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## EDUCATION

<b>Doctor of Philosophy in Human Performance Minor in Human Physiology (IU Medical Sciences Program)</b> School of Public Health-Bloomington Indiana University, Bloomington, IN	2013 – 2017
<b>Master of Science in Exercise Physiology</b> School of Public Health-Bloomington Indiana University, Bloomington, IN	2011 – 2013
<b>Bachelor of Science in Physiology of Exercise</b> College of Health Science and Professions Ohio University, Athens, OH	2007 – 2011



















## POSITIONS















<b>Assistant Professor</b> Department of Kinesiology College of Education Michigan State University, East Lansing, MI	January 2024
<b>Assistant Professor &amp; Associate Consultant I</b> Departments of Anesthesiology and Perioperative Medicine & Physiology and Biomedical Engineering Mayo Clinic, Rochester, MN	2023
<b>Research Associate</b> <b>Senior Research Fellow</b> <b>Postdoctoral Fellow</b> Mentor: Michael J. Joyner, M.D. Department of Anesthesiology & Perioperative Medicine Human Integrative Physiology Laboratory Mayo Clinic, Rochester, MN	2022 – 2023 2021 – 2022 2017 – 2021
<b>Graduate Associate Instructor</b> Mentor: Robert F. Chapman, Ph.D. Department of Kinesiology School of Public Health-Bloomington Indiana University, Bloomington, IN	2013 – 2017
<b>Graduate Student</b> Mentor: Janet P. Wallace, Ph.D. Department of Kinesiology School of Public Health-Bloomington Indiana University, Bloomington, IN	2011 – 2013
<b>Graduate Assistant (Kinesiology Department)</b> Supervisor: Jian Liu School of Public Health Library School of Public Health-Bloomington Indiana University, Bloomington, IN	2011 – 2013










<b>Fitness Personnel Manager</b> Division of Student Affairs, Fitness Programs Charles J. Ping Student Recreation Center Ohio University, Athens, OH	2010 – 2011
<b>Ping Center Building Supervisor</b> Division of Student Affairs, Ping Center Charles J. Ping Student Recreation Center Ohio University, Athens, OH	2009 - 2011
<b>Fitness Assistant</b> Division of Student Affairs, Fitness Programs Charles J. Ping Student Recreation Center Ohio University, Athens, OH	2008 – 2011
<b>Undergraduate Research Assistant</b> Mentor: Steven M. Patterson, Ph.D. Department of Psychology Physiological Psychology Laboratory Ohio University, Athens, Ohio	2009 – 2011
<b>Undergraduate Research Assistant</b> Mentor: Jason B. White, Ph.D. College of Health Science and Professions Exercise Physiology Laboratory Ohio University, Athens, Ohio	2007 – 2008

## AWARDS AND HONORS









2022	NIH(NHLBI) Division of Loan Repayment Renewal, Clinical Research Award (\$53,472)
2021	Mayo Clinic Research Committee, Mayo Clinic Team Science Award, Expanded Access Program for Convalescent Plasma Team Member
2020	NIH(NHLBI) Division of Loan Repayment, Clinical Research Award (\$77,747)
2020	ACSM Foundation: <i>Dr. Jack Wilmore Legacy Travel Award</i> (\$1,000)
2020	European Journal of Sport Science: <a href="#">EJSS 20<sup>th</sup> Anniversary Competition</a> : The Future of Sport Science Paper – 1 <sup>st</sup> Place (€1,000)
2016	Indiana University, School of Public Health: <i>John R. Endwright Scholarship</i> (\$1,500)
2016	Indiana University, School of Public Health: <i>Student Travel Award</i> (\$600)
2014	Indiana University, School of Public Health: <i>Student Travel Award</i> (\$400)
2011	Ohio University, Campus Recreation: <i>Douglas Franklin Student Leadership Award</i>

39. R Tan, MN Baranauskas, ST Karl, J Ortiz de Zevallos, R Shei, HL Paris, **CC Wiggins**, SJ Bailey. Effects of dietary nitrate supplementation on muscular power output: influence of supplementation strategy and population. *Nitric Oxide*. 2023. 136-137: 33–47.  
 |  | DOI: [10.1016/j.niox.2023.05.003](https://doi.org/10.1016/j.niox.2023.05.003)
38. AH Ramsook, PB Dominelli, SA Angus, JW Senefeld, **CC Wiggins**, MJ Joyner. The oxygen transport cascade and exercise: lessons learned from comparative physiology. *Comparative Biochemistry and Physiology - Part A: Molecular & Integrative Physiology*. 2023. 282: 111442.  
 |  | DOI: [10.1016/j.cbpa.2023.111442](https://doi.org/10.1016/j.cbpa.2023.111442)
37. WW Pruter, SA Klassen, PB Dominelli, **CC Wiggins**, JW Senefeld, TK Roy, MJ Joyner, SE Baker. Attenuated cardiac autonomic function in humans with high affinity hemoglobin and compensatory polycythemia. *American Journal of Physiology-Regulatory, Integrative and Comparative Physiology*. 2023. 324(5):R625-R634.  
 |  | DOI: [10.1152/ajpregu.00113.2022](https://doi.org/10.1152/ajpregu.00113.2022)
36. MJ Joyner, **CC Wiggins**, SE Baker, SA Klassen, JW Senefeld. Exercise and experiments of nature. *Comprehensive Physiology*. 2023. 13(3): 4879-4907.  
 |  | DOI: [10.1002/cphy.c220027](https://doi.org/10.1002/cphy.c220027)
35. DM Veith, MB Linde, **CC Wiggins**, KD Zhao, KL Garlanger. High-intensity interval training in individuals with spinal cord injury: an updated narrative review. *Topics in Spinal Cord Injury and Rehabilitation*. 2023. **In Press**.  
 |  | DOI: [10.46292/sci22-00045](https://doi.org/10.46292/sci22-00045)
34. JJ Jeltema\*, EK Gorman\*, EA Ovrom, JG Ripoll, PB Dominelli, MJ Joyner, BT Welch, JW Senefeld\*, **CC Wiggins\***. Greater Central Airway Luminal Area in People with COVID-19: A Case-Control Series. *Scientific Reports*. 2022. 12(1):17970.  
 |  | DOI: [10.1038/s41598-022-22005-6](https://doi.org/10.1038/s41598-022-22005-6)
33. KL Webb\*, AN Elshaer\*, PB Dominelli, JW Senefeld, SM Hammer, SE Baker, JRA Shepherd, TK Roy, MJ Joyner, **CC Wiggins**. Muscle oxygenation during normoxic and hypoxic cycling exercise in humans with high affinity haemoglobin. *Experimental Physiology*. 2022. 107(8):854-863.  
 |  | DOI: [10.1113/EP090308](https://doi.org/10.1113/EP090308)
32. VA Convertino, RW Techentin, RJ Poole, AC Dacy, AN Carlson, S Cardin, CR Haider, DR Holmes, **CC Wiggins**, MJ Joyner, TB Curry, OT Inan. AI-enabled advanced development for assessing low circulating blood volume for emergency medical care: Comparison of compensatory reserve machine-learning algorithms. *Biosensors*. 2022. 22(7): 2642.  
 |  | DOI: [10.3390/s22072642](https://doi.org/10.3390/s22072642)
31. KL Webb, PB Dominelli, SE Baker, SA Klassen, MJ Joyner, JW Senefeld\*, **CC Wiggins\***. Influence of high hemoglobin-oxygen affinity on humans during hypoxia. *Frontiers in Physiology*. 2022. 12: 763933.  
 |  | DOI: [10.3389/fphys.2021.763933](https://doi.org/10.3389/fphys.2021.763933)

