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## **PROFESSIONAL PREPARATION**

- 2011-2014            Doctor of Philosophy in Human Sciences (Specialization in Nutrition and Health Sciences; Emphasis in Exercise Physiology), University of Nebraska-Lincoln, Lincoln, Nebraska.
- 2009-2011            Master of Science in Nutrition and Health Sciences (Specialization in Nutrition and Exercise), University of Nebraska-Lincoln, Lincoln, Nebraska.
- 2005-2009            Bachelor of Science (Major: Exercise Science), Doane University, Crete, Nebraska

## **PROFESSIONAL EXPERIENCES**

- 2020 – Present            Associate Professor in Kinesiology and Health Promotion at the University of Kentucky, Lexington, KY
- 2014 – 2020            Assistant Professor in Kinesiology and Health Promotion at the University of Kentucky, Lexington, KY
- 2010 – 2014            Graduate Assistant in the Exercise Physiology Laboratory at the University of Nebraska-Lincoln, Lincoln, NE
- 2008 – 2009            Sports Performance Assistant Trainer at Madonna ProActive, Lincoln, NE
- 2006 – 2007            Physical Therapy Aide at Tri-County Hospital, Lexington, NE

## **INSTRUCTIONAL SUMMARY**

### *University of Kentucky*

Laboratory Methods in Exercise Science (KHP 640)  
Physiology of Exercise (KHP 420G)  
Introduction to Exercise Testing and Prescription (KHP 450)  
Strength and Conditioning for Sports (KHP 350)

### *University of Nebraska-Lincoln*

Physiology of Exercise (NUTR 484/884)  
Exercise Testing and Exercise Programming in Adult Fitness and Cardiac Rehabilitation (NUTR 486/886)

## **PRIMARY RESEARCH INTERESTS**

- Integration of nutrition and exercise interventions on health and performance measures
- The mathematical modeling of human performance
- Fatigue thresholds as they relate to exercise performance parameters
- The non-invasive assessment of muscle function and fatigue
- Examination of changes in physiological and perceptual responses to fatiguing exercise including;  $\dot{V}O_2$ , heart rate, muscle activation, and ratings of perceived exertion

## PUBLICATIONS

\*For all manuscripts and abstracts the first author is designated as the principal investigator and the last author is designated as the senior author

1. Dinyer, T.K., Byrd, M.T., Succi, P.J., Clasey, J.L., **Bergstrom, H.C.** Contributions of maximal strength and body composition characteristics to resistance exercise performance at the critical load. *Journal of Exercise Physiologyonline*. In Press, May 2020.
2. Beyer, K.S., Stout, J.R., Redd, M.J., Baker, K.M., Church, D.D., **Bergstrom, H.C.**, Hoffman, J.R., Fukuda, D.H. Effect of somatic maturity on aerobic and anaerobic adaptation to sprint interval training. *Physiological Reports*, In Press, March 2020.
3. Succi, P.J., Dinyer, T.K., Byrd, M.T., and **Bergstrom, H.C.** Comparisons of the metabolic intensities at heart rate, gas exchange, and ventilatory thresholds. *International Journal of Exercise Science*, 13(2): 455-469, 2020.
4. Dinyer, T.K., Byrd, M.T., Succi, P.J., and **Bergstrom, H.C.** The timecourse of changes in neuromuscular responses during the performance of leg extension repetitions to failure below and above critical resistance in women. *Journal of Strength and Conditioning Research*. Published-ahead-of-print, February, 2020.
5. **Bergstrom, H.C.**, Housh, T.J., Dinyer, T.K., Byrd, M.T., Jenkins, N.D.M., Cochrane-Snyman, K.C., Succi, P.J., Zuniga, J.M., Schmidt, R.J., and Johnson, G.O. Neuromuscular responses of the superficial quadriceps femoris muscles: Muscle specific fatigue and inter-individual variability during severe intensity treadmill running. *Journal of Musculoskeletal and Neuronal Interactions*. 3(1): 77-87, 2020.
6. Keeler, J.M., Pohl, M.B., **Bergstrom, H.C.**, Thomas, J.M., and Abel, M.G. The effects of tactical tasks and gear on muscle activation in swat officers. *Journal of Strength and Conditioning Research*, In Press, September 2019.
7. Lesniak, A., **Bergstrom, H.C.**, Clasey, J.L., Stromberg, A.J., and Abel, M.G. The effects of personal protective equipment on firefighter occupational performance. *Journal of Strength and Conditioning Research*, In Press, 2019.
8. Dinyer, T.K., Byrd, M.T., Vesotsky, A.N., Succi, P.J., Clasey, J.L., and **Bergstrom, H.C.** The sensitivity of the critical resistance model to detect sex-related differences in fatigue during submaximal muscular contractions. *Journal of Science in Sport and Exercise*. In Press, June, 2019.
9. Dinyer, T.K., Byrd, M.T., Garver, M.J., Rickard, A.J., Miller, W., Burns, S., and **Bergstrom, H.C.** Low-intensity versus high-intensity resistance training to failure on one-repetition maximum strength and body composition in untrained females. *Journal of Strength and Conditioning Research*, 33(7): 1737-1744. 2019.
10. Dinyer, T.K., Byrd, M.T., Cochrane-Snyman, K.C., Jenkins, N.D.M., Housh, T.J., Schmidt, R.J., Johnson, G.O., and **Bergstrom, H.C.** Time course of changes in neuromuscular responses during rides to exhaustion above and below critical power. *Journal of Musculoskeletal and Neuronal Interactions*, 19(3): 266-275, 2019.
11. Dinyer, T.K., Byrd, M.T., Vesotsky, A.N., Succi, P.J., and **Bergstrom, H.C.** Applying the critical power model to a full body resistance training movement. *International Journal of Sport Physiology and Performance*. Epub ahead of print. 10: 1-7, 2019.
12. Herbe, C.T., Byrd, M.T., Dinyer, T.K., Wallace, B.J., and **Bergstrom, H.C.** The effects of pre-workout supplementation on anaerobic power and maintenance of power in college students. *International Journal of Exercise Science*, 12(2): 355-365, 2019.
13. Beyer, K.S., Stout, J.R., Redd, M.J., Baker, K.M., **Bergstrom, H.C.**, Hoffman, J.R., Fukuda, D.H. Maturity-related differences in systemic and localized fatigue thresholds among adolescent male athletes. *Pediatric Exercise Science*, 31(1): 99-106, 2019.

