouri, Columbia
- iii. Instructor, BIMS 101, Spring 2006; Fall 2006; Spring 2007; Fall 2007; Spring 2008; Fall 2008, Spring 2009
Introduction to Biomedical Science – career options in biomedical sciences
1 lecture hour, 14 contact hours
Department of Biomedical Sciences
College of Veterinary Medicine & Biomedical Sciences, Texas A&M University
- iv. Directed Studies, VTPP 485, Spring 2007
Student: Andrew (Jimmy) Widmer; continuation of summer project 2006 indicated below under Students Mentored – Undergraduates
3 credit hours
Department of Veterinary Physiology & Pharmacology
- v. Directed Studies, VTPP 485, Spring 2008
Student: Andrew (Jimmy) Widmer; unique project compared to Summer 2006 (indicated below under Students Mentored – Undergraduates) and Spring 2007 (VTPP 485 above) project in which Jimmy participated
3 credit hours
Department of Veterinary Physiology & Pharmacology

3. Students Mentored

B. Postdoctoral Fellows

- i. Vandana Sarin: 2007-present, Veterinary Physiology & Pharmacology, College of Veterinary Medicine, Texas A&M University

C. Chair Dissertation Committee

- i. Samantha Bruce Steelman, PhD student, 2005-2006, Dept of Systems Biology and Translational Medicine, Texas A&M System Health Science Center
- ii. Wei Xie, PhD student, 2007-present, Dept of Systems Biology and Translational Medicine, Texas A&M System Health Science Center
- iii. Juan Carlos Robles, PhD student, 2007-present, Dept of Small Animal Clinical Sciences, College of Vet Med, Texas A&M University
- iv. Rachel Boyle, PhD student, 2008-present, Veterinary Physiology & Pharmacology, College of Vet Med, Texas A&M University

D. Member Dissertation Committee

- i. Robert J. Widmer, PhD, 2004-2007, Dept of Systems Biology & Translational Medicine, Texas A&M System Health Science Center
- ii. Minga Sellers, PhD, 2004-2008, Dept of Vet Physiol & Pharmacol, Texas A&M University

- iii. Daniel W. Trott, PhD candidate, 2006-pres, Dept of Health & Kinesiology, Texas A&M Univ
- iv. Gentle Chikani, PhD student, 2007-pres, Dept of Nutrition, Texas A&M University

E. Member Thesis Committee

- i. Jiyeon Yang, MS, 2007-2008, Dept of Vet Physiology & Pharmacology, Texas A&M Univ
- ii. Scott Birdwell, MS candidate, 2008-pres, Dept of Vet Physiol & Pharmacol, Texas A&M Univ

F. Member Non-Thesis Committee

- i. Kevin West, MS, 2007-2008, Dept of Health & Kinesiology, Texas A&M University
- ii. Krupa Mehta, MS, 2007-2008, Dept of Health & Kinesiology, Texas A&M University
- iii. Dawn Lundwall, MS, 2008, Dept of Health & Kinesiology, Texas A&M Univ
- iv. Jennifer Markos, MS candidate, 2008-pres, Dept of Health & Kinesiology, Texas A&M Univ
- v. Andrew Hauch, MS candidate, 2008-pres, Dept of Health & Kinesiology, Texas A&M Univ
- vi. Elizabeth Zacharias, MS candidate, 2008-pres, Dept of Health & Kinesiology, Texas A&M

G. Undergraduates

- i. Elise Jeffery, student worker, Summer 2005, Summer 2006, Visiting student from University of Michigan, Ann Arbor

Project resulted in coauthorship for Elise on Experimental Biology 2007 abstract and full-length refereed manuscript:

Heaps CL, EC Jeffery, GA Laine, EM Price, DK Bowles. Effects of exercise training and hypercholesterolemia on adenosine-activation of voltage-dependent K⁺ channels in coronary arterioles. *J Appl Physiol* 105: 1761-1771, 2008.