30. T Ma\*, **CC Wiggins\***, BM Kornatowski, RS Hailat, AC Clayburn, PW Johnson, JW Senefeld, SA Klassen, C Li, MJ Joyner, NS Paneth. The role of disease severity and demographics in the clinical course of COVID-19 patients treated with convalescent plasma. *Frontiers in Medicine*. 2022. 8:707895.  
 |  | DOI: [10.3389/fmed.2021.707895](https://doi.org/10.3389/fmed.2021.707895)
29. JW Senefeld, PW Johnson, KL Kunze, EM Bloch, N van Helmond, MA Golafshar, SA. Klassen, AM Klompas, MA Sexton, JC Diaz Soto, BJ Grossman, AAR Tobian, R G, **CC Wiggins**, KA Bruno, CM van Buskirk, JR Stubbs, JL Winters, A Casadevall, NS Paneth, BH Shaz, MM Petersen, BS Sachais, MR Buras, MA Wieczorek, B Russoniello, LJ Dumont, SE Baker, RR Vassallo, JRA Shepherd, PP Young, NC Verdun, P Marks, NR Haley, RF Rea, L Katz, V Herasevich, DA Waxman, ER Whelan, A Bergman, AJ Clayburn, MK Grabowski, KF Larson, JG Ripoll, KJ Andersen, MNP Vogt, JJ Dennis, RJ Regimbal, PR Bauer, JE Blair, ZA Buchholtz, MC Pletsch, K Wright, JT Greenshields, MJ Joyner, RS Wright, RE Carter, D Fairweather. Access to and safety of COVID-19 convalescent plasma in the United States Expanded Access Program: a national registry study. *PLOS Medicine*. 2021. 18(12): e1003872.  
 |  | DOI: [10.1371/journal.pmed.1003872](https://doi.org/10.1371/journal.pmed.1003872)
28. KL Kunze, PW Johnson, N van Helmond, JW Senefeld, MM Petersen, SA Klassen, **CC Wiggins**, AM Klompas, KA Bruno, JR Mills, ES Theel, MR Buras, MA Golafshar, MA Sexton, JC Diaz Soto, SE Baker, JRA Shepherd, NC Verdun, P Marks, NS Paneth, D Fairweather, R. Scott Wright, A Casadevall, RE Carter, MJ Joyner, and the US EAP COVID-19 Plasma Consortium. Mortality in individuals treated with COVID-19 convalescent plasma varies with the geographic provenance of donors. *Nature Communications*. 2021. 12(1): 4864.  
 |  | DOI: [10.1038/s41467-021-25113-5](https://doi.org/10.1038/s41467-021-25113-5)
27. JW Senefeld, MH Haischer, AM Jones, **CC Wiggins**, R Beilfuss, MJ Joyner, SK Hunter. Technological advances in elite marathon performance. *Journal of Applied Physiology*. 2021. 130(6): 2002-2008.  
 |  | DOI: [10.1152/jappphysiol.00002.2021](https://doi.org/10.1152/jappphysiol.00002.2021)
26. JW Senefeld, SA Klassen, SK Ford, KA Senese, **CC Wiggins**, BC Bostrom, MA Thompson, SE Baker, WT Nicholson, PW Johnson, RE Carter, JP Henderson, WR Hartman, L Pirofski, RS Wright, D Fairweather, KA Bruno, NS Paneth, A Casadevall, MJ Joyner. Use of convalescent plasma in COVID-19 patients with immunosuppression. *Transfusion*. 2021. 61(8): 2503-2511.  
 |  | DOI: [10.1111/trf.16525](https://doi.org/10.1111/trf.16525)
25. SA Klassen, JW Senefeld, KA Senese, PW Johnson, **CC Wiggins**, SE Baker, N van Helmond, KA Bruno, L Pirofski, S Shoham, BJ Grossman, JP Henderson, RS Wright, D Fairweather, NS Paneth, RE Carter, A Casadevall, MJ Joyner. Convalescent Plasma Therapy for COVID-19: A Graphical Mosaic of the Worldwide Evidence. *Frontiers in Medicine*. 2021. 8: 684151.  
 |  | DOI: [10.3389/fmed.2021.684151](https://doi.org/10.3389/fmed.2021.684151)
24. MJ Joyner\*, RE Carter\*, JW Senefeld\*, SA Klassen, MR Mills, PW Johnson, ES Theel, **CC Wiggins**, KA Bruno, AM Klompas, ER Lesser, KL Kunze, MA Sexton, JC Diaz Soto, SE Baker, JRA Shepherd, N van Helmond, NC Verdun, P Marks, CM van Buskirk, JL Winters, JR Stubbs, RF Rea, DO Hodge, V Herasevich, ER Whelan, AJ Clayburn, KF Larson, JG Ripoll, KJ Andersen, MR Buras, MNP Vogt, JJ Dennis, RJ Regimbal, PR Bauer, JE Blair NS Paneth, D Fairweather\*, RS Wright\*, A Casadevall\*. Convalescent plasma antibody levels and the risk of death from COVID-19. *New England Journal of Medicine*. 2021. 384(11):1015-1027.  
 |  | DOI: [10.1056/NEJMoa2031893](https://doi.org/10.1056/NEJMoa2031893)

