

Curriculum Vitae Brad J. Behnke, Ph.D.

Date of Birth

February 25, 1975

Place of Birth Hutchinson, Kansas

Current Address *Work:* Department of Applied Physiology and Kinesiology
Cardiorespiratory Physiology Laboratory
University of Florida
Florida Gym 124
PO Box 118205
Gainesville, Florida 32611
Office (352) 392-0584 ext. 1324
Fax (352) 392-5262
Cell (304)282-0381
Email: bjbehnke@hhp.ufl.edu

Home: 9404 NW 156th Ave
Alachua, FL. 32615

Education

May 2003 Kansas State University - College of Veterinary Medicine
Discipline: Physiology (Ph.D.)

May 2000 Kansas State University
Discipline: Kinesiology (M.S.)

Dec. 1998 Kansas State University
Discipline: Kinesiology (B.S.)

Academic Appointments

2008-current Assistant Professor, Department of Applied Physiology & Kinesiology,
Center for Exercise Science. *University of Florida - College of Health and
Human Performance*

- 2005-2008 Research Associate, Division of Exercise Physiology and the Center for Interdisciplinary Research in Cardiovascular Sciences, *West Virginia University School of Medicine*
- 2003-2005 Research Associate, *Department of Health and Kinesiology, Texas A&M University.*
- 2003-2004 Instructor, *Department of Health and Kinesiology, Texas A&M University* (Exercise Physiology II, Kinesiology 638).
- 1999-2001 Laboratory Coordinator- *Department of Kinesiology, Kansas State University* (Physiology of Exercise, Kin 336). Responsible for all administrative aspects of laboratory involving over 50 undergraduate students, and 4 teaching assistants, as well as teaching and conducting laboratory sections.
- 1998-1999 Laboratory Instructor - *Department of Kinesiology, Kansas State University* (Physiology of Exercise, Kin 336). Same teaching responsibilities as above, with emphasis placed on teaching data collection, scientific writing and critical thinking skills.
Laboratory Instructor - *Department of Kinesiology, Kansas State University* (Bio-Behavioral Basis of Exercise, Kin 220). Laboratory consisted of short lectures, grading assignments and exams, administered blood pressure tests, body composition analysis, sub- and maximal oxygen consumption (VO₂) tests, and respiratory function tests (via spirometry).
- 2000-2002 Teaching Laboratory Assistant - *Department of Anatomy & Physiology* (Veterinary Physiology II, A&P 747). Laboratory focused on mechanics and structure of the lungs in health and disease. Demonstrations of spirometry and breath holding with different F_IO₂'s, Law of Laplace, and maximal oxygen consumption tests.
- 1997-1998 Laboratory Instructor - *Department of Kinesiology, Kansas State University* (Exercise Physiology, Kin 335). Laboratory focused on dynamics of physiology in response to physical stresses. Emphasis placed on group laboratory reports and data collection.
- 1998-2001 Instructor- *Department of Kinesiology, Kansas State University* (Fitness & Conditioning, Kin 161; Weight training, Kin 163; Basketball, Kin 120). Lower level undergraduate courses with 40 to 60 students per class, emphasizing healthy lifestyles and fitness goals. Basic fundamentals of exercise training were stressed with various fitness tests administered throughout the course.

Academic Awards:

American College of Sports Medicine, Central States Chapter. Outstanding Student Research Award, 1999.
Environmental and Exercise Physiology Recognition Award (Experimental Biology, New Orleans), 2002.
Professionals in Training Presentation Award, American College of Sports Medicine, TX Chapter, 2003.
Professionals in Training Presentation Award, American College of Sports Medicine, TX Chapter, 2004.
New Investigator Award, American Physiological Society, 2009.
New Investigator Award, American College of Sports Medicine, 2009.

Society Membership:

American College of Sports Medicine
American Physiological Society
American Cancer Society
The Microcirculatory Society

Committee's Served:

Trainee Advisory Committee (2003-2007; *Representative for the Environmental and Exercise Physiology section*)
Environmental and Exercise Physiology Steering Committee (APS)

Extramural Funding:

American College of Sports Medicine, Central States Chapter. Outstanding Student Research Award. \$500, 1999.

Environmental and Exercise Physiology Recognition Award (Experimental Biology, New Orleans). \$500, 2002.

Pre-Doctoral Fellowship (National Research Service Award (F31)). National Institutes of Health. \$48,100. 2002-2004.