- ii. Julian Restrepo, Summer 2005, Prairie View A&M University Undergraduate Medical Academy-Texas A&M University System Health Science Center Summer Research Program Project resulted in poster presentation for Julian at the Historically Black Colleges & Universities - Undergraduate Program (HBCU-UP) National Research Conference, Feb 2006

Julian was awarded 2nd place in the poster presentations category:

Restrepo, J., ML Mattox, E Chalmers, SM Bruce, JL Parker, CL Heaps. *Exercise training enhances agonist-stimulated relaxation and factors that increase nitric oxide production in coronary arteries from chronically occluded hearts*

- iii. Andrew (Jimmy) Widmer, student worker - Summer 2006, Texas A&M Univ Project resulted in abstract submission for Jimmy for Texas Regional Chapter of American College of Sports Medicine

Jimmy was awarded 1st place in the Undergraduate research category:

Widmer, AJ, RJ Widmer, JL Parker, CL Heaps. *Exercise training enhances bradykinin-stimulated Ca²⁺ levels in endothelial cells of coronary occluded hearts.*

Committee Responsibilities and Service

1. Departmental

- 2006-07 Search Committee member for Asst/Assoc Professor of Cardiovascular Pharmacology, Dept of Veterinary Physiol & Pharmacol, Texas A&M Univ
- 2008-09 Search Committee member for Asst/Assoc/Full Professor of Physiology, Dept of Veterinary Physiol & Pharmacol, Texas A&M Univ

2. College

- 2005-06 Search Committee member for Associate Dean for Graduate Studies & Research, College of Veterinary Medicine and Biomedical Sciences, Texas A&M University
- 2006-09 Ad-hoc Faculty Interviewer for CVM Selections Committee

- 2007-08 Search Committee member for Associate Dean for Graduate Studies & Research, College of Veterinary Medicine and Biomedical Sciences, Texas A&M University
- 2007-08 Committee member, Research Advisory Committee, CVM
- 2008 Ad-hoc Committee member, Biomedical Sciences (BIMS) Graduate Student Scholarship Committee

3. Texas A&M University/Health Science Center

- 2005 Judge for oral presentations, HSC Cardiovasc Research Institute Research Retreat
- 2006 Organizing committee, HSC Cardiovasc Research Institute Research Retreat
- 2006 Judge for poster presentations, HSC Cardiovasc Research Institute Research Retreat
- 2008 HSC Cardiovascular Research Institute Seminar Series Organizational Committee

4. National

a. Manuscript Review

- Ad hoc Reviewer, *American Journal of Physiology: Heart & Circulatory Physiol*
- Ad hoc Reviewer, *Journal of Physiology (London)*
- Ad hoc Reviewer, *American Journal of Physiology: Cell Physiology*
- Ad hoc Reviewer, *Journal of Applied Physiology*
- Ad hoc Reviewer, *Medicine and Science in Sport and Exercise*
- Ad hoc Reviewer, *Cardiovascular Research*
- Ad hoc Reivewer, *Pharmacological Reports*
- Ad hoc Reviewer, *Thoracic and Cardiovascular Surgeon*
- Ad hoc Reivewer, *Vascular Pharmacology*
- Ad hoc Reviewer, *Arteriosclerosis, Thrombosis, & Vascular Biology*

b. Grant Review Boards

- i. Local:
- ii. State/Regional:
 - 2007-2008 American Heart Association peer review committee member for the Western States & Texas Review Consortium
 - 2009-2010 American Heart Association peer review committee member for the South Central Affiliate
- iii. National:
- iv. International:
 - 2008 Natural Sciences & Engineering Research Council (NSERC) of Canada Discovery Grant program, Ad hoc reviewer

c. Other Professional Service

- 2004 Co-Chair, Featured Topic Symposium, Experimental Biology

Invited Seminars/Symposia

- 2001 University of Missouri, Dept. of Physiology
- 2003 Texas A&M Univ System Health Sci Ctr, Dept of Medical Physiology
- 2004 University of New Mexico, Dept. of Cell Biology & Physiology
- 2004 Texas A&M University, Dept. of Vet Physiology & Pharmacology

2006 Texas A&M Univ System Health Sci Ctr, Cardiovascular Research
Institute 2nd Annual Research Retreat
2008 Texas A&M University, Dept. of Health & Kinesiology
2008 Trinity University, Dept. of Biology, San Antonio, TX

Grant Support

Active Research Support

R01 HL64931 (Heaps CL – PI; Parker JL - Col)
National Institutes of Health, NHLBI
Chronic coronary occlusion, exercise and NO

08/01/2006-07/31/2011
(\$250,000 ADC; \$1,250,000 TDC)

The primary goal of this research is to determine the cellular mechanisms responsible for effects of exercise training on nitric oxide bioavailability and role in the underlying setting of chronic coronary artery occlusion and collateral-dependent perfusion.