23. SA Klassen, JW Senefeld, PW Johnson, RE Carter, **CC Wiggins**, S Shoham, BJ Grossman, JP Henderson, J Musser, E Salazar, WR Hartman, NM Bouvier, STH Liu, L Pirofski, SE Baker, N van Helmond, RS Wright, D Fairweather, KA Bruno, Z Wang, NS Paneth, A Casadevall, MJ Joyner. The Effect of convalescent plasma therapy on COVID-19 patient mortality: systematic review and meta-analysis. *Mayo Clinic Proceedings*. 2021. 96(5):1262-1275.  
 | [PubMed](#) | DOI: [10.1016/j.mayocp.2021.02.008](https://doi.org/10.1016/j.mayocp.2021.02.008)
22. JG Ripoll, N van Helmond, JW Senefeld, **CC Wiggins**, SA Klassen, SE Baker, KF Larson, BM Murphy, KJ Andersen, SK Ford, A Casadevall, MJ Joyner. Convalescent plasma for infectious diseases: Historical framework and use in COVID-19. *Clinical Microbiology Newsletter*. 2021. 15:43(4): 23-32.  
 | [PubMed](#) | DOI: [10.1016/j.clinmicnews.2021.02.001](https://doi.org/10.1016/j.clinmicnews.2021.02.001)
21. PB Dominelli, **CC Wiggins**, TK Roy, TB Curry, MJ Joyner. The oxygen cascade during exercise in health and disease. *Mayo Clinic Proceedings*. 2021. 96(4):1017-1032.  
 | [PubMed](#) | DOI: [10.1016/j.mayocp.2020.06.063](https://doi.org/10.1016/j.mayocp.2020.06.063)
20. JJ Dennis\*, **CC Wiggins\***, JR Smith, JMJ Isautier, BD Johnson, MJ Joyner, TJ Cross. Measurement of muscle blood flow and O<sub>2</sub> uptake via near-infrared spectroscopy using a novel occlusion protocol. *Scientific Reports*. 2021. 11(1):918.  
 | [PubMed](#) | DOI: [10.1038/s41598-020-79741-w](https://doi.org/10.1038/s41598-020-79741-w)
19. MN Baranauskas, K Constantini, HL Paris, **CC Wiggins**, ZJ Schlader, RF Chapman. Heat versus altitude training for endurance performance at sea level. *Exercise and Sport Science Reviews*. 2021. 49(1): 50-58.  
 | [PubMed](#) | DOI: [10.1249/JES.0000000000000238](https://doi.org/10.1249/JES.0000000000000238)
18. K Constantini, AC Bouillet, **CC Wiggins**, BJ Martin, RF Chapman. The role of ventilatory responsiveness during exercise in performance impairment in acute hypoxia. *Medicine & Science in Sports & Exercise*. 2021. 53(2): 295-305.  
 | [PubMed](#) | DOI: [10.1249/MSS.0000000000002466](https://doi.org/10.1249/MSS.0000000000002466)
17. **CC Wiggins**, SE Baker, JRA Shepherd, K Uchida, MJ Joyner, PB Dominelli. Body position influence cardiorespiratory measures but not muscle oxygenation during submaximal cycling exercise. *Translational Sports Medicine*. 2021. 4(2): 193-203.  
 DOI: [10.1002/tsm2.202](https://doi.org/10.1002/tsm2.202)
16. MJ Joyner, SE Baker, JW Senefeld, SA Klassen, **CC Wiggins**. Experiments of nature within species comparative physiology. *Comparative Biochemistry and Physiology - Part A: Molecular & Integrative Physiology*. 2020. 253: 110864.  
 | [PubMed](#) | DOI: [10.1016/j.cbpa.2020.110864](https://doi.org/10.1016/j.cbpa.2020.110864)
15. KJ Andersen\*, SA Klassen\*, KF Larson\*, JG Ripoll\*, JW Senefeld\*, AJ Clayburn, JRA Shepherd, AS Tseng, **CC Wiggins**, CP Johnson, AD Miller, SE Baker, RS Wright, JL Winters, JR Stubbs, MJ Joyner, CM van Buskirk. Recruitment strategy for potential COVID-19 convalescent plasma donors. *Mayo Clinic Proceedings*. 2020. 95(11): 2343-2349.  
 | [PubMed](#) | DOI: [10.1016/j.mayocp.2020.09.021](https://doi.org/10.1016/j.mayocp.2020.09.021)
14. K Uchida, SE Baker, **CC Wiggins**, JW Senefeld, JRA Shepherd, MR Trennery, ZA Buchholtz, CF Haider, D Holmes, MJ Joyner, TB Curry. A novel method to measure transient impairments in cognitive function during acute bouts of hypoxia. *Aerospace Medicine and Human Performance* 2020. 91(11): 839-844.  
 | [PubMed](#) | DOI: [10.3357/AMHP.5665.2020](https://doi.org/10.3357/AMHP.5665.2020)

13. W Guo, IM Eli, JG Ripoll, SE Baker, JRA Shepherd, **CC Wiggins**, BT Welch, MJ Joyner. Bronchopulmonary Dysplasia Patients Have Preserved CT-Measured Central Airway Luminal Area. *Respiratory Medicine*. 2020. 170: 106071.  
 |  | DOI: [10.1016/j.rmed.2020.106071](https://doi.org/10.1016/j.rmed.2020.106071)
12. MJ Joyner\*, KA Bruno\*, SA Klassen\*, KL Kunze\*, PW Johnson\*, ER Lesser\*, **CC Wiggins\***, JW Senefeld\*, AM Klompas\*, DO Hodge, JRA Shepherd, RF Rea, ER Whelan, AJ Clayburn, MR Spiegel, SE Baker, KF Larson, JG Ripoll, KJ Andersen, MR Buras, MNP Vogt, V Herasevich, JJ Dennis, RJ Regimbal, PR Bauer, JE Blair, CM van Buskirk, JL Winters, JR Stubbs, N van Helmond, NS Paneth, NC Verdun, P Marks, A Casadevall, D Fairweather, RE Carter, RS Wright. Safety Update: COVID-19 convalescent plasma in 20,000 hospitalized patients. *Mayo Clinic Proceedings*. 2020. 95(9): 1888-1897.  
 |  | DOI: [10.1016/j.mayocp.2020.06.028](https://doi.org/10.1016/j.mayocp.2020.06.028)
11. MJ Joyner, RS Wright, D Fairweather, JW Senefeld, KA Bruno, SA Klassen, RE Carter, AM Klompas, **CC Wiggins**, JRA Shepherd, RF Rea, ER Whelan, AJ Clayburn, MR Spiegel, PW Johnson, ER Lesser, SE Baker, KF Larson, JG Ripoll, KJ Andersen, DO Hodge, KL Kunze, MR Buras, MN Vogt, V Herasevich, JJ Dennis, RJ Regimbal, PR Bauer, JE Blair, CM van Buskirk, JL Winters, JR Stubbs, NS Paneth, A Casadevall. Early safety indicators of COVID-19 Convalescent Plasma in 5,000 patients. *Journal of Clinical Investigation*. 2020. 130(9): 4791–4797.  
 |  | DOI: [10.1172/JCI140200](https://doi.org/10.1172/JCI140200)
10. JW Senefeld\*, **CC Wiggins\***, RJ Regimbal, PB Dominelli, SE Baker, MJ Joyner. Nitrate supplementation enhances exercise performance: A systematic review and meta-analysis. *Medicine & Science in Sports & Exercise*. 2020. 52(10):2250-2261.  
 |  | DOI: [10.1249/MSS.0000000000002363](https://doi.org/10.1249/MSS.0000000000002363)
9. PB Dominelli, **CC Wiggins**, SE Baker, JRA Shepherd, SK Roberts, TK Roy, TB Curry, JD Hoyer, JL Oliveira, MJ Joyner. Influence of high affinity haemoglobin on the response to normoxic and hypoxic exercise. *Journal of Physiology*. 2020. 598(8): 1475-1490.  
 |  | DOI: [10.1113/JP279161](https://doi.org/10.1113/JP279161)
8. JG Ripoll, W Guo, KJ Andersen, SE Baker, **CC Wiggins**, JRA Shepherd, RE Carter, BT Welch, MJ Joyner, PB Dominelli. Sex differences in paediatric airway anatomy. *Experimental Physiology*. 2020. 105(4): 721-731.  
 |  | DOI: [10.1113/EP088370](https://doi.org/10.1113/EP088370)
7. PB Dominelli, SE Baker, **CC Wiggins**, GM Stewart, P Sajjalik, JRA Shepherd, SK Roberts, TK Roy, TB Curry, JD Hoyer, JL Oliveira, GE Foster, MJ Joyner. Disassociating the effects of oxygen pressure and content on the control of breathing and acute hypoxic response. *Journal of Applied Physiology*. 2019. 127(6):1622-131.  
 |  | DOI: [10.1152/jappphysiol.00569.2019](https://doi.org/10.1152/jappphysiol.00569.2019)
6. **CC Wiggins**, K Constantini, HL Paris, TD Mickelborough, RF Chapman. Ischemic preconditioning, O<sub>2</sub> uptake kinetics, and performance in normoxia and hypoxia. *Medicine & Science in Sports & Exercise*. 2019. 51(5): 900-911.  
 |  | DOI: [10.1249/MSS.0000000000001882](https://doi.org/10.1249/MSS.0000000000001882)
5. DG Hursh\*, MN Baranuskas\*, **CC Wiggins**, SA Bielko, TD Mickleborough, RF Chapman. Inspiratory muscle training improves exercise performance with acute hypoxic exposure. *International Journal of Sports Physiology and Performance*. 2019. 14(8): 1124-1131.  
 |  | DOI: [10.1123/ijsp.2018-0483](https://doi.org/10.1123/ijsp.2018-0483)

4. PB Dominelli, JG Ripoll, TJ Cross, SE Baker, **CC Wiggins**, BT Welch, MJ Joyner. Sex differences in large conducting airway anatomy. *Journal of Applied Physiology*. 2018. 125(3): 960-965.  
 |  | DOI: [10.1152/jappphysiol.00440.2018](https://doi.org/10.1152/jappphysiol.00440.2018)
  3. SS Thosar, **CC Wiggins**, SA Shea, JP Wallace. Brachial artery endothelial function is stable across the morning in young men. *Cardiovascular Ultrasound*. 2015. 13(42): 1-7.  
 |  | DOI: [10.1186/s12947-015-0036-1](https://doi.org/10.1186/s12947-015-0036-1)
  2. SS Thosar, SL Bielko, **CC Wiggins**, JE Klaunig, KJ Mather, JP Wallace. Antioxidant vitamin C prevents decline in endothelial function during sitting. *Medical Science Monitor*. 2015. 7(21): 1015-1021.  
 |  | DOI: [10.12659/MSM.893192](https://doi.org/10.12659/MSM.893192)
  1. SS Thosar, SL Bielko, **CC Wiggins**, JP Wallace. Differences in brachial and femoral artery responses to prolonged sitting. *Cardiovascular Ultrasound*. 2014. 12(50): 1-7.  
 |  | DOI: [10.1186/1476-7120-12-50](https://doi.org/10.1186/1476-7120-12-50)
- \* indicates that authors contributed equally on the publication  
 Updated list of indexed publications: [PubMed Bibliography](#)

### PUBLICATIONS IN REVIEW / PREPARATION

1. JW Senefeld, EK Gorman, PW Johnson, SA Klassen, RE Carter, NS Paneth, DJ Sullivan, OH Morkeberg, RS Wright, D Fairweather, KA Bruno, EM Bloch, D Focosi, JP Henderson, JE Juskewitch, L Pirofski, NJ Grossman, AAR Tobian, M Franchini, R Ganesh, RT Hurt, NE Kay, SA Parikh, SE Baker, ZA Buchholtz, MR Buras, AJ Clayburn, JJ Dennis, JC Diaz Soto, V Herasevich, AM Klompas, KL Kunze, KF Larson, JR Mills, RJ Regimbal, JG Ripoll, MA Sexton, JRA Shepherd, JR Stubbs, ES Theel, CM van Buskirk, N van Helmond, MNP Vogt, ER Whelan, **CC Wiggins**, JL Winters, A Casadevall, MJ Joyner. Mortality rates among hospitalized patients with COVID-19 treated with convalescent plasma: a systematic review and meta-analysis. *Mayo Clinic Proceedings*. **In Review**.
2. KL Webb, EK Gorman, OH Morkeberg, SA Klassen, RJ Regimbal, **CC Wiggins**, MJ Joyner, SM Hammer, JW Senefeld. The relationship between hemoglobin and  $\dot{V}O_2\max$ : a systematic review and meta-analysis. *PLOS One*. **In Revision**.
3. KL Webb, MJ Joyner, **CC Wiggins**, TW Secomb, TK Roy. The dependence of maximum oxygen uptake on hemoglobin-oxygen affinity and altitude. *Journal of Applied Physiology*. **In Revision**.
4. WW Pruter\*, KL Webb\*, RJ Poole, RW Techentin, CP Johnson, RJ Regimbal, KJ Berndt, DR Holmes, CR Haider, MJ Joyner, VA Convertino, **CC Wiggins\***, TB Curry\*. Comparing the compensatory reserve metric obtained from invasive arterial measurements and photoplethysmographic volume-clamp during simulated hemorrhage. *Anesthesia & Analgesia*. **In Preparation**.
5. **CC Wiggins**, KL Webb, JJ Dennis, AJ Clayburn, PB Dominelli, JW Senefeld, TK Roy, TB Curry, JD Hoyer, JL Herrick, MJ Joyner. The role of high-affinity hemoglobin on oxygen delivery and utilization during normoxic and hypoxic exercise. *Journal of Physiology*. **In Preparation**.
6. MB Linde\*, KL Webb\*, DM Veith, OH Morkeberg, ML Gill, M van Straaten, ER Laskowski, MJ Joyner, LA Beck, KD Zhao, **CC Wiggins\***, KL Garlanger\*. High-intensity interval training at-home: An exercise program for individuals with paraplegia following spinal cord injury. *Journal of Spinal Cord Medicine*. **In Review**.



7. PB Dominelli, JW Senefeld, **CC Wiggins**, SE Baker, AJ Clayburn, MJ Joyner. Quadriceps fatigue during hypoxic and ischemic knee-extension exercise in males and females. *Journal of Applied Physiology*. **In Preparation**.

\*indicates that authors contributed equally on the publication

## COMMENTARIES AND LETTERS TO THE EDITORS

7. JM Bock, CC Wiggins, JW Senefeld. Commentary on Viewpoint: COVID-19 controls causing a kerfuffle: Accounting for COVID-19 in Physiological Research: Another Drop in the Bucket? *Journal of Applied Physiology*. 2022. 133(5):1224.

 |  | DOI: [10.1152/jappphysiol.00536.2022](https://doi.org/10.1152/jappphysiol.00536.2022)

6. MN Baranauskas, K Constantini, HL Paris, **CC Wiggins**, ZJ Schlader, RF Chapman. Response (to Brocherie et al). *Exercise and Sport Science Reviews*. 2021. 49(3): 225-226.

 |  | DOI: [10.1249/JES.0000000000000256](https://doi.org/10.1249/JES.0000000000000256)

5. SA Klassen, **CC Wiggins**, JW Senefeld. Does the broad nature of sympathetic discharge affect our understanding regarding the impact of intermittent hypoxia on neurovascular transduction? (Journal Club). *Journal of Physiology*. 2020. 598(11): 2055-2057.

 |  | DOI: [10.1113/JP279684](https://doi.org/10.1113/JP279684)

4. JW Senefeld, JR Smith, **CC Wiggins**, MJ Joyner. Sex dimorphism of  $\dot{V}O_2$ max Trainability: The interaction of age. *Sports Medicine*. 2020. 50: 1047-1048.

 |  | DOI: [10.1007/s40279-020-01270-3](https://doi.org/10.1007/s40279-020-01270-3)

3. JW Senefeld, **CC Wiggins**, MJ Joyner, JK Limberg. Warm-up exercise in human type 2 diabetes: is high-intensity exercise required? *Journal of Applied Physiology*. 2020. 128(1):225-226.

 |  | DOI: [10.1152/jappphysiol.00732.2019](https://doi.org/10.1152/jappphysiol.00732.2019)

2. RJ Shei, **CC Wiggins**. Cystic fibrosis slows oxygen uptake kinetics during exercise and recovery. *Journal of Physiology*. 2017. 595(5): 1423-1425.



1. K Constantini, TJ Fulton, DG Hursh, TJ Noble, HL Paris, **CC Wiggins**, RF Chapman. Commentary on Viewpoint: Time for a new metric for hypoxic dose? *J Appl Physiol*. 2016. 121(1): 357.


 |  | DOI: [10.1152/jappphysiol.00460.2016](https://doi.org/10.1152/jappphysiol.00460.2016)











## CONFERENCE PRESENTATIONS AND PUBLISHED ABSTRACTS












- 2023 KL Webb, EK Gorman, OH Morkeberg, SA Klassen, RJ Regimbal, **CC Wiggins**, MJ Joyner, SM Hammer, JW Senefeld. The relationship between hemoglobin and  $\dot{V}O_2$ max: A systematic review and meta-analysis. *Medicine & Science in Sports & Exercise*. XX (X Suppl): XX-XX

 | DOI: [In Press](#)

- 2023 TH Blechschmid, MN Baranauskas, **CC Wiggins**, EB Long, JS Raglin, AR Coggan, SJ Carter. Pre-workout beetroot juice combined with supervised exercise training enhances functional capacity in older women. *Medicine & Science in Sports & Exercise*. XX (X Suppl): XX-XX

 | DOI: [In Press](#)

- 2023 EK Gorman, JW Senefeld, EA Ovrom, AJ Clayburn, MJ Joyner, JF Burr, **CC Wiggins**. The association between ischemic preconditioning and exercise performance: a systematic review and meta-analysis. *Physiology*. 38 (1 Suppl): 5730981.  
 | DOI: [10.1249/01.mss.0000675800.49464.37](https://doi.org/10.1249/01.mss.0000675800.49464.37)
- 2023 AJ Miller, EA Ovrom, JW Senefeld, **CC Wiggins**, PB Dominelli, MJ Joyner, BT Welch, AH Ramsook. Sex differences in central airway luminal area among people with interstitial lung disease. *Physiology*. 38 (1 Suppl): 5731276.  
 | DOI: [10.1152/physiol.2023.38.S1.5731276](https://doi.org/10.1152/physiol.2023.38.S1.5731276)
- 2023 S Zremba, AJ Miller, EA Ovrom, JW Senefeld, **CC Wiggins**, PB Dominelli, MJ Joyner, BT Welch, AH Ramsook. Airway luminal area in long COVID patients compared to acute COVID-19 patients. *Physiology*. 38 (1 Suppl): 5731335.  
 | DOI: [10.1152/physiol.2023.38.S1.5731335](https://doi.org/10.1152/physiol.2023.38.S1.5731335)
- 2023 SA Klassen, JK Limberg, RE Harvey, CC Wiggins, N Iannarelli, JW Senefeld, WT Nicholson, TB Curry, MJ Joyner, JK Shoemaker, SE Baker. Central alpha-2 adrenergic mechanisms affect human sympathetic neuronal discharge strategies. *Physiology*. 38 (1 Suppl): 5733156.  
 | DOI: [10.1152/physiol.2023.38.S1.5733156](https://doi.org/10.1152/physiol.2023.38.S1.5733156)
- 2022 KL Webb, DD Veith, MB Linde, AD Miller, OH Morkeberg, ER Laskowski, MJ Joyner, KL Garlanger, **CC Wiggins**. Effects of High-Intensity Interval Training (HIIT) on Central Hemodynamics in Patients with Spinal Cord Injury. *Medicine & Science in Sports & Exercise*. 54 (9 Suppl): 105-106.  
 | DOI: [10.1249/01.mss.0000876364.97326.b5](https://doi.org/10.1249/01.mss.0000876364.97326.b5)
- 2022 OH Morkeberg, JW Senefeld, M Husen, **CC Wiggins**, EK Gorman, PW Johnson, MJ Joyner. Context dependent trade-offs in body size in Olympic sports. *Medicine & Science in Sports & Exercise*. 54 (9 Suppl): 364.  
 | DOI: [10.1249/01.mss.0000879624.96673.79](https://doi.org/10.1249/01.mss.0000879624.96673.79)
- 2022 WW Pruter, SA Klassen, PB Dominelli, **CC Wiggins**, JW Senefeld, TK Roy, MJ Joyner, SE Baker. Cardiac baroreflex and heart rate variability are lower in humans with high affinity hemoglobin compared to typical affinity hemoglobin. *The FASEB Journal*. 36(1 Suppl): R874.  
 | DOI: [10.1096/fasebj.2022.36.S1.0R874](https://doi.org/10.1096/fasebj.2022.36.S1.0R874)
- 2022 KL Webb, RJ Regimbal, OH Morkeberg, JW Senefeld, SE Baker, MJ Joyner, **CC Wiggins**. Central hemodynamic response during submaximal and exhaustive exercise in humans with high affinity hemoglobin and compensatory polycythemia. *The FASEB Journal*. 36(1 Suppl): R5381.  
 | DOI: [10.1096/fasebj.2022.36.S1.R5381](https://doi.org/10.1096/fasebj.2022.36.S1.R5381)
- 2021 DD Veith, MB Linde, **CC Wiggins**, LA Beck, ML Gill, BA Snider, KD Zhao, KL Garlanger. Tools to improve independent at-home high-intensity interval training compliance in individuals with spinal cord injury. *Journal of Spinal Cord Medicine*. 44(5): 827-858.  
 | DOI: [10.1080/10790268.2021.1959194](https://doi.org/10.1080/10790268.2021.1959194)
- 2020 **CC Wiggins**, PB Dominelli, SE Baker, JRA Shepherd, K Uchida, MJ Joyner. Oxygen uptake kinetics and exercise tolerance in hypoxia: Effect of high-affinity hemoglobin. *Medicine & Science in Sports & Exercise*. 52 (7 Suppl): 207.<sup>†</sup>  
 | DOI: [10.1249/01.mss.0000675800.49464.37](https://doi.org/10.1249/01.mss.0000675800.49464.37)

- 2020 **CC Wiggins**, PB Dominelli, SE Baker, JRA Shepherd, K Uchida, MJ Joyner. Skeletal muscle blood flow and vascular conductance are enhanced in humans with high-affinity hemoglobin during handgrip exercise in severe hypoxia. *The FASEB Journal*. 34 (1 Suppl): 633.7.†  
 | DOI: [10.1096/fasebj.2020.34.s1.00495](https://doi.org/10.1096/fasebj.2020.34.s1.00495)
- 2020 AN Elshaer, PB Dominelli, SE Baker, JRA Shepherd, JD Hoyer, JL Oliveira, MJ Joyner, **CC Wiggins**. Muscle oxygenation during hypoxic exercise in humans: Effect of high-affinity hemoglobin. *The FASEB Journal*. 34 (1 Suppl): 633.8.†  
 | DOI: [10.1096/fasebj.2020.34.s1.00275](https://doi.org/10.1096/fasebj.2020.34.s1.00275)
- 2020 JD Dennis, **CC Wiggins**, Joyner MJ, BD Johnson, TC Cross. Day-to-Day Reproducibility of the Near-infrared Spectroscopy Venous Occlusion Technique in Young Healthy Adults. *The FASEB Journal*. 34 (1 Suppl): 1007.4.†  
 | DOI: [10.1096/fasebj.2020.34.s1.02251](https://doi.org/10.1096/fasebj.2020.34.s1.02251)
- 2020 RJ Regimbal, Senefeld, JW, **CC Wiggins**, PB Dominelli, SE Baker, MJ Joyner. Nitrate supplementation enhances exercise performance: A systematic review and meta-analysis. *The FASEB Journal*. 34 (1 Suppl): 970.12.†  
 | DOI: [10.1096/fasebj.2020.34.s1.00105](https://doi.org/10.1096/fasebj.2020.34.s1.00105)
- 2020 ZA Buchholtz, SE Baker, **CC Wiggins**, MJ Joyner, TB Curry, K Uchida. Moderate hypoxia leads to faster reaction time but suppressed neurological inhibition. *The FASEB Journal*. 34 (1 Suppl): 967.3†  
 | DOI: [10.1096/fasebj.2020.34.s1.01943](https://doi.org/10.1096/fasebj.2020.34.s1.01943)
- 2020 K Uchida, SE Baker, **CC Wiggins**, Senefeld, JW, Shepherd JRA, MR Trennery, MJ Joyner, TB Curry. Changes in Physiological Indices during Cognitive Deterioration with Acute Bout of Hypoxia. *The FASEB Journal*. 34 (1 Suppl): 967.4.†  
 | DOI: [10.1096/fasebj.2020.34.s1.01944](https://doi.org/10.1096/fasebj.2020.34.s1.01944)
- 2020 WL Guo, Eli, IM, JG Ripoll, SE Baker, JRA Shepherd, **CC Wiggins**, MJ Joyner, PB Dominelli. Bronchopulmonary Dysplasia Patients Have Preserved CT-Measured Central Airway Luminal Area. *The FASEB Journal*. 34 (1 Suppl): 661.2.†  
 | DOI: [10.1096/fasebj.2020.34.s1.03321](https://doi.org/10.1096/fasebj.2020.34.s1.03321)
- 2020 BP Butterfield, JRA Shepherd, Senefeld, JW, **CC Wiggins**, MJ Joyner, TB Curry, VA Convertino, SE Baker. Exogenous Infusion of Epinephrine Augments Cardiac Output during Simulated Hemorrhage in Humans. *The FASEB Journal*. 34 (1 Suppl): 1082.11.†  
 | DOI: [10.1096/fasebj.2020.34.s1.09376](https://doi.org/10.1096/fasebj.2020.34.s1.09376)
- 2020 JG Ripoll, W Guo, KJ Andersen, SE Baker, **CC Wiggins**, Shepherd JRA, RE Carter, BT Welch, MJ Joyner, PB Dominelli. Pediatric Sex-Differences in Large Conducting Airway Anatomy. *American Journal of Respiratory and Critical Care Medicine*. 201: A234.†  
 | DOI: [10.1164/ajrccm-conference.2020.201.1\\_MeetingAbstracts.A2348](https://doi.org/10.1164/ajrccm-conference.2020.201.1_MeetingAbstracts.A2348)
- 2019 **CC Wiggins**, PB Dominelli, Shepherd JR, SE Baker, K Uchida, MJ Joyner. Gemfibrozil and oxygen-hemoglobin binding affinity in humans. *Medicine & Science in Sports & Exercise*. 49(5 Suppl): 1155.  
 | DOI: [10.1249/01.mss.0000561410.93282.9c](https://doi.org/10.1249/01.mss.0000561410.93282.9c)
- 2019 MN Baranauskas, C Nowrouzi, **CC Wiggins**, RF Chapman. Hypoxic exercise performance with an antihistamine: influence of aerobic fitness. *Medicine & Science in Sports & Exercise*. 49(5 Suppl): 1676.  
 | DOI: [10.1249/01.mss.0000561877.92163.d8](https://doi.org/10.1249/01.mss.0000561877.92163.d8)

- 2019 W Guo, SE Baker, **CC Wiggins**, MJ Joyner, PB Dominelli. Albuterol improves lung-emptying dynamics in patients with cystic fibrosis. *The FASEB Journal*. 33 (1 Suppl): 841.1.  
 | DOI: [10.1096/fasebj.2019.33.1\\_supplement.841.1](https://doi.org/10.1096/fasebj.2019.33.1_supplement.841.1)
- 2018 PB Dominelli, **CC Wiggins**, SE Baker, MJ Joyner. Influence of body position on vastus lateralis oxygenation during cycling exercise. *Appl Physiol Nutr Metab*. 43 (10 Suppl): S55.  
 | DOI: [10.1139/apnm-2018-0499](https://doi.org/10.1139/apnm-2018-0499)
- 2018 **CC Wiggins**, Constantini K, TD Mickleborough, RF Chapman. Ischemic Preconditioning and Cycling Time Trial Performance in Hypoxia. *Medicine & Science in Sports & Exercise*. 50 (5 Suppl): 751.  
 | DOI: [10.1249/01.mss.0000538475.84801.ce](https://doi.org/10.1249/01.mss.0000538475.84801.ce)
- 2018 **CC Wiggins**, K Constantini, Paris, HL, TD Mickleborough, RF Chapman. Effect of Ischemic Preconditioning on Oxygen Uptake and Extraction Kinetics During Exercise in Normoxia and Hypoxia. *The FASEB Journal*. 32 (1 Suppl): 909.8.  
 | DOI: [10.1096/fasebj.2018.32.1\\_supplement.909.8](https://doi.org/10.1096/fasebj.2018.32.1_supplement.909.8)
- 2017 DG Hursh, **CC Wiggins**, SA Bielko, MN Baranuskas, TD Mickleborough, JM Stager, RF Chapman. Inspiratory Muscle Training and Endurance Performance in Hypoxia. *Medicine & Science in Sports & Exercise*. 49 (5 Suppl): 241-242.  
 | DOI: [10.1249/01.mss.0000517513.21510.d4](https://doi.org/10.1249/01.mss.0000517513.21510.d4)
- 2017 SA Bielko, **CC Wiggins**, DG Hursh, TD Mickleborough, JM Stager, RF Chapman. Does inspiratory muscle training affect leg blood flow during hypoxic exercise? *Medicine & Science in Sports & Exercise*. 49 (5 Suppl): 797.  
 | DOI: [10.1249/01.mss.0000519130.33238.35](https://doi.org/10.1249/01.mss.0000519130.33238.35)
- 2016 **CC Wiggins**, SA Bielko, AJ Campbell, TD Mickleborough, RF Chapman. Chronic omega-3 fatty acid supplementation and oxygen uptake kinetics during heavy exercise: *Medicine & Science in Sports & Exercise*. 48 (5 Suppl): 12.  
 | DOI: [10.1249/01.mss.0000485043.29915.02](https://doi.org/10.1249/01.mss.0000485043.29915.02)
- 2016 SA Bielko, AJ Campbell, **CC Wiggins**, TD Mickleborough, RF Chapman. Chronic omega-3 supplementation and erythrocyte deformability,  $\dot{V}O_2$ , and performance during normobaric hypoxic exercise. *Medicine & Science in Sports & Exercise*. 48 (5 Suppl): 303.  
 | DOI: [10.1249/01.mss.0000485912.30823.81](https://doi.org/10.1249/01.mss.0000485912.30823.81)
- 2014 **CC Wiggins**, SS Thosar, SL Bielko, JP Wallace. Can exercise attenuate endothelial dysfunction for two consecutive high-fat meals? *Medicine & Science in Sports & Exercise*. 46 (5 Suppl): 751-752.  
 | DOI: [10.1249/01.mss.0000495749.84256.18](https://doi.org/10.1249/01.mss.0000495749.84256.18)
- 2014 SS Thosar, SL Bielko, **CC Wiggins**, KJ Mather, JD Johnston, JP Wallace. Can breaking up sitting time alter femoral artery endothelial function? *Medicine & Science in Sports & Exercise*. 46 (5 Suppl): 12-13.  
 | DOI: [10.1249/01.mss.0000493199.05854.36](https://doi.org/10.1249/01.mss.0000493199.05854.36)
- 2014 JP Wallace, SL Bielko, **CC Wiggins**, KJ Mather, SS Thosar. Does brachial artery Endothelial function represent the endothelial function during prolonged sitting? *Medicine & Science in Sports & Exercise*. 46 (5 Suppl): 13.  
 | DOI: [10.1249/01.mss.0000493200.13477.0f](https://doi.org/10.1249/01.mss.0000493200.13477.0f)
- 2014 SL Bielko, SS Thosar, **CC Wiggins**, AM Gorczya, JP Wallace. Choosing the lipid dose for postprandial endothelial function and exercise. *Medicine & Science in Sports & Exercise*. 46 (5 Suppl): 747.  
 | DOI: [10.1249/01.mss.0000495735.94558.d7](https://doi.org/10.1249/01.mss.0000495735.94558.d7)

2014 SS Thosar, SL Bielko, **CC Wiggins**, KJ Mather, JE Klaunig, JP Wallace. Oral vitamin C prevents the attenuation in flow mediated dilation during prolonged sitting. *The FASEB Journal*. 28 (1 Suppl): 546.3.



| DOI: [10.1096/fasebj.28.1\\_supplement.546.3](https://doi.org/10.1096/fasebj.28.1_supplement.546.3)

† indicates abstract not presented in-person due to conference cancellation during COVID-19 pandemic

### INVITED PRESENTATIONS

2022 **CC Wiggins**. Resting and exercise responses to hypoxia: Insights from high-affinity hemoglobin. Experimental Biology Annual Meeting. Environmental and Exercise Physiology (EEP) Section Symposium. Philadelphia, PA. May 3, 2022.

2020 **CC Wiggins**, PB Dominelli, Senefeld, JW, JRA Shepherd, K Uchida, SE Baker, MJ Joyner. Skeletal muscle blood flow during hand grip exercise in hypoxia: Influence of high-affinity hemoglobin. 2020 Okanagan Cardiovascular and Respiratory Symposium. Silver Star Mountain Resort, British Columbia, Canada. (Cancelled for COVID-19)†

2019 PB Dominelli, **CC Wiggins**, SE Baker, Shepherd JR, Roberts, SK, Roy, TK, JD Hoyer, Oliveira JL, MJ Joyner. Individuals with high affinity hemoglobin have a blunted decline in VO<sub>2</sub>max in acute hypoxia. 21<sup>st</sup> International Hypoxia Symposia. Lake Louise, AB, Canada. 2019.

### ACCEPTED ABSTRACTS

### PATENT

SS Thosar, JP Wallace, **CC Wiggins**. 2015. System and method for analyzing antegrade and retrograde blood flow. *U.S. Patent No. 20,150,379,736*. Washington, DC: U.S. Patent and Trademark Office.

### KNOWLEDGE TRANSLATION AND MEDIA

Media Type	Source
Web	<b>Outside Magazine</b> - May 13, 2019 <a href="#"><u>Train Your Breathing Muscles to Prepare for Altitude</u></a>
Web	<b>Discovery's Edge, Mayo Clinic's Research Magazine</b> - June 19, 2020. <a href="#"><u>Will COVID-19 Change the Next Generation in Medical Care And Research? Signs Point to Yes</u></a>

### CURRENT/PENDING GRANTS AND CONTRACTS

#### Forma Therapeutics, Inc., Research Contract

PIs: Michael J. Joyner and Chad C. Wiggins

Title: The effect of etavopivat on oxygen binding affinity, skeletal muscle blood flow, maximal oxygen uptake during, and blood pressure regulation during exercise in hypoxia: A single-arm crossover trial

Duration: 02/01/2022 – 08/01/2023

Role: Co-PI

Budget: \$550,536

#### National Institutes of Health- Outstanding Investigator Award, NHLBI (R35HL139854)

PI: Michael J. Joyner

Title: Variant Hemoglobin and Cardiorespiratory Regulation in Humans

Duration: 01/19/2018 – 11/30/2024

Role: Key Research Personnel

Budget: \$3,933,664 (through 2023)

### COMPLETED GRANTS/CONTRACTS

Department of Health and Human Services, Biomedical Advanced Research and Development Authority (BARDA)- Federal Contract (75A50120C00096, 75A50121P00001)

PI: Michael J. Joyner

Title: A Nationwide Expanded Access Program (EAP) to Facilitate the Use of Human Convalescent Plasma to Treat Hospitalized Coronavirus-2 (SARS-CoV-2) COVID-19 Patients, with Supplement for Neutralizing Antibody Testing and Establishment of Treatment/Control Cohort

Duration: 05/01/2020 – 03/31/2022

Role: Key Research Personnel

Budget: \$66,437,285

#### National Institutes of Health T32 Training Grant, NIDDK (T32-DK-007352-39)

Title: Diabetes and Metabolism

Role: Postdoctoral Trainee (PI- Michael D. Jensen, MD)

#### American Diabetes Association- Innovation Award

Title: The effect of altered erythrocyte deformability on microvasculature oxygenation and exercise tolerance in adults with Type II diabetes

Duration: 07/01/2013 – 07/01/2015

Role: Key Research Personnel (PI- Robert F. Chapman, PhD)

Budget: \$94,801

#### School of Public Health- Student Research Grant

Title: The effect of moderate intensity exercise on postprandial endothelial function following two consecutive high-fat meals.

Duration: 10/01/2012 – 08/01/2013

Role: PI

Budget: \$1,000

## ACADEMIC SERVICE

### AD HOC REVIEWER

	<u>Mayo Clinic</u>	<u>MSU</u>	<u>Total</u>
AJP- Heart and Circulatory Physiology	2		2
AJP- Regulatory, Integrative and Comparative Physiology	1		1
Applied Physiology, Nutrition, and Metabolism	3		3
European Journal of Applied Physiology	3		3
European Journal of Sport Sciences	1		1
Experimental Physiology	3		3
Frontiers in Medicine	1		1
International Journal of Sports Physiology and Performance	3		3
Journal of Applied Physiology	2		2
Journal of Science in Sport and Exercise	2		2
Medicine & Science in Sports & Exercise	7		7
Microvascular Research	1		1
Research Quarterly for Exercise and Sport	1		1
Scandinavian Journal of Medicine and Science in Sports	1		1
Sports Medicine	1		1

**Note:** numbers on right indicate the total number of manuscripts reviewed for the journal.

### STUDENT MENTORSHIP

#### MAYO CLINIC

Wyatt Pruter	Post-bacc	2022-present
Kevin Webb	PhD student	2020-present
Jeffrey Jeltema	MD student	2021-2023
Riley Regimbal	Post-bacc	2018-2023
Olaf Morkeberg	Post-bacc	2021-2022
Joshua Dennis	Post-bacc	2018-2021
Ahmed Elshaer	MD summer student	2019
Rehan Iftikar	High school student	2018

#### INDIANA UNIVERSITY-BLOOMINGTON

Shane Bielko	MS student	2014-2017
Allison Campbell	MS student	2014-2015
Bridget VerVaet	Undergraduate	2014

### OTHER ACADEMIC SERVICE

- 2023 American Physiological Society (APS) Response to NIH Request for Information regarding Postdoctoral Training Progression within the Biomedical Research Enterprise (NOT-OD-23-084)
- 2020-2021 COVID-19 Convalescent Plasma (CCPP-19) Task Force Member  
*Subcommittee Member:* Communication
- 2020-2021 Push4Plasma Initiative ([www.universitybloodinitiative.org/push4plasma](http://www.universitybloodinitiative.org/push4plasma))  
*Subcommittee Member:* Technology/Screening

## TEACHING EXPERIENCE

### COURSE INSTRUCTION

Course Title	Year	Level	Enrollment	Lecture hrs/ week
Special Topics: Human Performance and Nutrition	2016-2017 (SP only)	400	13	3.0

### LABORATORY INSTRUCTION

Course Title	Year	Level	Total # of Students	Lab hrs/week
Basic Physiology of Exercise*	2016-2017 (FA*/SP*)	400	37	3.0
Fitness Testing and Interpretation	2016-2017 (FA only*)	400	35	4.5
Basic Physiology of Exercise	2015-2016 (FA/SP/SU*)	400	57	3.0
Fitness Testing and Interpretation	2015-2016 (FA only*)	400	39	4.5
Basic Physiology of Exercise	2014-2015 (FA/SP/SU*)	400	45	3.0
Basic Physiology of Exercise	2013-2014 (FA/SP/SU*)	400	50	3.0

FA= Fall Semester; SP= Spring Semester; SU= Summer Semester

\* denotes served as laboratory coordinator for all lab sections

### GUEST LECTURES AND INVITED PRESENTATIONS

Date	Institution	Department	Class #	Lecture Title
09/29/2021	Indiana University	IU Kinesiology Movement Sciences Seminar	--	Blood flow and O <sub>2</sub> delivery during exercise in hypoxia: Insights from Human Llamas
02/11/2020	Mayo Clinic	Endocrinology-Endocrine Research Seminar	--	Skeletal muscle blood flow and oxygen uptake kinetics during exercise in hypoxia: Insights from high-affinity hemoglobin
08/27/2019	Mayo Clinic	Clinical Research Trails Unit Nursing	--	From bedside to mountaintop- Insights from integrative physiology research
02/05/2019	Mayo Clinic	Endocrinology-Endocrine Research Seminar	--	Alterations in oxygen binding affinity and the exercise response in humans
12/08/2015	Indiana University	Kinesiology	K-419	Exercise and Performance Testing in Elite Athletes



09/08/2015	Indiana University	Public Health	X-590	Introduction to University Library Services, Literature Searches, and Zotero
09/04/2014	Indiana University	Public Health	X-590	Introduction to University Library Services, Literature Searches, and EndNote
06/25/2014	Indiana University	Public Health	X-590	Introduction to University Library Services, Literature Searches, and EndNote X7
09/05/2013	Indiana University	Public Health	X-590	Introduction to University Library Services, Literature Searches, and EndNote
08/27/2012	Indiana University	Public Health	P-212	Introduction to University Library Services, and Literature Searches

**COMMUNITY SERVICE**

- 2014-2016      Tri-North Middle School, Bloomington, IN, Assistant Football Coach
- 2012-2013      Monroe County Youth Football Association, Bloomington, IN, Volunteer Assistant Coach