Post-Doctoral Fellowship (Ruth L. Kirschstein National Research Service Awards (NRSA) Postdoctoral Fellowship (F32)). National Institutes of Health. \$188,772. 2006-2008.

Research Scientist Development Award (KO1). National Institutes of Health. \$698,297. 2008-2013.

Pending Support

New Investigator Research Grant. Department of Defense Prostate Cancer Research Program. \$374,000. 2010-2013.

Publications:

Peer-Reviewed Papers

1. Poole, D.C., W.L. Sexton, **B.J. Behnke**, C.S. Ferguson, K.S. Hageman and T.I. Musch. Respiratory muscle blood flows during physiological and chemical hyperpnea in the rat. *J. Appl. Physiol.* 88: 186-194, 2000.
2. Bailey, J.K., C.A. Kindig, **B.J. Behnke**, T.I. Musch, G.W. Schmid-Schoenbein and D.C. Poole. Spinotrapezius muscle microcirculatory function: effects of surgical exteriorization. *Am. J. Physiol.* 279: H3131-H3137, 2000.
3. Poole, D.C., C.A. Kindig and **B.J. Behnke**. Effects of emphysema on diaphragm microvascular oxygen pressure. *Am. J. Respir. Crit. Care Med.* 163: 1081-1086, 2001.
4. **Behnke, B.J.**, C.A. Kindig, T.I. Musch, S. Koga and D.C. Poole. Dynamics of muscle microvascular PO₂ across the rest-exercise transition. *Respir. Physiol.* 126: 53-63, 2001.
5. McDonough, P., **B.J. Behnke**, C.A. Kindig and D.C. Poole. Muscle microvascular PO₂ kinetics during the exercise off-transient. *Exp. Physiol.* 86: 349-356, 2001.
6. Kindig, C.A., P. McDonough, M.R. Finley, **B.J. Behnke**, T.E. Richardson, D.J. Marlin, H.H. Erickson and D.C. Poole. Nitric oxide inhalation reduces pulmonary hypertension but not hemorrhage in maximally exercising horses. *J. Appl. Physiol.* 91: 2674-2678, 2001.
7. **Behnke, B.J.**, C.A. Kindig, T.I. Musch, W.L. Sexton and D.C. Poole. Effects of prior contractions on microvascular oxygen pressure at the onset of subsequent contractions. *J. Physiol. (London)* 539.3: 927-934, 2002.
8. McDonough, P., C.A. Kindig, T.S. Hildreth, **B.J. Behnke**, H.H. Erickson and D.C. Poole. Effect of body incline on cardiac performance. *Equine Vet. J.* 34: 506-509, 2002.
9. **Behnke, B.J.**, C.A. Kindig, P. McDonough, W.L. Sexton and D.C. Poole. Effect of type I diabetes on the dynamics of muscle microvascular oxygenation. *Am. J. Physiol.* 283: H926-932, 2002.
10. Geer, C.M., **B.J. Behnke**, P. McDonough and D.C. Poole. Dynamics of microvascular oxygen exchange in the rodent diaphragm. *J. Appl. Physiol.* 93: 227-232, 2002.
11. Diederich, E.R., **B.J. Behnke**, P. McDonough, C.A. Kindig, T.J. Barstow, D.C. Poole and T.I. Musch. Dynamics of microvascular oxygen partial pressure in contracting muscle of rats with chronic heart failure. *Cardiovasc. Res.* 56: 479-486, 2002.

12. **Behnke, B.J.**, T.J. Barstow, C.A. Kindig, P. McDonough, T.I. Musch and D.C. Poole. Dynamics of oxygen uptake following exercise onset in rat skeletal muscle. *Respir. Physiol. Neurobiol.* 133: 229-239, 2002.
13. **Behnke, B.J.**, P. McDonough, D.J. Padilla, T.I. Musch and D.C. Poole. Oxygen exchange profile in muscles of contrasting fiber types. *J. Physiol. (London)* 549: 597-602, 2003.
14. Isaza, R., **B.J. Behnke**, J.K. Bailey, P. McDonough, N.C. Gonzalez and D.C. Poole. Arterial blood gas control in the recumbent Asian elephant. *Respir. Physiol. Neurobiol.* 134: 169-176, 2003.
15. Russell, J.A., C.A. Kindig, D.C. Poole, **B.J. Behnke** and T.I. Musch. Effects of aging on capillary geometry and hemodynamics in rat spinotrapezius muscle. *Am. J. Physiol.* 285: H251-258, 2003.
16. McDonough, P., **B.J. Behnke** and D.C. Poole. Recovery of microvascular PO₂ during the exercise off-transient in muscles of different fiber type. *J. Appl. Physiol.* 96: 1039-1046, 2004.
17. Poole, D.C., **B.J. Behnke**, P. McDonough, R.M. McAllister and D.F. Wilson. Measurement of muscle microvascular oxygen pressures: compartmentalization of phosphorescent probe. *Microcirc.* 11: 317-326, 2004.
18. **Behnke, B.J.**, M.D. Delp, P. McDonough, S.A. Spier, D.C. Poole and T.I. Musch. Effects of chronic heart failure on microvascular oxygen exchange dynamics in muscles of contrasting fiber type. *Cardiovasc. Res.* 61: 325-332, 2004.
19. McDonough, P., **B.J. Behnke**, D.C. Poole and T.I. Musch. Effects of chronic heart failure in rats on the recovery of microvascular PO₂ after contractions in muscles of opposing fibre type. *Exp. Physiol.* 89: 473-485, 2004.
20. McDonough, P., C.A. Kindig, T.S. Hildreth, D.J. Padilla, **B.J. Behnke**, H.H. Erickson and D.C. Poole. Effect of Furosemide and the Equine Nasal Strip on exercise-induced pulmonary haemorrhage and time-to-fatigue in maximally exercising horses. *Equine and Comp. Exerc. Physiol.* 1: 177-184, 2004.
21. P. McDonough, **B.J. Behnke**, D.J. Padilla, T.I. Musch, and D.C. Poole. Effects of exercise intensity and fibre type on microvascular oxygen exchange. *J. Physiol. (London)* 563: 903-913, 2005.
22. **Behnke, B.J.**, M.D. Delp, P.J. Dougherty, D.C. Poole and T.I. Musch. Effects of aging on microvascular oxygen pressures in rat skeletal muscle. *Resp. Physiol. Neurobiol.* 146: 259-268, 2005.

23. Kano, Y., D.J. Padilla, **B.J. Behnke**, K.S. Hageman, T.I. Musch and D.C. Poole. Effects of eccentric exercise on microcirculation and microvascular oxygen pressures in rat spinotrapezius muscle. *J. Appl. Physiol.* 99: 1516-1522, 2005.
24. **Behnke, B.J.**, D.J. Padilla, L.F. Ferreira, M.D. Delp, T.I. Musch, and D.C. Poole. Effects of arterial hypotension on microvascular oxygen exchange in contracting skeletal muscle. *J. Appl. Physiol.* 100: 1019-1026, 2006.
25. Ferreira, L.F., P. McDonough, **B.J. Behnke**, T.I. Musch and D.C. Poole. Blood flow and O₂ extraction as a function of O₂ uptake in muscles composed of different fiber types. *Resp. Physiol. Neurobiol.* 153(3):237-49, 2006.
26. **Behnke, B.J.**, R. Prisby, L.A. Lesniewski, A.J. Donato, and M.D. Delp. Influence of ageing and physical activity on vascular morphology in rat skeletal muscle. *J. Physiol.* 575(Pt 2): 617-26, 2006.
27. Padilla, D.J., P. McDonough, **B.J. Behnke**, Y. Kano, K.S. Hageman, T.I. Musch, and D.C. Poole. Effects of Type II diabetes on capillary hemodynamics in skeletal muscle. *Am. J. Physiol. Heart Circ. Physiol.* 291(5):H2439-44, 2006.
28. Padilla, D.J., P. McDonough, **B.J. Behnke**, Y. Kano, K.S. Hageman, T.I. Musch, and D.C. Poole. Effects of Type II diabetes on muscle microvascular oxygen pressures. *Respir. Physiol. Neurobiol.* 156(2): 187-95, 2007.
29. Hahn, S.A., L.F. Ferreira, J.B. Williams, K.P. Jansson, **B.J. Behnke**, T.I. Musch, and D.C. Poole. Downhill treadmill running trains the rat spinotrapezius muscle. *J. Appl. Physiol.* 102(1): 412-6, 2007.
30. McDonough, P., **B.J. Behnke**, D.J. Padilla, T.I. Musch, and D.C. Poole. Control of microvascular oxygen pressures during recovery in rat fast-twitch muscle of differing oxidative capacity. *Exp. Physiol.* 92(4): 731-8, 2007.
31. Prisby, R.D., M.W. Ramsey, **B.J. Behnke**, J.M. Domingues, A.J. Donato, M.R. Allen, and M.D. Delp. Aging reduces skeletal blood flow, endothelium-dependent vasodilation, and NO bioavailability in rats. *J. Bone. Miner. Res.* 22(8): 1280-8, 2007.
32. **Behnke, B.J.**, M.D. Delp, D.C. Poole, and T.I. Musch. Aging potentiates the effect of congestive heart failure on muscle microvascular oxygenation. *J. Appl. Physiol.* 103(5): 1757-63, 2007.
33. Ramsey, M.W., **B.J. Behnke**, R. Prisby, and M.D. Delp. Effects of Aging on Adipose Resistance Artery Vasoconstriction: Possible Implications for Orthostatic Blood Pressure Regulation. *J. Appl. Physiol.* 103(5): 1636-1643, 2007.

34. Delp, M.D., **B.J. Behnke**, S. Spier, G. Wu, and J. Muller-Delp. Aeging diminishes endothelium-dependent vasodilation and tetrahydrobiopterin content in rat skeletal muscle arterioles. *J. Physiol. (London)*. 586(4):1161-8, 2008. Epub 2007 Dec 6.
35. **Behnke, B.J.**, D.C. Zawieja, A.A. Gashev, C.A. Ray, and M.D. Delp. Diminished mesenteric vaso- and venoconstriction and elevated plasma ANP and BNP with simulated microgravity. *J. Appl. Physiol.* 104(5):1273-80, 2008. Epub 2008 Jan 24.
36. Lesniewski, L.A., A.J. Donato, **B.J. Behnke**, C. Woodman, C.A. Ray, and M.D. Delp. Decreased NO Signaling Leads to Enhanced Vasoconstrictor Responsiveness in Skeletal Muscle Arterioles of the ZDF Rat Prior to Overt Diabetes and Hypertension. *Am. J. Physiol. Heart. Circ. Physiol.* 294(4):H1840-50, 2008. Epub 2008 Feb 1.
37. Colleran, P.N., **B.J. Behnke**, M.K. Wilkerson, A.J. Donato, and M.D. Delp. Simulated microgravity alters vasoconstriction dynamics of mesenteric arteries through intracellular Ca²⁺ release mechanism. *Am. J. Physiol. Regul. Integr. Comp. Physiol.* 294(5):R1577-85, 2008. Epub 2008 Mar 19.
38. Epp, T.S., P. McDonough, D.E. Myers, D.J. Carlin, **B.J. Behnke**, C.A. Kindig, D.C. Poole and H.H. Erickson. The effectiveness of immunotherapy in treating exercise-induced pulmonary hemorrhage. *J. Equine Vet. Sci.* 26: 527-532, 2009.
39. **Behnke, B.J.**, L.F. Ferreira, P.J. McDonough, T.I. Musch, and D.C. Poole. Recovery dynamics of skeletal muscle oxygen uptake during the exercise off-transient. *Resp. Physiol. Neurobiol.* 168: 254-260, 2009.

Published Letters:

1. **Behnke, B.J.**, T.I. Musch, P. McDonough and D.C. Poole. "Comparison of oxygen uptake on-kinetic calculations in heart failure." *Med. Sci. Sports Exerc.* 35: p. 708, 2003.
2. McDonough, P., **B.J. Behnke**, D.J. Padilla, T.I. Musch, and D.C. Poole. "Control of oxygen delivery within skeletal muscle". *Physiol. News* 60:23-4, 2005.
3. Poole, D.C., **B.J. Behnke**, and T.I. Musch. Comments on point: counterpoint: exercise training does/does not induce vascular adaptations beyond the active muscle beds. *J. Appl. Physiol.* 105(3): 1008-1010, 2008.

Reviews

1. Poole, D.C., C.A. Kindig, **B.J. Behnke**, A.M. Jones. Oxygen Uptake (VO₂) kinetics in different species: A brief review. *Equine and Comp. Exerc. Physiol.* 2: 1-15, 2005.
2. Poole, D.C., **B.J. Behnke**, Padilla, D.J. Dynamics of muscle microcirculatory oxygen exchange. *Med. Sci. Sports Exercise* 37: 1559-1566, 2005.
3. Poole, D.C., **B.J. Behnke**, and T.I. Musch. Capillary hemodynamics and oxygen pressures in the aging microcirculation. *Microcirc.* 13(4): 289-99, 2006.
4. Poole, D.C., L.F. Ferreira, **B.J. Behnke**, T.J. Barstow, A.M. Jones. The Final Frontier: Oxygen flux into muscle at exercise onset. *Exerc Sport Sci Rev.* 35(4): 166-173, 2007.

Book Chapters

1. Kindig, C.A., **B.J. Behnke**, D.C. Poole. "VO₂ dynamics in different species". In: Oxygen Uptake Kinetics in Health and Disease. Edited by A.M. Jones and D.C. Poole. London: Taylor & Francis Press, 2004. 115-138.
2. **Behnke, B.J.**, T.J. Barstow, D.C. Poole. "Relationship between VO₂ responses at the mouth and across the exercising muscles". In: Oxygen Uptake Kinetics in Health and Disease. Edited by A.M. Jones and D.C. Poole. London: Taylor & Francis Press, 2004. 141-153.
3. Poole, D.C., Kindig, C.A., **B.J. Behnke**. "VO₂ kinetics in different disease states". In: Oxygen Uptake Kinetics in Health and Disease. Edited by A.M. Jones and D.C. Poole. London: Taylor & Francis Press, 2004. 353-372.

Abstracts:

1. D.C. Poole, J.K. Bailey, **B.J. Behnke** and C.A. Kindig. Evidence for a reduced diaphragmatic microvascular PO₂ in Emphysema. *Med. Sci. Sports Exerc.* 31: S127, 1999.
2. D.C. Poole, **B.J. Behnke**, J.K. Bailey, and C.A. Kindig. Impaired diaphragmatic O₂ delivery-to-O₂ utilization relationship in emphysema. *FASEB J.* 13: A25, 1999.
3. J.K. Bailey, C.A. Kindig, **B.J. Behnke**, T.I. Musch and D.C. Poole. Static and dynamic microcirculatory function in the spinotrapezius muscle: effects of surgical manipulation. *NIH Summer Research Symposium*, August 10, 1999.
4. **B.J. Behnke**, C.A. Kindig, T.I. Musch and D.C. Poole. Muscle microvascular oxygenation across the rest-exercise transition. *Central States ACSM*, October 23, 1999.
5. J.K. Bailey, C.A. Kindig, **B.J. Behnke**, T.I. Musch and D.C. Poole. Microcirculatory function in the spinotrapezius muscle: effects of surgical manipulation. *FASEB J.* 11: A4, 2000.