14. Byrd, M.T., Wallace, B.J., Clasey, J.L., and **Bergstrom, H.C.** Contributions of lower body strength parameters to critical power and anaerobic work capacity. *Journal of Strength and Conditioning Research*, Published Ahead of Print, February, 2018.
15. Byrd, M.T., Dinyer, T.K., and **Bergstrom, H.C.** Sex comparisons for very short-term dynamic constant external resistance training. *Journal of Functional Morphology and Kinesiology*, 3(4): 50, 2018.
16. Byrd, M.T., and **Bergstrom, H.C.** Effects of very short-term dynamic constant external resistance exercise on strength and barbell velocity in untrained individuals. *International Journal of Exercise Science*, 11(1):867-874, 2018.
17. Keller, J.L., Housh, T.J., Herda, T.J., Zuniga, J.M., Camic, C.L., **Bergstrom, H.C.**, Smith, D.B., Weir, J.P., Smith, C.M., Hill, E.C., Schmidt, R.J., and Johnson, G.O. The effects of epoch length on time and frequency domain parameters of electromyographic and mechanomyographic signals. *Journal of Electromyography and Kinesiology*, 40:88-94, 2018.
18. Schulte, M., Clasey, J.L., Flenor, B., and **Bergstrom, H.C.** Examination of resistance settings based on body weight for the 3-min all-out critical power test. *International Journal of Exercise Science* 11(4): 585–597, 2018.
19. Wallace, B.J., **Bergstrom, H.C.**, and Butterfield, T.A. Brief Review: Muscular basis of variable resistance efficacy. *International Journal of Sports Science and Coaching*. 13(6): 1177-1188, 2018.
20. **Bergstrom, H.C.**, Byrd, M.T., Wallace, B.J., and Clasey, J.L. Examination of a multi-ingredient pre-workout supplement on total volume of resistance exercise and subsequent strength and power performance. *Journal of Strength and Conditioning Research*, 32(6):1479-1490, 2018.
21. Byrd, M.T., Switalla, J.R., Clasey, J.L., Wallace, B.J., and **Bergstrom, H.C.** Contributions of body composition characteristics to critical power and anaerobic work capacity. *International Journal of Sports Physiology and Performance*, 13(2):189-193. 2018.
22. **Bergstrom, H.C.**, Housh, T.J., Cochrane, K.C., Jenkins, N.D.M., Byrd, M.T., Schmidt, R.J., and Johnson, G.O. A model for identifying intensity zones above critical velocity. *Journal of Strength and Conditioning Research*, 31(12): 3260-3265, 2017.
23. Switalla, J.R., Byrd, M.T., Abel, M.G., Fleenor, B., and **Bergstrom, H.C.** Can experienced runners accurately estimate performance capabilities to derive the parameters of the critical velocity model? *International Journal of Physical Education, Health and Sports*, 4(2): 204-209, 2017.
24. Brim III, H.H., Abel, M.G., Wallace, B.J., Byrd, M.T., Eastman, J.E., and **Bergstrom, H.C.** Can critical velocity and anaerobic swimming capacity be determined from estimated performance times in collegiate swimmers? *Journal of Exercise Physiology online*, 20(1): 23-32, 2017.
25. Smith, C.M., Housh, T.J., Zuniga, J.M., Camic, C.L., **Bergstrom, H.C.**, Smith, D.B., Herda, T.J., Weir, J.P., Hill, E.C., Cochrane, K.C., Jenkins, N.D.M., Schmidt, R.J., and Johnson, G.O. Influences of interelectrode distance and the innervation zone on electromyographic signals. *International Journal of Sports Medicine*. 38(2): 111-117, 2017.
26. Smith, C.M., Housh, T.J., Herda, T.J., Zuniga, J.M., Camic, C.L., **Bergstrom, H.C.**, Smith, D.B., Weir, J.P., Cramer, J.T., Hill, E.C., Cochrane, K.C., Jenkins, N.D.M., Schmidt, R.J., and Johnson, G.O. Time course of changes in neuromuscular parameters during sustained isometric muscle actions. *Journal of Strength and Conditioning Research*. 30(10): 2697-2702, 2016.
27. Jenkins, N.D.M., Housh, T.J., Buckner, S.L., **Bergstrom, H.C.**, Smith, C.M., Cochrane, K.C., Hill, E.C., Miramonti, A. Schmidt, R.J., Johnson, G.O., and Cramer, J.T. Four weeks of high- versus low-load resistance

training to failure on the rate of torque development, electromechanical delay, and contractile twitch properties. *Journal of Musculoskeletal and Neuronal Interactions*. 16(2): 135-144, 2016.

28. Jenkins, N.D.M., Housh, T.J., Buckner, S.L., **Bergstrom, H.C.**, Cochrane, K.C., Hill, E.C., Smith, C.M., and Cramer, J.T. Neuromuscular adaptations after 2- and 4-weeks of 80% versus 30% 1RM resistance training to failure. *Journal of Strength and Conditioning Research*. 30(8): 2174-2185, 2016.
29. Smith, C.M., Housh, T.J., Herda, T.J., Zuniga, J.M., Ryan, E.D., Camic, C.L., **Bergstrom, H.C.**, Smith, D.B., Weir, J.P., Cramer, J.T., Hill, E.C., Cochrane, K.C., Jenkins, N.D.M, Schmidt, R.J, and Johnson, G.O. Electromyographic Responses from the Vastus Medialis during Isometric Muscle Actions. *International Journal of Sports Medicine*. 37(8): 647-652, 2016.
30. Jenkins, N.D.M., Housh, T.J., Buckner, S.L., **Bergstrom, H.C.**, Cochrane, K.C., Hill, E.C., Smith, C.M., Schmidt, R.J., Johnson, G.O., and Cramer, J.T. Individual responses for muscle activation, repetitions, and volume during 3 sets to failure of high- (80% 1RM) versus low-load (30% 1RM) forearm flexion resistance exercise. *Sports*. 3(4): 269-280, 2015.
31. **Bergstrom, H.C.**, Housh, T.J., Cochrane, K.C., Jenkins, N.D.M., Buckner, S.L., Goldsmith, J.A., Zuniga, J.M., Schmidt, R.J., Johnson, G.O., and Cramer, J.T. Factors underlying the perception of effort during treadmill running above and below the critical heart rate. *European Journal of Applied Physiology*. 115(10): 2231-2241, 2015. DOI: 10.1007/s00421-015-32014-y.
32. Cochrane, K.C., Housh, T.J., Jenkins, N.D.M., **Bergstrom, H.C.**, Smith, C.M., Hill, E.C., Johnson, G.O., Schmidt, R.J., and Cramer, J.T. Electromyographic, mechanomyographic, and metabolic responses during cycle ergometry at a constant rating of perceived exertion. *Applied Physiology, Nutrition, and Metabolism*. 40(11): 1178-1185, 2015.
33. Jenkins, N.D.M., Housh, T.J., **Bergstrom, H.C.**, Cochrane, K.C., Hill, E.C., Smith, C.M., Johnson, G.O., and Schmidt, R.J. Muscle activation during three sets to failure at 80% vs. 30% 1RM resistance exercise. *European Journal of Exercise Physiology*. 115(11):2335-2347, 2015.
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35. Smith, C.M., Housh, T.J., Herda, T.J., Zuniga, J.M., Ryan, E.D., Camic, C.L., **Bergstrom, H.C.**, Smith, D.B., Weir, J.P., Cramer, J.T., Hill, E.C., Cochrane, K.C., Jenkins, N.D.M, Schmidt, R.J, and Johnson, G.O. Effects of the innervation zone on the time and frequency domain parameters of the surface electromyographic signal. *Journal of Electromyography and Kinesiology*. 25(4): 565-570, 2015.
36. Herda, T.J, Zuniga, J.M., Ryan, E.D., Camic, C.L., **Bergstrom, H.C.**, Smith, D.S., Weir, J.P., Cramer, J.T., and Housh, T.J. The influence of electromyographic recording methods and the innervation zone on the mean power frequency-torque relationships. *Journal of Electromyography and Kinesiology*. 25(3): 423-430, 2015.
37. Jenkins, N.D.M., Miller, J.M., Cochrane, K.C., **Bergstrom, H.C.**, Hill, E.C., Smith, C.M. Housh T.J., and Cramer, J.T. Test-retest reliability of single transverse versus panoramic ultrasound imaging for muscle size and echo intensity of the biceps brachii. *Ultrasound in Medicine and Biology*. 41(6): 1584-1591, 2015.
38. Cochrane, K.C., Housh, T.J., **Bergstrom, H.C.**, Jenkins, N.D.M., Johnson, G.O., Schmidt, R.J., and Cramer, J.T. Physiological responses during cycle ergometry at a constant perception of effort. *International Journal of Sports Medicine*. 36: 466-473, 2015.
39. Cochrane, K.C., Housh, T.J., **Bergstrom, H.C.**, Jenkins, N.D.M., Johnson, G.O., Housh, D.J., Traylor, D.A., Lewis, Jr., R.W., Schmidt, R.J., and Cramer, J.T. Dissociations among direct and indirect indicators of adiposity in young wrestlers. *Journal of Strength and Conditioning Research*, 29(2): 408-415, 2015.

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41. **Bergstrom, H.C.**, Housh, T.J., Traylor, D.A., Lewis, Jr., R.W., Cochrane, K.C., Jenkins, N.D.M, Schmidt, R.J., Johnson, G.O., Housh, D.J., and Cramer, J.T. Metabolic, cardiovascular, and perceptual responses to a thermogenic nutritional supplement at rest, during exercise, and recovery in men. *Journal of Strength and Conditioning Research*. 28(8): 2154-2163, 2014.
42. Cochrane, K.C., Housh, T.J., **Bergstrom, H.C.**, Jenkins, N.D.M., Johnson, G.O., Schmidt, R.J., and Cramer, J.T. Perceptual and physiological fatigue thresholds during cycle ergometry. *Journal of Exercise Physiologyonline*, 17(5): 95-107, 2014.
43. Jenkins, N.D.M., Buckner, S.L., Goldsmith, J.A., **Bergstrom, H.C.**, Cochrane, K.C., Housh, T.J., Johnson, G.O., Schmidt, R.J., and Cramer, J.T. Reliability and relationships among handgrip strength, leg extensor strength, and balance in older men. *Experimental Gerontology*, 58C: 47-50, 2014.
44. Jenkins, N.D.M., Buckner, S.L., Cochrane, K.C., **Bergstrom, H.C.**, Goldsmith, J.A., Weir, J.P., Housh, T.J., and Cramer, J.T. CLA supplementation and aerobic exercise lower blood triacylglycerol, but have no effect on peak oxygen uptake or cardiorespiratory fatigue threshold. *Lipids*, 49(9): 871-880, 2014.
45. Jenkins, N.D.M., Housh, T.J., Traylor, D.A., Cochrane, K.C., **Bergstrom, H.C.**, Lewis, Jr., R.W., Schmidt, R.J., Johnson, G.O., and Cramer, J.T. The rate of torque development: A unique, non-invasive indicator of eccentric-induced muscle damage? *International Journal of Sports Medicine*. 35(14):1190-1195, 2014.
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51. Traylor, D.A., Housh, T.J., Lewis, Jr., R.W., **Bergstrom, H.C.**, Cochrane, N.D.M Jenkins, R.J. Schmidt, G.O. Johnson, J.T. Cramer. The effects of gender and very short-term resistance training on peak torque, average power, and neuromuscular responses of the forearm flexors. *Isokinetics and Exercise Science*, 22: 123-130, 2014.
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#### MANUSCRIPTS IN REVIEW

1. Dinyer, T.K., Byrd, M.T., Vesotsky, A.N., Succi, P.J., and **Bergstrom, H.C.** Linear and nonlinear modeling of critical resistance. *Journal of Strength and Conditioning Research*. April 2020.
2. Moss, A.C., Dinyer, T.K., Abel, M.G., **Bergstrom, H.C.** Methodological considerations for the determination of the critical load for the deadlift. *Journal of Strength and Conditioning Research*. April 2020.
3. Dinyer, T.K., Byrd, M.T., Succi, P.J., Souci, E.P., Voskuil, C.C., **Bergstrom, H.C.** Muscular performance and neuromuscular fatigue are not sex-dependent during low-load fatiguing leg extension exercise. *Applied Physiology, Nutrition, and Metabolism*. April 2020.

4. Herrick, L.P., Goh, J., Menke, W., Campbell, M.S., Fleener, B.S., Abel, M.G., **Bergstrom, H.C.** The effects of curcumin and fenugreek soluble fiber on the physical working capacity at the fatigue threshold, peak oxygen consumption, and time to exhaustion. *Journal of Strength and Conditioning Research*, March 2020.
5. Goh, J., Menke, W., Herrick, L.P., Campbell, M.S., Fleener, B.S., Abel, M.G., **Bergstrom, H.C.** Effects of curcumin and fenugreek soluble fiber supplementation on submaximal and maximal aerobic indices. *Journal of Functional Morphology and Kinesiology*. January 2020.

### **ABSTRACTS AND PRESENTATIONS AT NATIONAL PROFESSIONAL MEETINGS**

1. Succi, P.J., Dinyer, T.K., Byrd, M.T., Souci, E.P., Voskuil, C.C., and **Bergstrom, H.C.** Comparison of the critical VO<sub>2</sub> to ventilatory thresholds and critical power. (Accepted for presentation at the National Strength and Conditioning Association Annual Convention, 2020, Las Vegas, NV).
2. Dinyer, T.K., Succi, P.J., Byrd, M.T., Voskuil, C.C., Souci, E.P., and **Bergstrom, H.C.** Acute neuromuscular responses do not differ between 50% and 80% one-repetition maximum fatiguing leg extension exercise. (Accepted for presentation at the National Strength and Conditioning Association Annual Convention, 2020, Las Vegas, NV).
3. Voskuil, C.C., Dinyer, T.K., Succi, P.J., Byrd, M.T., Garver, M.J., Rickard, A.J., Burns, S., Souci, E.P., and **Bergstrom, H.C.** Acute and early-phase perceptual responses to 30% one repetition maximum trianing to failure in untrained women. (Accepted for presentation at the National Strength and Conditioning Association Annual Convention, 2020, Las Vegas, NV).
4. Souci, E.P., Dinyer, T.K., Byrd, M.T., Succi, P.J., Clasey, J.L., and **Bergstrom, H.C.** Contributions of maximal strength and body composition characteristics to resistance exercise performance at critical resistance. (Accepted for presentation at the National Strength and Conditioning Association Annual Convention, 2020, Las Vegas, NV).
5. Byrd, M.T., Dinyer, T.K., Succi, P.J., and **Bergstrom, H.C.** Neuromuscular responses in unilateral strength discrepancies within the lower limb bilateral deficit. (Presented at the National Strength and Conditioning Association Annual Convention, 2019, Washington D.C.).
6. Dinyer, T.K., Byrd, M.T., Vesotsky, A.N., Succi, P.J., and **Bergstrom, H.C.** Sex related differences in percent of one-repetition maximum and repetitions completed at critical resistance. (Presented at the National Strength and Conditioning Association Annual Convention, 2019, Washington D.C.).
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62. **Bergstrom, H.C.**, Zuniga, J.M., Housh, T.J., Camic, C.L., Hendrix, C.R., Johnson, G.O., and Schmidt, R.J. The relationship between skinfold thickness and the amplitude and frequency domains of the surface electromyographic signal during cycle ergometry. (Presented at the National Strength and Conditioning Association Annual Convention, 2010, Orlando, FL). <https://journals.lww.com/nsca-jscr>.
63. Zuniga, J.M., Housh, T.J., Camic, C.L., Hendrix, C.R., **Bergstrom, H.C.**, Johnson, G.O., and Schmidt, R.J. The relationship between skinfold thickness and mechanomyography at different locations on the vastus lateralis during incremental cycle ergometry. (Presented at the National Strength and Conditioning Association Annual Convention, 2010, Orlando, FL). <https://journals.lww.com/nsca-jscr>.
64. Camic, C.L., Housh, T.J., Zuniga, J.M., Hendrix, C.R., **Bergstrom, H.C.**, Johnson, G.O., Schmidt, R.J., and Housh, D.J. The influence of electrode placement on the physical working capacity at the fatigue threshold. (Presented at the National Strength and Conditioning Association Annual Convention, 2010, Orlando, FL). <https://journals.lww.com/nsca-jscr>.

## **ABSTRACTS AND PRESENTATIONS AT REGIONAL PROFESSIONAL MEETINGS**

65. Dinyer, T.K., Byrd, M.T., Succi, P.J., Voskuil, C.C., and **Bergstrom, H.C.** Sex-related differences in neuromuscular responses during exercise performed below and above critical resistance. (Presented at the Southeast American College of Sports Medicine Regional Chapter Convention, 2020, Jacksonville, FL).
66. Succi, P.J., Dinyer, T.K., Byrd, M.T., Voskuil, C.C., and **Bergstrom, H.C.** Reliability of the determination of critical heart rate. (Presented at the Southeast American College of Sports Medicine Regional Chapter Convention, 2020, Jacksonville, FL).
67. Voskuil, C.C., Dinyer, T.K., Byrd, M.T., Vesotsky, A.N., Succi, P.J., and **Bergstrom, H.C.** Linear and nonlinear modeling of critical resistance. (Presented at the Southeast American College of Sports Medicine Regional Chapter Convention, 2020, Jacksonville, FL).
68. Goh, J., Herrick, L.P., Menke, W., Campbell, M.S., Fleenor, B.S., Abel, M.G., and **Bergstrom, H.C.** Effects of curcumin and fenugreek soluble fiber on the ventilatory threshold in untrained college students. (Presented at the Southeast American College of Sports Medicine Regional Chapter Convention, 2020, Jacksonville, FL).
69. Herrick, L.P., Goh, J., Menke, W., Campbell, M.S., Fleenor, B.S., Abel, M.G., and **Bergstrom, H.C.** Effects of curcumin and fenugreek soluble fiber on the physical working capacity at the fatigue threshold. (Presented at the Southeast American College of Sports Medicine Regional Chapter Convention, 2020, Jacksonville, FL).
70. Byrd, M.T., Dinyer, T.K., Succi, P.J., and **Bergstrom, H.C.** Neuromuscular responses in lower limb bilateral deficit. (Presented at the Southeast American College of Sports Medicine Regional Chapter Convention, 2019, Greenville, SC).
71. Dinyer, T.K., Byrd, M.T., Succi, P.J., and **Bergstrom, H.C.** Identifying the critical resistance for the deadlift. (Presented at the Southeast American College of Sports Medicine Regional Chapter Convention, 2019, Greenville, SC).
72. Succi, P.J., Dinyer, T.K., Byrd, M.T., and **Bergstrom, H.C.** Comparison of the critical heart rate to heart rates at critical velocity and ventilatory threshold (Presented at the Southeast American College of Sports Medicine Regional Chapter Convention, 2019, Greenville, SC).
73. Byrd, M.T., and **Bergstrom, H.C.** Gender comparisons for very short-term dynamic constant external resistance training. (Presented at the Southeast American College of Sports Medicine Regional Chapter Convention, 2018, Chattanooga, TN).
74. Dinyer, T.K., Garver, M.J., Rickard, A.J., Miller, W., Burns, S., and **Bergstrom, H.C.** Low intensity resistance training to failure on 1RM strength in untrained females. (Presented at the Southeast American College of Sports Medicine Regional Chapter Convention, 2018, Chattanooga, TN).
75. Lesniak, A., **Bergstrom, H.C.**, Clasey, J.L., Stromber, M., and Abel, A.G. The effect of personal protective equipment on firefighter occupational performance. (Presented at the Southeast American College of Sports Medicine Regional Chapter Convention, 2018, Chattanooga, TN).
76. Schulte, M.J., Clasey, J.L., Fleenor, B.S., and **Bergstrom, H.C.** Examination of resistance settings based on body weight for the 3-min all-out critical power test. (Presented at the Southeast American College of Sports Medicine Regional Convention, 2017, Greenville, SC).
77. Byrd, T.M., Wallace, B.J., Clasey, J.L., and **Bergstrom, H.C.** Acute effects of a pre-workout supplement on resistance training volume and the subsequent strength and power performance. (Presented at the Southeast American College of Sports Medicine Regional Convention, 2017, Greenville, SC).
78. Byrd, M.T., Lane, M.T., **Bergstrom, H.C.** A pre-workout supplement and high intensity cycle ergometry

performance in recreationally trained men. (Presented at the Southeast American College of Sports Medicine Regional Convention, 2016, Greenville, SC).

79. Cochrane, K.C., Housh, T.J., **Bergstrom, H.C.**, Jenkins, N.D.M., Cramer, J.T., Johnson, G.O., and Schmidt, R.J. Comparison of perceptual and physiological fatigue thresholds during cycle ergometry. October 2013. (Presented at the Southwest American College of Sports Medicine Annual Convention in Newport Beach, California).
80. **Bergstrom, H.C.**, Housh, T.J., Traylor, D.A., Lewis Jr., R.W., Johnson, G.O., Schmidt, R.J., and Housh, D.J. Physiological responses to a thermogenic nutritional supplement during rest, low-intensity exercise, and recovery. October 2012. (Presented at the Southwest American College of Sports Medicine Annual Convention in Newport Beach, California)

### **ABSTRACTS AND PRESENTATIONS AT STATE AND LOCAL PROFESSIONAL MEETINGS**

81. Byrd, M.T., Dinyer, T.K., Succi, P.J., and **Bergstrom, H.C.** An examination of the effects of bilateral and unilateral very short-term DCER training on neuromuscular responses within the lower limb bilateral deficit. Spring Research Conference, 2019, Lexington, KY.
82. Succi, P.J., Dinyer, T.K., Byrd, M.T., and **Bergstrom, H.C.** Comparison of the times to exhaustion and physiological responses at constant heart rate vs constant power output exercise. Spring Research Conference, 2019, Lexington, KY
83. Dinyer, T.K., Byrd, M.T., Succi, P.J., and **Bergstrom, H.C.** Theoretical model for using critical resistance to prescribe low-load training. Spring Research Conference, 2019, Lexington, KY.
84. Byrd, M.T., Eastman, J.E., and **Bergstrom, H.C.** Application of the very short-term training model to dynamic constant external resistance exercise. Kentucky State National Strength and Conditioning Clinic, 2017, Georgetown, KY.

### **INVITED PRESENTATIONS**

“Examination of Intensity-, Mode-, and Sex-Specific Fatigue During Resistance Exercise.” Carlos Wear Lectureship, 2020, University of Nebraska-Lincoln, Lincoln, NE.

“Historical basis and evolution of the critical power concept.” Critical power: Unlocking the limits of human performance, Symposium, 2018, Provo, NV.

“Nutritional considerations before and after high intensity interval training in men and women” National Strength and Conditioning Association National Convention, 2017, Las Vegas, NV.

“The examination of the methodologies and mechanisms underlying fatigue thresholds” Exercise Science Seminar Series. University of Kentucky, Department of Kinesiology and Health Promotion. September, 2014, Lexington, KY.

“The effects of protein supplementation on strength and protein synthesis” National Strength and Conditioning Association National Convention, 2013, Las Vegas, NV.

## **BOOK CHAPTERS**

Bergstrom, H.C. Resting and Exercise Electrocardiogram. In: Housh, T. J., Cramer, J.T., Weir, J.P., Beck, T.W., and Johnson, G.O. *Laboratory Manual for Exercise Physiology, Exercise Testing, and Physical Fitness*. Scottsdale, AZ: Holcomb Hathaway Publishers, 2016. p. 21-32.

Bergstrom, H.C. Gas Exchange Threshold, Ventilatory Threshold, and Respiratory Compensation Point. In: Housh, T. J., Cramer, J.T., Weir, J.P., Beck, T.W., and Johnson, G.O. *Laboratory Manual for Exercise Physiology, Exercise Testing, and Physical Fitness*. Scottsdale, AZ: Holcomb Hathaway Publishers, 2016. p. 102-110.

Bergstrom, H.C. Critical Power 3-Min All-Out Test. In: Housh, T. J., Cramer, J.T., Weir, J.P., Beck, T.W., and Johnson, G.O. *Laboratory Manual for Exercise Physiology, Exercise Testing, and Physical Fitness*. Scottsdale, AZ: Holcomb Hathaway Publishers, 2016. p. 125-134.

## **DOCTORAL STUDENT COMMITTEES**

Fall 2019 Travis Byrd Dissertation: An Examination of the Effects of Bilateral and Unilateral Very Short-Term DCER Training on Strength and Neuromuscular Responses within the Lower Limb Bilateral Deficit (Co-Chair)

Fall 2017 Ashley Lesniak – Dissertation: The Effect of External Stressors on Firefighter Performance (Committee Member)

Spring 2017 Kyle S. Beyer – Dissertation: “The effects of interval training and maturity status on metabolic and neuromuscular fatigue thresholds in adolescents” (Committee Member)

## **DOCTORAL STUDENT COMMITTEES IN PROGRESS**

Taylor Dinyer (Anticipated Graduation Spring 2021) – Area of Study: Mathematical modeling and the examination of neuromuscular fatigue during resistance exercises (Chair)

## **MASTER’S STUDENT THESIS COMMITTEES**

Spring 2020 Alexander Moss, *Methodological considerations for the determination of the critical resistance*, Graduation: May 2020. (Chair)

Fall 2019 Jesen Goh, *Effects of curcumin and fenugreek soluble fiber supplementation on submaximal and maximal aerobic performance indices in untrained college college-aged subjects*, Anticipated Graduation: December 2019. (Chair)

Fall 2019 Lauren Herrick, *Effects of curcumin supplementation on the physical working capacity at the fatigue threshold, peak oxygen consumption, and time to exhaustion*. Anticipated Graduation: August 2019. (Chair)

Fall 2019 Isabelle Gillis, *Longitudinal descriptive profile of collegiate pitchers participation in a summer baseball league*, Anticipated Graduation: December 2019. (Committee Member)

Fall 2017 Tyler Lindon, *Examination of volume and intensities of weekday practices and competitive games in collegiate football players*, Graduation: December 2017. (Chair)

Fall 2016 Howard Brim III, *A non-exercise based estimation of the critical swimming velocity and anaerobic work capacity in collegiate swimmers*, Graduation: December 2016 (Chair)



- Fall 2016 Jonathan Robert Switalla, *A non-exercise based estimation of the critical running velocity and anaerobic running capacity in competitive runners*, Graduation: December 2016 (Chair)
- August 2016 Marlene (Nall) Schulte, *Examination of resistance settings based on body weight for the 3-min all-out critical power test*, Graduation: August, 2016 (Chair)
- Fall 2014 Jason M. Keeler, *The effect of tactile task and gear on muscle activation of swat officers*. Graduation: December 2014. (Committee Member)

### **MASTER'S STUDENT THESIS COMMITTEES IN PROGRESS**

Pasquale J. Succi, *Comparisons of the time to exhaustion, physiological, perceptual, and neuromuscular responses during cycle ergometry anchored by heart,  $\dot{V}O_2$ , and power output*, Anticipated Graduation: December 2020. (Chair)

### **MASTER'S STUDENT COMMITTEES: NON-THESIS**

- Spring 2020 Zoe Schrader (Committee Member)
- Fall 2018 Dillon Haughton (Committee Member)
- Spring 2018 Christine Herbe (Chair)
- Spring 2018 Kathleen Schlouch (Chair)
- Spring 2018 Dominique Martin (Committee Member)
- Spring 2017 Aaron Gillette (Chair)
- Spring 2017 Joe Arata (Committee Member)
- Spring 2017 Annie Allen (Committee Member)
- Fall 2016 Carlos Sierra (Committee Member)
- Fall 2016 Stephanie Simpson (Committee Member)
- Fall 2016 Matthew Stockwell (Committee Member)
- Fall 2016 Alyssa Rohrbaugh (Committee Member)
- Spring 2016 Nicole McCullough (Chair)
- Spring 2016 Jeremy Paprocki (Committee Member)
- Spring 2016 Tyler Donald (Committee Member)
- Spring 2016 Katie White (Committee Member)

### **EXTERNAL FUNDING**

- 2015 (Fall) Principal Investigator – \$35,000. *Acute effects of a pre-workout supplement on total upper and lower body resistance training volume and subsequent strength, power, and anaerobic endurance performance*. MusclePharm Corporation, Denver, Colorado. Co-Principal Investigator: Brian Wallace, PhD).
- 2015 (Spring) Co-Investigator (effort 50%) - \$2,500. *Effects of MusclePharm Assault<sup>TM</sup> on spinal excitability and postactivation potentiation of the triceps surae*. ISSN-MusclePharm. (Principle Investigator: Brian Wallace, PhD).
- 2013 (Fall) Principal Investigator (effort 50%) – \$10,000. *Physiological responses at the critical heart rate during treadmill running*. National Strength and Conditioning Association Doctoral Student Research Grant.
- 2013 (Fall) Co-Investigator (effort 20%) – \$339,566. *Effects of conjugated linoleic acid on performance*. Stepan Lipid Nutrition. (Principal Investigator, Joel T. Cramer, PhD and Co-Principal Investigator: Terry J. Housh, PhD).
- 2013 (Fall) Co-Investigator (effort 20%) - \$99,600. *The effects of two forms of leucine and two forms of creatine on leucine and creatine bioavailability*. General Nutrition Corporation, Pittsburgh,

Pennsylvania. (Principal Investigator: Terry J. Housh, PhD and Co-Principal Investigator: Joel T. Cramer, PhD).

- 2012 (Fall) Co-Investigator (effort 20%) – \$377,456 *The effects of the dietary supplement anatabine on delayed onset muscle soreness in the forearm flexors.* Rock Creek Pharmaceuticals. (awarded RCP-011; Principal Investigator: Joel T. Cramer, PhD and Co-Principal Investigator: Terry J. Housh, PhD).
- 2012 (Spring) Co-Investigator and Study Coordinator (effort 50%) – \$99,600. *The effects of a dietary supplement on energy expenditure before, during, and following low intensity exercise.* General Nutrition Corporation, Pittsburgh, Pennsylvania, (awarded, GNC-2012-004; Principal Investigator: Terry J. Housh, PhD).
- 2011 (Fall) Co-Investigator (effort 20%) – \$99,840, *The effects of creatine supplementation on exercise performance and lean body mass while consuming an enteric coated tablet.* General Nutrition Corporation, Pittsburgh, Pennsylvania, (awarded, GNC-2011-002; Principal Investigator: Terry J. Housh, PhD).

### **EXTERNAL FUNDING REQUESTS (not funded)**

- 2019 (Spring) Co-Investigator – \$14,839 “*A theoretical model for using critical resistance to prescribe low-load training.*” National Strength and Conditioning Association Foundation. Doctoral Student Grant.
- 2019 (Spring) Principal Investigator - \$19,560. *Time course of changes in physiological and perceptual responses during constant heart rate versus constant power output exercise.* National Strength and Conditioning Association Foundation. Young Investigator Grant.
- 2018 (Spring) Principal Investigator - \$21,204. *Motor control strategies above and below the critical resistance threshold.* National Strength and Conditioning Association Foundation. Young Investigator Grant.
- 2018 (Spring) Co-Investigator - \$15,000. *Effects of unilateral versus bilateral short-term DCER training on the bilateral deficit.* Strength and Conditioning Association Foundation. Doctoral Student Grant.
- 2018 (Summer) Co-Investigator - \$10,000. *Effect of DCER training on the bilateral deficit and cross-education of the lower limbs.* De Luca Foundation.
- 2017 (Spring) Principal Investigator - \$20,000. *Salivary hormone and immune responses to a HIIT microcycle.* National Strength and Conditioning Association Foundation. Young Investigator Grant.
- 2016 (Fall) Principal Investigator (effort 50%) – \$20,000. Not funded. *Physiological and perceptual responses to five running paces used for endurance training.* National Strength and Conditioning Association, Young Investigators Grant.
- 2014 (Fall) Co-Principal Investigator (effort 50%) – \$23,400. Not funded. *The effects of the TITIN Force Shirt System on Anaerobic and Aerobic Performance Parameters.* Titintech. (Co-Principle Investigator: Brian Wallace).

## **INTERNAL FUNDING**

- 2019 (Summer)      Principal Investigator - \$7,500. *Defining exercise intensity domains for resistance training modalities*. College of Education: Summer Support Grant, Type I.
- 2018 (Summer)      Principal Investigator - \$4,480. *Neuromuscular responses above and below the critical resistance threshold*. College of Education: Summer Support Grant, Type I.

## **INTERNAL FUNDING REQUESTS (not funded)**

- 2017 (Fall)            Principal Investigator - \$20,000. *Salivary hormone and immune responses to a HIIT microcycle*. University of Kentucky, Center for Clinical and Translational Science. Pilot Grant.
- 2017 (Summer)       Principal Investigator - \$7,500. *Physiological and perceptual responses to five running paces used for endurance training*. College of Education: Summer Support Grant, Type I.
- 2017 (Spring)        Principal Investigator - \$10,000. Proposed study, *Examination of the bilateral deficit and cross-education effect after very-short term resistance training*. Research Professorship.
- 2015 (Summer)       Principle Investigator – \$7,500. *Reliability and validity of heart rate and neuromuscular based fatigue thresholds*. VPR Summer Faculty Research Fellowship.

## **EQUIPMENT FUNDING REQUESTS (in review)**

- Fall 2019             Principal Investigator - \$52,925. Biodex System Pro 4 Isokinetic Dynamometer. *VPR Minor Equipment Competition*

## **EQUIPMENT FUNDING REQUESTS (not funded)**

- Fall 2017             Principal Investigator - \$49,575. Biodex System Pro 4 Isokinetic Dynamometer. *VPR Minor Equipment Competition*
- Spring 2017         Principal Investigator - \$49,575. Biodex System Pro 4 Isokinetic Dynamometer. *VPR Minor Equipment Competition*

## **SERVICE TO THE UNIVERSITY**

- 2019 (Fall)            Center for Clinical and Translational Sciences (CCTS) – Pilot Funding Program. Reviewed full application for one applicant.
- 2019 (Fall)            Center for Clinical and Translational Sciences (CCTS) – Pilot Funding Program. Reviewed Letter of Intent for two applicants.
- 2019 (Summer)        University of Kentucky STEM Experiences - Human Performance Session.
- 2015 (Spring-Fall)    First Scholars Program, Academy for undergraduate excellence. Mentor

## **SERVICE TO THE COLLEGE**

- 2015 (Fall - current)    College Research Advisory Committee

2014 (Fall) College Work Groups - Group Forum – Student Achievement Subcommittee – Graduate Student Retention

### **SERVICE TO THE DEPARTMENT**

2019 (Fall) