

**CURRICULUM VITAE****Steven Wesley Copp****Date of Birth:** October 12, 1981 (Alexandria, VA, USA)**Current Work Address:** Kansas State University  
143C Justin Hall  
Manhattan, KS 66506  
E-mail: [scopp@ksu.edu](mailto:scopp@ksu.edu)**Education**

- May 2013 Ph.D. (Physiology, Kansas State University)  
Specialization: Cardiorespiratory exercise physiology  
Mentor: Dr. Timothy Musch  
Co-mentor: Dr. David Poole  
Dissertation title: *Enzymatic regulation of skeletal muscle oxygen transport: novel roles for neuronal nitric oxide synthase*
- May 2008 M.S. (Kinesiology, Kansas State University)  
Mentor: Dr. Timothy Much  
Co-mentor: Dr. David Poole
- May 2006 B.S. (Kinesiology, Kansas State University)

**Academic Appointments**

- 2020-present Associate Professor w/tenure – *Department of Kinesiology, Kansas State University*
- 2016-2020 Assistant Professor tenure-track – *Department of Kinesiology, Kansas State University*
- 2013-2015 Post-doctoral Fellow – *Department of Medicine, Pennsylvania State University*  
Mentor: Dr. Marc Kaufman
- 2011-2013 Graduate Research Assistant – *Cardiorespiratory Exercise Physiology Laboratory, Department of Anatomy and Physiology, Kansas State University*
- 2006-2013 Graduate Teaching Assistant - *Department of Kinesiology, Kansas State University*

**Professional Memberships**

- 2021-present American Autonomic Society
- 2007-present The American Physiological Society  
Environmental and Exercise Physiology Section  
Neural Control Autonomic Regulation Section
- 2015-2018 American Heart Association
- 2007-2013 The American College of Sports Medicine
- 2010-2013 The Microcirculatory Society

**Awards and Honors**

- Microcirculatory Society Zweifach Graduate Student Award, 2009
- Kansas State University Department of Anatomy and Physiology Clarenburg Research Fellow, 2009-2013
- Graduate Award for Academics, Kansas State University Alumni Association, 2010
- Microcirculatory Society August Krogh Young Investigator Award, 2011

American Heart Association Midwest Affiliate Predoctoral Fellowship, 2011-2013  
Kansas State University Research Foundation Doctoral Student Fellowship, 2011-2012 (award provided \$15,000 to financially support my research)  
Kansas State University College of Veterinary Medicine Graduate Executive Committee Travel Award, Spring 2012  
Kansas State University Graduate Student Council Travel Award, Fall 2012 and Spring 2013  
Dr. Charles E. Cornelius Graduate Student Travel Award, Spring 2013  
Department of Kinesiology Outstanding Graduate Student Award, 2013  
Environmental Exercise Physiology section (APS) Gatorade Postdoctoral Research Award, 2016  
Commerce Bank and W.T. Kemper Foundation Undergraduate Outstanding Teaching Award, 2019  
College of Health and Human Sciences Faculty Research Excellence Award, 2020  
Named Dean Barbara Stowe Endowed Associate Professor, 2023

### **Grant Funding**

#### ***Awarded - active***

NIH R01

*Title:* Signaling pathways regulating mechanoreflex sensitization cardiovascular disease

*Role:* PI, *Total costs:* \$2,134,426, *Status:* active, *Funding period:* 6/10/2022-5/31/2026

#### ***Awarded – completed***

NIH R01

*Title:* Exercise Pressor Reflex Dysfunction in Heart Failure: Mechanisms and Treatment

*Role:* PI, *Total costs:* \$1,195,327, *Status:* completed, *Funding period:* 8/1/2018-7/31/2023

American College of Sports Medicine Foundation Doctoral Student Research Grant.

*Title:* Vascular Dysfunction in Heart Failure: Effects of Fish Oil

*Role:* PI, *Total costs:* \$5,000, *Status:* Completed, *Effective dates:* 7/1/2011-6/31/2012

American Heart Association Midwest Affiliate Predoctoral Fellowship.

*Title:* Skeletal Muscle Vascular Function in Chronic Heart Failure: Effects of Fish Oil

*Role:* PI, *Total costs:* \$52,000, *Status:* Completed, *Effective dates:* 7/1/2011-6/30/2013

### **Published Original Research Manuscripts**

1. Herspring KF, Ferreira LF, **Copp SW**, Snyder BS, Poole DC & Musch TI. (2008). Effects of antioxidants on contracting spinotrapezius muscle microvascular oxygenation and blood flow in aged rats. *J Appl Physiol* 105: 1889-1896.
2. **Copp SW**, Ferreira LF, Herspring KF, Musch TI & Poole DC. (2009). The effects of aging on capillary hemodynamics in contracting rat spinotrapezius muscle. *Microvasc Res* B77: 113-199.
3. **Copp SW**, Davis RT, Poole DC & Musch TI. (2009). Reproducibility of endurance capacity and  $\dot{V}O_{2peak}$  in male Sprague-Dawley rats. *J Appl Physiol* 106: 1072-1078.
4. **Copp SW**, Ferreira LF, Herspring KF, Hirai DM, Snyder BS, Poole DC & Musch TI. (2009). The effects of antioxidants on microvascular oxygenation and blood flow in skeletal muscle of young rats. *Exp Physiol* 94: 961-971.

5. Hirai DM, **Copp SW**, Herspring KF, Ferreira LF, Poole DC & Musch TI. (2009). Aging impacts microvascular oxygen pressures during recovery from contractions in rat skeletal muscle. *Respir Physiol Neurobiol* 169: 315-322.
6. **Copp SW**, Hirai DM, Hageman KS, Poole DC & Musch TI. (2010) Nitric oxide synthase inhibition during treadmill exercise reveals fiber-type specific vascular control in the rat hindlimb. *Am J Physiol Regul Integr Comp Physiol* 298: R478-485.
7. **Copp SW**, Hirai DM, Schwagerl PJ, Musch TI & Poole DC. (2010). Effects of neuronal nitric oxide synthase inhibition on resting and exercising hindlimb muscle blood flow in the rat. *J Physiol* 588: 1321-1331.
8. Hirai DM, **Copp SW**, Ferreira LF, Musch TI & Poole DC. (2010). Nitric oxide bioavailability modulates the dynamics of microvascular oxygen exchange during recovery from contractions. *Acta Physiol* 200: 159-169.
9. **Copp SW**, Hageman KS, Behnke BJ, Poole DC & Musch TI. (2010). Effects of Type II diabetes on exercising skeletal muscle blood flow in the rat. *J Appl Physiol* 109: 1347-1353.
10. **Copp SW**, Hirai DM, Ferreira LF, Poole DC & Musch TI. (2010). Progressive chronic heart failure slows recovery of microvascular oxygen pressures following contractions in rat spinotrapezius muscle. *Am J Physiol Heart Circ Physiol* 299: H1755-H1761.
11. **Copp SW**, Hirai DM, Musch TI & Poole DC. (2010). Critical speed in the rat: implications for hindlimb muscle blood flow and fibre recruitment. *J Physiol* 588: 5077-5087.
12. Hirai DM, **Copp SW**, Schwagerl PJ, Haub MD, Poole DC & Musch TI. (2011). Acute antioxidant supplementation and skeletal muscle vascular conductance in aged rats: role of exercise and fiber type. *Am J Heart Circ Physiol* 300: H1536-H1544.
13. Hirai DM, **Copp SW**, Schwagerl PJ, Haub MD, Musch TI & Poole DC. (2011) Acute effects of hydrogen peroxide on skeletal muscle microvascular oxygenation from rest to contractions. *J Appl Physiol* 110: 1290-1298.
14. **Copp SW**, Hirai DM, Ferguson SK, Musch TI & Poole DC. (2011). Role of neuronal nitric oxide synthase in modulating microvascular and contractile function in rat skeletal muscle. *Microcirculation* 18: 501-511.
15. Hirai DM, **Copp SW**, Hageman KS, Poole DC & Musch TI. (2011). Aging alters the contribution of nitric oxide to regional muscle hemodynamic control at rest and during exercise in rats. *J Appl Physiol* 111: 989-998.
16. **Copp SW**, Hirai DM, Ferguson SK, Holdsworth CT, Musch TI & Poole DC. (2012). The effects of chronic heart failure on neuronal nitric oxide synthase-mediated control of microvascular O<sub>2</sub> pressure in contracting rat skeletal muscle. *J Physiol* 590(15): 3585-3596.

17. Hirai DM, **Copp SW**, Ferguson SK, Holdsworth CT, McCullough DJ, Behnke BJ, Musch TI & Poole DC. (2012). Exercise training and muscle microvascular oxygenation: functional role of nitric oxide bioavailability. *J Appl Physiol* 113(4): 557-565.
18. Hirai DM, **Copp SW**, Holdsworth CT, Ferguson SK, Musch TI & Poole DC. (2012). Effects of neuronal nitric oxide synthase inhibition on microvascular and contractile function in skeletal muscle of aged rats. *Am J Physiol Heart Circ Physiol* 303(8): H1076-1084.
19. **Copp SW**, Schwagerl PJ, Hirai DM, Poole DC & Musch TI. (2012). Acute ascorbic acid and hindlimb muscle blood flow distribution in old rats: rest and exercise. *Can J Physiol Pharmacol* 90(11): 1498-505.
20. Ferguson SK, Hirai DM, **Copp SW**, Holdsworth CT, Allen JD, Jones AM, Musch TI & Poole DC. (2013). Impact of dietary nitrate supplementation via beetroot juice on exercising muscle vascular control in rats. *J Physiol* 591:547-57.
21. **Copp SW**, Inagaki T, White MJ, Hirai DM, Ferguson SK, Holdsworth CT, Sims GE, Poole DC & Musch TI. (2013). (-)-Epicatechin administration and exercising skeletal muscle vascular control and microvascular oxygenation in healthy rats. *Am J Physiol Heart Circ Physiol* 304(2): H206-14.
22. Hirai DM, **Copp SW**, Ferguson SK, Holdsworth CT, Musch TI & Poole DC. (2013). Superfusion of the NO donor sodium nitroprusside: potential for skeletal muscle vascular and metabolic dysfunction. *Microvascular Res* 85: 104-11.
23. **Copp SW**, Hirai DM, Sims GE, Musch TI, Poole DC & Kenney MJ. (2013). Neuronal nitric oxide synthase inhibition and regional sympathetic nerve discharge: implications for peripheral vascular control. *Resp Phys Neurobiol* 186: 285-289.
24. **Copp SW**, Holdsworth CT, Ferguson SK, Hirai DM, Poole DC, & Musch TI. (2013). Muscle fibre-type dependence of neuronal nitric oxide synthase-mediated vascular control in the rat during high-speed treadmill running. *J Physiol* 591: 2885-2896.
25. Ferguson SK, Hirai DM, **Copp SW**, Holdsworth CT, Allen JD, Jones AM, Musch TI, & Poole DC. (2013). Effects of nitrate supplementation via beetroot juice on contracting skeletal muscle microvascular oxygen pressure. *Resp Phys Neurobiol* 187: 250-255.
26. Holdsworth CT, **Copp SW**, Hirai DM, Ferguson SK, Sims GE, Hageman KS, Stebbins CL, Poole DC & Musch TI. (2014). Dietary fish oil and exercising skeletal muscle vascular control in chronic heart failure rats: role of NO-bioavailability. *Appl Physiol Nutr Metab* 39(3): 299-307.
27. Hirai DM, **Copp SW**, Holdsworth CT, Ferguson SK, McCullough DJ, Behnke BJ, Musch TI & Poole DC. (2014). Skeletal muscle microvascular oxygenation dynamics in heart failure: exercise training and nitric oxide-mediated function. *Am J Physiol Heart Circ Physiol* 306(5): H690-8.
28. Ferguson SK, Hirai DM, **Copp SW**, Holdsworth CT, Allen JD, Jones AM, Musch TI & Poole DC. (2014). Dose dependent effects of nitrate supplementation on cardiovascular control and microvascular oxygenation dynamics in healthy rats. *Nitric Oxide* 39: 51-8.

29. Sims GE, **Copp SW**, Hirai DM, Ferguson SK, Holdworth CT, Poole DC & Musch TI. (2014). Effects of pentoxifylline on exercising skeletal muscle vascular control in rats with chronic heart failure. *J Cardiology Therapeutics* 2: 32-44.
30. Stone AJ, **Copp SW**, & Kaufman MP. (2014). The role of prostaglandins in spinal transmission of the exercise pressor reflex in decerebrate rats. *Neuroscience*. 277C: 26-35.
31. **Copp SW**, Stone AJ, Yamauchi K & Kaufman MP. (2014). Effects of peripheral and spinal  $\kappa$ -opioid receptor stimulation on the exercise pressor reflex in decerebrate rats. *Am J Physiol Regul Integr Comp Physiol*. 307: R281-R289.
32. Holdsworth CT, **Copp SW**, Ferguson SK, Sims GE, Poole DC & Musch TI. (2015) Acute blockade of ATP-sensitive  $K^+$  channels impairs skeletal muscle vascular control in rats during treadmill exercise. *Am J Physiol Heart Circ Physiol* 308: H1434-42.
33. Stone AJ, **Copp SW**, McCord JL & Kaufman MP. (2015). Femoral artery ligation increases the responses of thin fiber muscle afferents to contraction. *J Neurophysiol* 113: 3961-6.
34. **Copp SW**, Stone AJ & Kaufman MP. (2015). Role played by interleukin-6 in evoking the exercise pressor reflex in decerebrate rats: effect of femoral artery ligation. *Am J Physiol Heart Circ Physiol* 309: H166-173.
35. Stone AJ, **Copp SW** & Kaufman MP. (2015). Role played by NaV 1.7 channels on thin fiber muscle afferents in transmitting the exercise pressor reflex. *Am J Physiol Regul Integr Comp Physiol* 309: 1301-8.
36. Stone AJ, **Copp SW**, Kim JS & Kaufman MP. (2015). Combined, but not individual, blockade of ASIC3, P2X and EP4 attenuates the exercise pressor reflex in rat freely perfused hindlimb muscles. *J Appl Physiol* 119: 1330-6.
37. **Copp SW**, Kim JS, Ruiz-Velasco V & Kaufman MP. (2016). The mechano-gated channel inhibitor GsMTx4 reduces the exercise pressor reflex in decerebrate rats. *J Physiol* 594: 641-55.
38. **Copp SW**, Kim JS, Ruiz-Velasco V & Kaufman MP. (2016). The mechano-gated channel inhibitor GsMTx4 reduces the exercise pressor reflex in rats with ligated femoral arteries. *Am J Physiol Heart Circ Physiol* 310: H1233-41.
39. Harms JE, **Copp SW** & Kaufman MP. (2016). Low-frequency stimulation of group III and IV hind limb afferents evokes reflex pressor responses in decerebrate rats. *Physiological Reports* Oct. 4(20). pii:e13011.
40. Gittemeier EM, Ericson T, Ghosh P, **Copp SW**, Opoku-Acheampong AB & Behnke BJ. (2017). Effects of aging and exercise training on the dynamics of vasoconstriction in skeletal muscle resistance vessels. *Eur J Appl Physiol* 117: 397-407.
41. Smith JR, Didier KD, Hammer SM, Alexander AM, Kurti SP, **Copp SW**, Barstow TJ & Harms CA. (2017). Effect of cyclooxygenase inhibition on the inspiratory muscle metaboreflex-induced cardiovascular consequences in men. *J Appl Physiol* 123: 197-204.

42. Rollins KS, Smith JR, Esau PJ, Kempf EA, Hopkins TD & **Copp SW**. (2017). Bradykinin does not acutely sensitize the reflex pressor response during hindlimb skeletal muscle stretch in decerebrate rats. *Am J Physiol Regul Integr Comp Physiol* 313: R463-472.
43. Esau PJ, Gittemeier EM, Opoku-Acheampong AB, Rollins KS, Baumfalk DR, Poole DC, Musch TI, Behnke BJ & **Copp SW**. (2017) Prostate cancer reduces endurance exercise capacity in association with reductions in cardiac and skeletal muscle mass in the rat. *Am J Cancer Res* 7(12): 2566-2576.
44. Kempf EA, Rollins KS, Hopkins TD, Butens AL, Santin JM, Smith JR & **Copp SW**. (2018) Chronic femoral artery ligation exaggerates the pressor and sympathetic nerve response during dynamic skeletal muscle stretch in decerebrate rats. *Am J Physiol Heart Circ Physiol* 314(2): H246-254.
45. Hirai DM, **Copp SW**, Ferguson SK, Holdsworth CT, Hageman KS, Poole DC, & Musch TI. (2018) Neuronal nitric oxide synthase regulation of skeletal muscle functional hyperemia: exercise training and moderate compensated heart failure. *Nitric Oxide* 74:1-9.
46. Frye JN, Sutterfield SL, Caldwell JT, Behnke BJ, **Copp SW**, Banister HR, and Ade CJ. (2018) Vascular and autonomic changes in adult cancer patients receiving anti-cancer chemotherapy. *J Appl Physiol* 125: 198-204.
47. Sanderson BC, Rollins KS, Hopkins TD, Butenas AL, Felice KP, Ade CJ, & **Copp SW**. (2019) GsMTx4 reduces the reflex pressor response during dynamic hindlimb skeletal muscle stretch in decerebrate rats. *Physiol Rep* (1):e13974.
48. Caldwell JT, Sutterfield SL, Post HK, Craig JC, Baumfalk DR, **Copp SW**, & Ade CJ. (2018) Impact of acute dietary nitrate supplementation during exercise in hypertensive women. *Med Sci Sports Exerc* 51: 1014-1021.
49. Baumfalk DR, Opoku-Acheampong AB, Caldwell JT, Ade CJ, **Copp SW**, Musch TI & Behnke BJ. (2018). Effects of prostate cancer and exercise training on left ventricular function and cardiac and skeletal muscle mass. *J Appl Physiol* 126: 668-680.
50. Rollins KS, Hopkins TD, Butenas AL, Felice KP, Ade CJ, & **Copp SW**. (2019). Cyclooxygenase inhibition does not impact the pressor response during static or dynamic mechanoreflex activation in healthy decerebrate rats. *Am J Physiol Regul Integr Comp Physiol* 317: R369-378.
51. Butenas AB, Hopkins TD, Butenas AL, Felice KP, & **Copp SW** (2019). Investigation of the mechanisms of cyclooxygenase-mediated mechanoreflex exaggeration in a rat model of simulated peripheral artery disease. *Am J Physiol Heart Circ Physiol* 317: H1050-H1061.
52. Caldwell JT, Sutterfield SL, Post HK, Lovoy GM, Banister HR, Turpin VG, Colburn TD, Hammond SS, **Copp SW** & Ade CJ (2020). Impact of high sodium intake on blood pressure and functional sympatholysis during rhythmic handgrip exercise. *Appl Physiol Nutr Metab* 45(6): 613-620.
53. Poole DC, Copp SW, Colburn TD, Craig JC, Allen DL, Sturek M, O'Leary DS, Zucker IH & Musch TI (2020). Guidelines for animal exercise and training protocols for cardiovascular studies. *Am J Physiol Heart Circ Physiol* 318(5): H1100-H1138.

54. Rollins KS, Butenas ALE, felice KP, Matney JE, Williams AC, Kleweno TE & Copp SW (2020). Thromboxane A<sub>2</sub> receptors mediate chronic mechanoreflex sensitization in a rat model of simulated peripheral artery disease. *Am J Physiol Heart Circ Physiol* 319(2): H320-330.
56. Butenas ALE, Smith JR, Copp SW, Hageman KS, Poole DC & Musch TI (2020). Type II diabetes accentuates diaphragm blood flow increases during submaximal exercise in the rat. *Respir Physiol Neurobiol* 281: 103518.
56. Butenas ALE, Rollins KS, Matney JE, Williams AC, Kleweno TE, Parr SK, Hammond ST, Ade CJ, Hageman KS, Much TI & **Copp SW** (2020). No effect of endoperoxide 4 or thromboxane A<sub>2</sub> receptor blockade on static mechanoreflex activation in rats with heart failure. *Exp Physiol* 105: 1840-1854.
57. Butenas ALE, Colburn TD, Baumfalk DR, Ade CJ, Hageman KS, Copp SW, Poole DC, & Much TI (2021). Angiotensin converting enzyme inhibition improves cerebrovascular control during exercise in male rats with heart failure. *Respir Physiol Neurobiol* 286: 103613.
58. Baumfalk DR, Opoku-Acheampong AB, Caldwell JT, Butenas ALE, Horn AG, Kunkel ON, **Copp SW**, Ade CJ, Much TI, Behnke BJ (2021). Effects of high-intensity training on prostate cancer-induced cardiac atrophy. *Am J Transl Res* 13(1): 197-209.
59. Butenas ALE, Rollins KS, Williams AC, Parr SK, Hammond ST, Ade CJ, Hageman KS, Much TI & **Copp SW** (2021). Exaggerated sympathetic and cardiovascular responses to dynamic mechanoreflex activation in rats with heart failure: Role of endoperoxide 4 and thromboxane A<sub>2</sub> receptors. *Auton Neurosci* 232: 102784.
60. Smith JR, Hirai DM, **Copp SW**, Ferguson SK, Holdsworth CT, Hageman KS, Poole DC & Much TI (2021). Exercise training decreases intercostal and transversus abdominis muscle blood flows in heart failure rats during submaximal exercise. *Respir Physiol Neurobiol* 292: 103710.
61. Rollins KS, Butenas ALE, Williams AC & **Copp SW** (2021). Sensory neuron inositol 1,4,5-trisphosphate receptors contribute to chronic mechanoreflex sensitization in rats with simulated peripheral artery disease. *Am J Physiol Regul Integr Comp Physiol* 321(5): 768-780.
62. Butenas ALE, Rollins KS, Williams AC, Parr SK, Hammond ST, Ade CJ, Hageman KS, Musch TI & **Copp SW** (2021). Thromboxane A<sub>2</sub> receptors contribute to the exaggerated exercise pressor reflex in male rats with heart failure. *Physiol Rep* 9(18): e15052.
63. Butenas ALE, Rollins SK, Hammond ST, Ade CJ, Hageman KS, Musch TI & **Copp SW** (2022). Novel mechanosensory role for acid sensing ion channel subtype 1a in evoking the exercise pressor reflex in rats with heart failure. *J Physiol* 600(9): 2105-2125.
64. Poole DC, **Copp SW**, Musch TI (2023). A straightforward graphical/statistical approach to help substantiate cheating on multiple-choice examinations. *Adv Physiol Educ* 47(1): 37-41.

64. Butenas ALE, Rollins KS, Williams AC, & **Copp SW** (2023). Bradykinin 2 receptors contribute to the exaggerated exercise pressor reflex in a rat model of simulated peripheral artery disease. *Am J Physiol Regul Integr Comp Physiol* 324: R183-R195.
65. Butenas ALE, **Copp SW**, Hageman KS, Poole DC & Musch TI (2023). Effects of co-morbid type II diabetes mellitus and heart failure on rat hindlimb and respiratory muscle blood flow during treadmill exercise. *J Appl Physiol* 134(4): 846-857.
66. Butenas ALE, Ishizawa R, Rollins KS, Mizuno M & **Copp SW** (2023). Sex dependent attenuating effects of capsaicin administration on the mechanoreflex in healthy rats. *Am J Physiol Heart Circ Physiol* 325(2): 372-384.

#### **Published Review Articles**

1. Poole DC, **Copp SW**, Hirai DM & Musch TI. (2011). Dynamics of muscle microcirculatory and blood-myocyte O<sub>2</sub> flux during contractions. *Acta Physiol* 202: 293-310.
2. Poole DC, Hirai DM, **Copp SW** & Musch TI. (2012). Muscle oxygen transport and utilization in heart failure: implications for exercise (in)tolerance. *Am J Physiol Heart Circ Physiol* 302: H1050-H1063.
3. Poole DC, **Copp SW**, Ferguson SK & Musch TI. (2013). Skeletal muscle capillary function: contemporary observations and novel hypotheses. *Exp Physiol* 98(12): 1645-1658.

#### **Letters/comments**

1. Poole DC, **Copp SW** & Hirai DM. (2009). Comments on point: counterpoint: the kinetics of oxygen uptake during muscular exercise do/do not manifest time-delayed phase. Experimental evidence does support a model of oxygen uptake kinetics with time-delayed phases. *J Appl Physiol* 107: 1670-1671.
2. **Copp SW**, Poole DC & Musch TI. (2010). Valid and reproducible endurance protocols underlie data interpretation, integration, and application. *J Appl Physiol* 108: 224-225.
4. **Copp SW** & Ade CJ. (2015). Longitudinal capillary recruitment and the blood flow-oxygen uptake relationship. *J Physiol* 000.0 pp 1-5.
5. Smith JR & **Copp SW**. (2017). Commentary on viewpoint: Could small-diameter muscle afferents be responsible for the ergogenic effect of limb ischemic preconditioning? *J Appl Physiol* 122: 721-725.