6. D.C. Poole, **B.J. Behnke**, C.A. Kindig and S. Koga. Independence of microvascular O₂ kinetics and fiber type at exercise onset. *Med. Sci. Sports Exerc.* 32: S128, 2000.
7. **B.J. Behnke**, C.A. Kindig, E.R. Diederich, T.I. Musch, S. Koga and D.C. Poole. Muscle microvascular oxygen kinetics across the rest-exercise transition. *Med. Sci. Sports Exerc.* 32: S128, 2000.
8. W.L. Sexton, C.A. Kindig, **B.J. Behnke**, J.K. Bailey, T. Richardson and D.C. Poole. Muscle microvascular oxygen pressure at the onset of contractions in type I diabetes. *Physiologist* 43: 312, 2000.
9. **B.J. Behnke**, C.A. Kindig, W.L. Sexton and D.C. Poole. Effects of prior contractions on muscle microvascular PO₂ dynamics at exercise onset. *Med. Sci. Sports Exerc.* 33: S343, 2001.
10. P. McDonough, **B.J. Behnke**, C.A. Kindig and D.C. Poole. Muscle microvascular PO₂ kinetics at the off-transient from electrical stimulation. *Med. Sci. Sports Exerc.* 33: S314, 2001.
11. E. Diederich, **B.J. Behnke**, P. McDonough, C.A. Kindig, K.S. Hageman, D.C. Poole and T.I. Musch. Effects of myocardial infarction on muscle microvascular PO₂ dynamics. *Med. Sci. Sports Exerc.* 33: S267, 2001.
12. C.M. Geer, **B.J. Behnke**, P. McDonough, J.K. Bailey and D.C. Poole. Dynamics of Microvascular O₂ exchange in diaphragm. *Med. Sci. Sports Exerc.* 33: S343, 2001.
13. H.H. Erickson, C.A. Kindig, P. McDonough, M.R. Finley, **B.J. Behnke**, T.E. Richardson and D.C. Poole. Effects of inhaled nitric oxide on pulmonary artery pressure and EIPH in maximally exercising horses. *ICEEP*, 2001.
14. P. McDonough, C.A. Kindig, T.S. Hildreth, **B.J. Behnke**, H.H. Erickson and D.C. Poole. Optimizing cardiac performance in the thoroughbred horse. *ICEEP*, 2001.
15. P. McDonough, C.A. Kindig, T.S. Hildreth, **B.J. Behnke**, J. Russell, K. Eklund, H.H. Erickson and D.C. Poole. Effects of treadmill incline on oxygen consumption and cardiac output in thoroughbred horses. *Central States ACSM*, Oct. 19, 2001.
16. **B.J. Behnke**, P. McDonough, R.M. McAllister, D.F. Wilson and D.C. Poole. Distribution of phosphorescent probe for microvascular oxygen pressures within skeletal muscle. *Central States ACSM*, Oct. 19, 2001.
17. D.C. Poole, **B.J. Behnke**, P.J. McDonough, C.A. Kindig, E.R. Diederich, W.L. Sexton, C.M. Geer and T.I. Musch. Dynamics of muscle oxygen exchange in health and disease. *Central States ACSM*, Oct. 19, 2001.
18. P. McDonough, **B.J. Behnke**, C.M. Geer, E.R. Diederich and D.C. Poole. The influence of fiber type and oxidative capacity on locomotory muscle microvascular PO₂ kinetics. *Med. Sci. Sports Exerc.* 34: S110, 2002.
19. J.A. Russell, C.A. Kindig, T.E. Richardson, **B.J. Behnke**, D.C. Poole and T.I. Musch. Capillary hemodynamics in aged skeletal muscle. *Med. Sci. Sports Exerc.* 34: S114, 2002.
20. D.C. Poole, **B.J. Behnke**, C.A. Kindig and W.L. Sexton. Muscle oxygen exchange in type I diabetes. *Med. Sci. Sports Exerc.* 34: S133, 2002.
21. **B.J. Behnke**, K.S. Hageman, P.J. McDonough, T.I. Musch and D.C. Poole. Effects of moderate heart failure on skeletal muscle blood flow response to contractions. *Med. Sci. Sports Exerc.* 34: S171, 2002.
22. **B.J. Behnke**, C.A. Kindig, W.L. Sexton, P. McDonough, and D.C. Poole. Impact of Type I

- diabetes on the muscle microvascular PO₂ profile across the rest-contractions transition. *FASEB* 646.3, 2002.
23. D.C. Poole, E.R. Diederich, **B.J. Behnke**, P. McDonough, C.A. Kindig, and T.I. Musch. Effects of chronic heart failure on microvascular oxygen pressure at the onset of muscle contractions. *FASEB* 610.18, 2002.
 24. L.A. Abbo, K.D. Ross, **B.J. Behnke**, D.J. Padilla, T.I. Musch, and D.C. Poole. Hypovolemic hypotension alters the dynamic balance between O₂ delivery and utilization in contracting skeletal muscle. Veterinary Research Scholars Program Symposium, Kansas State College of Veterinary Medicine, August 8, 2002.
 25. **B.J. Behnke**, T.J. Barstow, C.A. Kindig, P. McDonough, T.I. Musch, and D.C. Poole. Dynamics of oxygen uptake following exercise onset in rat skeletal muscle. *Central States ASCM*, Oct. 11-13, 2002.
 26. T.S. Hildreth, P.J. McDonough, D.J. Padilla, **B.J. Behnke**, D.E. Myers, D.C. Poole, and H.H. Erickson. Is immunotherapy effective in reducing exercise induced pulmonary hemorrhage? *Central States ASCM*, Oct. 11-13, 2002.
 27. K.D. Ross, L.A. Abbo, **B.J. Behnke**, D.J. Padilla, T.I. Musch, and D.C. Poole. Hypovolemic hypotension alters the dynamic balance between O₂ delivery and utilization in contracting skeletal muscle. *Central States ASCM*, Oct. 11-13, 2002.
 28. P. McDonough, **B.J. Behnke**, D.J. Padilla, K.D. Ross, and D.C. Poole. Locomotory muscle microvascular PO₂ kinetics: influence of oxidative capacity and workload. *Central States ASCM*, Oct. 11-13, 2002.
 29. **B.J. Behnke**, P. McDonough, D.J. Padilla, T.I. Musch, and D.C. Poole. Oxygen exchange in muscles of contrasting fiber types. *Med. Sci. Sports Exerc.* 35: S229, 2003.
 30. D.J. Padilla, **B.J. Behnke**, J.K. Hansen, and D.C. Poole. Different microvascular O₂ responses to contractions in slow and fast-twitch muscle are associated with capillarity. *Med. Sci. Sports Exerc.* 35: S43, 2003.
 31. K.D. Ross, L.A. Abbo, **B.J. Behnke**, D.J. Padilla, T.I. Musch, and D.C. Poole. Hypovolemic hypotension alters the dynamic balance between O₂ delivery and utilization in contracting skeletal muscle. *Med. Sci. Sports Exerc.* 35: S309, 2003.
 32. P. McDonough, **B.J. Behnke**, D.J. Padilla, K.D. Ross, and D.C. Poole. On-off asymmetry of locomotory muscle microvascular PO₂ kinetics: Effect of exercise intensity. *Med. Sci. Sports Exerc.* 35: S151, 2003.
 33. **B.J. Behnke**, T.I. Musch, P. McDonough, and D.C. Poole. Effects of chronic heart failure on microvascular oxygen exchange dynamics in muscles of contrasting fiber types. *FASEB* 346.19, 2003.
 34. P. McDonough, **B.J. Behnke**, D.J. Padilla, K.D. Ross, and D.C. Poole. Control of O₂ exchange in rat locomotory muscle: Effect of fiber type. *FASEB* 317.5, 2003.
 35. T.S. Hildreth, P. McDonough, D.J. Padilla, **B.J. Behnke**, D.C. Poole, H.H. Erickson. Is immunotherapy effective in reducing exercise-induced pulmonary hemorrhage (EIPH)? *FASEB* 592.7, 2003.
 36. **B.J. Behnke**, T. Hiria, M.D. Delp, P. McDonough, D.C. Poole, T.I. Musch. Muscle blood flow dysfunction in heart failure is fiber type dependent. *Texas ACSM*, 2004.
 37. **B.J. Behnke**, M.D. Delp, P. McDonough, D.C. Poole, T.I. Musch. Can a down-regulation of nitric oxide synthase explain reduced microvascular O₂ pressures in soleus muscles in

- chronic heart failure (CHF)? *FASEB* 432.9, 2004.
38. McDonough, P., **B.J. Behnke**, T.I. Musch, D.C. Poole. Recovery of microvascular PO₂ in rats with chronic heart failure. *Med. Sci. Sports Exerc.* 2004.
 39. Ramsey, M.W., **B.J. Behnke**, R. Prisby, M.D. Delp. Effects of aging on MAP, HR, and regional cardiac output during head up tilt in rats. *FASEB* 818.9, 2004.
 40. **Behnke, B.J.**, R. Prisby, L.A. Lesniewski, A.J. Donato, M.D. Delp. Physical Activity and Vascular Remodeling in Skeletal Muscle of Young and Aged Rats. *APS Intersociety Meeting*, 2004.
 41. Lesniewski, L.A., A.J. Donato, A. Papadopoulos¹, C.A. Ray, **B.J. Behnke**, M.D. Delp. Vasomotor Dysfunction and Altered Passive Mechanical Properties of Gastrocnemius Muscle Arterioles During the Development of Type 2 Diabetes in Zucker Diabetic Fatty Rats. *APS Intersociety Meeting*, 2004.
 42. **Behnke, B.J.**, M.K. Wilkerson, E. Wilson, M.D. Delp. Simulated Microgravity Diminishes Cerebral Artery Vasodilation Through a Nitric Oxide Mechanism. *IAA Humans in Space Symposium*, 2005.
 43. Padilla, D.J., P. McDonough, **B.J. Behnke**, Y. Kano, K.S. Hageman, T.I. Musch, D.C. Poole. Effects of Type II diabetes on capillary hemodynamics in skeletal muscle. *Med. Sci. Sports Exerc.* 2005.
 44. Padilla, D.J., P. McDonough, **B.J. Behnke**, Y. Kano, K.S. Hageman, T.I. Musch, and D.C. Poole. Microvascular oxygenation impairments in chronic heart failure (CHF) exacerbated by concurrent type II diabetes (Dia). *FASEB* 2005.
 45. Prisby, R.D., M.W. Ramsey, **B.J. Behnke**, M.D. Delp. Endothelium-dependent Vasodilation of the Principal Nutrient Artery and Femoral Bone Blood Flow is Attenuated in Aged Rats. *FASEB* 2005.
 46. **Behnke, B.J.**, R.D. Prisby, L.A. Lesniewski, A.J. Donato, M.D. Delp. Estimated Resting Wall Shear Stress in Feed Arteries of the Soleus and Gastrocnemius Muscles of Young and Aged Rats. *FASEB* 2005.
 47. **Behnke, B.J.**, R.D. Prisby, M.D. Delp. Effects of mechanical unloading on vasoconstriction dynamics in mesenteric resistance vessels. *FASEB* 2006.
 48. Prisby, R.D., **B.J. Behnke**, M.D. Delp. Vasoconstriction via voltage-gated CA₂⁺ channels is impaired in the femoral principal nutrient artery of aged rats. *FASEB* 2006.
 49. **Behnke, B.J.**, M.D. Delp. Effects of exercise training on skeletal muscle vascular geometry in young and old rats. *Integrative Biology*, Indianapolis 2006.
 50. **Behnke, B.J.**, M.D. Delp. Aging diminishes adrenergic vasoconstriction in adipose tissue resistance vessels. *FASEB* 586.7, 2007.
 51. **B.J. Behnke**, M.W. Ramsey, R.D. Prisby, M.D. Delp. Aging alters regional vascular conductance and arterial pressures during orthostatic stress. *FASEB* 587.11, 2007.
 52. **B.J. Behnke**, R.B. Armstrong, M.D. Delp. Adrenergic Regulation of Vasomotor Responses in Skeletal Muscle Composed of Different Fiber Types. *FASEB* 2009.
 53. **B.J. Behnke**, L.F. Ferreira, D.C. Poole. Skeletal Muscle Oxygen Uptake Dynamics during the Exercise Off-Transient. *FASEB* 2009.
 54. **B.J. Behnke**, M.D. Delp. Aging blunts the dynamics of vasodilation in isolated resistance vessels from the red gastrocnemius. *ACSM*, 2009.

Journals Reviewed:

Chest
Journal of Applied Physiology
Respiratory Physiology and Neurobiology
Experimental Physiology
Vascular Pharmacology
Journal of Physiology (London)
Journal of Vascular Research
American Journal of Physiology
Hypertension
European Journal of Applied Physiology
Circulation Research

Invited Presentations:

Kansas State College of Veterinary Medicine
Department of Anatomy & Physiology seminar series, March 2001.
“Oxygen exchange in skeletal muscle.”

Kansas State College of Veterinary Medicine
Department of Anatomy & Physiology seminar series, February 2002.
“Microvascular O₂ exchange: Implications for pulmonary gas exchange.”

Kansas State College of Veterinary Medicine
Department of Anatomy & Physiology seminar series, April 2003.
“Skeletal muscle O₂ exchange in health and Heart Failure.”

Texas A&M University
Department of Health & Kinesiology Seminar Series, May 2004.
“Skeletal muscle O₂ exchange in health and disease.”

International Society for Adaptive Medicine. VIII World Congress. Moscow, Russia 2006.
“Effects of hindlimb unloading of rats on vasoconstrictor responses and dynamics
in mesenteric arteries and veins.”

National Institute of Aging Workshop for Funded Young Investigators. San Antonio, TX. 2007.
“Vascular Structure and Function in Aging”

ACSM Annual Meeting Symposium. “VO₂max in Aging and Disease: Role of Skeletal Muscle”
May, 2008

Advances in Skeletal Muscle Biology in Health and Disease, 11th Biennial Conference. Gainesville,
FL. January, 2009.

Workshops:

GROW (*Girls Researching our World*) Workshop. “Electrical Signals from our bodies” Hands-on science projects for 6th and 7th grade girls to expose them to careers in science. Kansas State University, June 2001.

Research/Work Experience:

1997-Pres. *Research Skills*: small animal surgery; phosphorescence quenching; streptozotocin-induced diabetes; elastase-induced emphysema; equine treadmill exercise testing procedures; microhemodynamic analysis; electrical stimulation techniques; bulk blood flow (radiolabeled microspheres); myocardial infarction induced CHF, intravital microscopic techniques; histochemistry and skeletal muscle morphometry staining and analysis; equine arterial and venous blood sampling and analysis; microvessel cannulation; immunoblotting; RT-PCR.