Pending Research Support

R01 HL092916 (Stewart RH & Wilson E – CoPIs; Heaps – Col)
National Institutes of Health, NHLBI

Short-term mesenteric lymphatic adaptation to trauma-related intestinal edema

The main goal of this proposal is to determine the effect of mesenteric venous hypertension and intestinal edema on both functional and molecular adaptations in mesenteric lymphatic vessels in a bovine model.

R01 HL098584-01 (Heaps CL & Parker JL – CoPIs)

05/01/2010-04/30/2015

National Institutes of Health, NHLBI

Exercise training, coronary occlusion, and vascular adaptations

The primary goal of this research is to determine specific cell signaling mechanisms that contribute to exercise-enhanced agonist-mediated vasoconstriction in collateral-dependent coronary arteries and to determine the interplay between increased smooth muscle contraction and endothelium-dependent dilatation during both rest and exercise stress.

09GRNT2060012 (Heaps CL – PI)

07/01/2009-06/31/2011

American Heart Association, Grant-in-Aid, South Central Affiliate

Exercise training, chronic coronary occlusion, and vascular biology

The overall goal of this research is to determine the interplay between increased smooth muscle contraction and endothelium-dependent dilatation in collateral-dependent arteries of exercise trained animals.

09POST2080012 (Sarin-PI; Heaps CL & Muthuchamy M– Co-Sponsors) 07/01/2009-06/31/2011

American Heart Association, Postdoctoral Fellow, South Central Affiliate

Exercise training restores myocardial function in porcine chronic coronary occlusion model

The overall goal of this research is to determine the effect of exercise training on calcium handling mechanisms that contribute to cardiac muscle contraction in the underlying setting of chronic coronary artery occlusion.

09PRE2080236 (Xie – PI; Heaps CL – Sponsor)

07/01/2009-06/31/2011

American Heart Association, Predoctoral Fellow, South Central Affiliate

Superoxide in exercise training-enhanced, endothelium-mediated dilatation in collateral-dependent coronary arterioles

The overall goal of this research is to determine the contribution of superoxide anion to endothelium-

dependent vasodilatation in collateral-dependent arteries of exercise trained animals.

Completed Research Support

TAES FY2008 Research Equipment & Facilities Upgrade Award awarded 12/12/2007
Texas Agricultural Experiment Station (TAES), Texas A&M University System (\$41,567)
Funds were awarded for purchase of digital fluorescence imaging system to be used for in vitro measures of intracellular ion concentrations involved in cellular signaling.

0330252N (Heaps CL – PI) 01/01/2003-12/31/2006
1 yr no-cost extension to 12/2007
American Heart Association, Scientist Development Grant, National (\$59,091 ADC; 236,364 TDC)
Voltage-dependent K⁺ channel isoforms contributing to adenosine-mediated relaxation
The overall goal of this research is to determine the effect of hypercholesterolemia on the protein and mRNA expression of voltage-dependent K⁺ channels in coronary arteriolar smooth muscle.

0360056Z (Heaps CL – PI) 01/01/2003-12/31/2004
American Heart Association, Beginning Grant-In-Aid, Heartland Affiliate (\$108,900 TDC)
Voltage-dependent K⁺ channel isoforms contributing to adenosine-mediated relaxation
(Relinquished to accept AHA SDG)
The research goals proposed in this application were the same as that in the AHA SDG above.

F32 HL70500 (Heaps CL – PI) 12/13/2002-11/14/2004
Postdoctoral Fellowship, Individual Natl Research Service Award, NIH (\$94,340 TDC)
Adenosine activation of voltage-dependent K⁺ channels
Sponsors: Douglas K. Bowles, Ph.D. and Elmer M. Price, Ph.D.
The primary goal of this research was to determine the voltage-dependent K⁺ channel isoforms that are activated by adenosine in coronary arteriolar smooth muscle.

9910191Z (Heaps CL – PI) 7/1/1999-12/31/1999
American Heart Association, Predoctoral Fellowship, Heartland Affiliate (\$16,000 annual stipend)
Myoplasmic calcium regulation is altered in vascular smooth muscle cells distal to chronic coronary artery occlusion
Sponsors: M. Harold Laughlin, Ph.D. and Douglas K. Bowles, Ph.D.
The primary objective of this research was to elucidate specific alterations in intracellular calcium regulatory mechanisms in smooth muscle cells of collateral-dependent coronary arteries of hearts subjected to chronic occlusion.