#### **Book Chapter**

1. Poole DC, **Copp SW**, Hirai DM & Musch TI. Oxygen Partial Pressure (PO<sub>2</sub>) in Heavy Exercise. Encyclopedia of Exercise Medicine in Health and Disease. Mooren FC (Ed.). Springer Reference. 2012.

#### **Conference Presentations (oral/slide format)**

Experimental Biology. San Diego, CA. April 2008. Microcirculatory Society's Young Investigator Symposium. "The effects of aging on microvascular O<sub>2</sub> delivery in contracting skeletal muscle"



ACSM National Meeting. Indianapolis, IN. May 2008. *“The effects of aging on capillary hemodynamics in skeletal muscle”*

ACSM National Meeting. Seattle, WA. May 2009. Featured Science Session. Fatigue Mechanisms Determining Exercise Performance. *“Microvascular oxygenation during contractions in aged muscle: implications for fatigue”*

ACSM National Meeting. Baltimore, MD. June 2010. *“Neuronal NOS inhibition modulates resting but not exercising blood flow in rat hindlimb muscles”*

ACSM National Meeting. Denver, CO. June 2011. *“Skeletal muscle vascular and contractile function: effects of nNOS inhibition”*

ACSM Mid-Atlantic Regional Conference Meeting. Harrisburg, PA. October 2014. *“Opioid-receptor stimulation and the exercise pressor reflex in peripheral arterial disease”*

Kansas Physical Therapy Association Fall Conference. Manhattan, KS. October 2018. *“Cerebrovascular Accident: Anatomy and Pathophysiology”*

### **Non-conference presentations**

Kansas State University College of Veterinary Medicine. November 2008. Department of Anatomy and Physiology Seminar Series. *“Skeletal muscle blood flow: upregulation and dysregulation”*

Kansas State University College of Veterinary Medicine. September 2009. Department of Anatomy and Physiology Seminar Series. *“Nitric oxide and vascular control: which part of NO don't you understand?”*

Kansas State University College of Veterinary Medicine. October 2012. Department of Anatomy and Physiology Seminar Series. *“Calming the perfect storm of O<sub>2</sub> transport deficits in heart failure”*

Kansas State University College of Veterinary Medicine. April 2013. Dissertation defense. *“Enzymatic regulation of skeletal muscle oxygen transport: novel roles for neuronal nitric oxide synthase”*

University of North Carolina Greensboro. March 2019. Department of Biology Seminar Series. *“Novel insights into the muscle mechanoreflex in health and cardiovascular disease”*

Florida State University. February 2021. Department of Nutrition, Food & Exercise Science Seminar Series. *“Mechanisms of mechanoreflex sensitization in cardiovascular disease”*

University of Utah. March 2023. Utah Vascular Research Laboratory Colloquium Series. *“Novel mechanisms of mechanoreflex sensitization in cardiovascular disease”*

### **Teaching Experience (all at Kansas State University)**

#### ***Undergraduate level courses taught***

KIN 161 Fitness and Conditioning (2006-2008)

KIN 163 Weight Training (2006-2008)

KIN 220 Biobehavioral Bases of Exercise Laboratory (2006-2011)

KIN 336 Physiology of Exercise Laboratory (2006-2011)  
KIN 625 Exercise Testing and Prescription Laboratory (2008-2011)  
KIN 635 Nutrition and Exercise (2011-2012)  
KIN 611 Autonomic Neurophysiology (2014-present)  
KIN 335 Physiology of Exercise (2017-present)

***Graduate level courses taught***

KIN Research Methods in Kinesiology (2013, 2017-present)

***Students supervised/mentored***

**Undergraduate level**

Tyler Hopkins, Alec Butenas, Evan Kempf, Blake Overmiller, Riann Heft, Kenndey Felice, Jacob Matney, Talyn Klewno, Joe Flax, Raimi Carroll, Ashley Baranczuk, Josie Larson

**Masters level (\* denotes MS thesis committee chair)**

Peter Esau	2016*
Emmanual Garcia	2016
Elizabeth Gittmier	2016
Mackenzie Reynolds	2016
Korynne Rollins	2016-2018*
Jacob Frye	2017
Evan Kempf	2017*
Bailey Sanderson	2017-2018*
Tyler Hopkins	2017-2018
Dryden Baumfalk	2017-2018
Joe Pyle	2018-2019
Kennedy Felice	2018-2019*
Auni Williams	2019-2021*
Joe Flax	2022

**Doctoral level (\* denotes PhD dissertation committee chair)**

Jacob Caldwell	2017-2018
Korynne Rollins	2018-2021*
Alec Butenas	2018-2023*
Prabhu Joshi	2022-present

***Awards/grants received by supervised students***

**Raimi Carroll**

KSU Office of Undergraduate Research and Creative Inquiry Research Grant (\$500), 2022

**Ashley Baranczuk**

KSU Office of Undergraduate Research and Creative Inquiry Research Grant (\$500), 2023

**Alec Butenas**

College of Human Ecology Undergraduate Research Poster Competition winner, 2017  
KSU Office of Undergraduate Research and Creative Inquiry Research Grant (\$1,000), 2017  
Kansas Academy of Science Student Research Grant (\$1,500), 2020  
Environmental & Exercise Section (APS) Pre-doctoral Award, 2020

Environmental & Exercise Section (APS) Early Career research Award, 2021  
American College of Sports Medicine Doctoral Student Research Grant (\$5,000), 2021  
Neural Control Autonomic Regulation Section (APS) Outstanding Doctoral Student Researcher Award, 2022  
Department of Kinesiology Outstanding Doctoral Student Award, 2022

### **Korynne Rollins**

Department of Kinesiology Outstanding MS Student Award, 2018  
Department of Kinesiology Outstanding Graduate Teaching Assistant Award, 2020  
APS Caroline Tum Suden/Frances Hellebrandt Professional Opportunity Award, 2020  
NIH F31HL154779 NRSA Pre-doctoral Fellowship (~\$66,000 total costs)

### **Professional Service**

#### ***National Institutes of Health***

NHLBI Ad hoc reviewer  
Integrative Vascular Physiology and Pathology study section (June and Oct. 2022)  
Clinical Cardiovascular and Hematological Sciences study section (Feb. 2023)  
NHLBI regular reviewer  
Integrative Vascular Physiology and Pathology study section (July 2023-June 2027)

#### ***American Physiological Society***

Trainee Advisory Committee member (2016-2018)  
Environmental and Exercise Physiology trainee rep on section steering committee (2016-2018)

#### ***Journals Served as Peer-reviewer***

European Journal of Applied Physiology  
Journal of Applied Physiology  
American Journal of Physiology Regulatory, Integrative, and Comparative Physiology  
American Journal of Physiology Heart and Circulatory Physiology  
Experimental Physiology  
Journal of Physiology  
Journal of Visualized Experiments  
Canadian Journal of Physiology and Pharmacology  
Medicine & Science in Sports & Exercise  
Autonomic Neuroscience: Basic & Clinical

### **University/Department Service (\*denotes chair)**

Assistant professor search committee	2016
Senior administrative assistant search committee	2016
College course fee proposal committee	2016
Department scholarship committee*	2016-present
College scholarship committee	2017-present
Academic advisor search committee	2017
Department events committee	2017-2018
Department Exercise is Medicine on Campus committee	2017-2018
College of Human Ecology core curriculum working group	2018-2019
Kinesiology Applied Exercise Instructor search committee	2018-2019
Department undergraduate curriculum committee	2018-2019, 2020-2021

Department marketing committee	2019-2020
Integrative Physiology Instructor search committee*	2020
College Faculty Advisory Council	2021-2023
College Committee on Planning	2021-present
College Research Methods Course Committee	2021
Department Graduate Council	2021-2023
Integrative/exercise physiology faculty search committee*	2022-2023

### **Abstracts/Conference Proceedings**

1. **Copp SW**, Ferreira LF, Herspring KF, Musch TI & Poole DC. (2008). The effects of aging on capillary hemodynamics in contracting rat spinotrapezius muscle. *Med. Sci. Sports Exerc* 40 (5), S70.
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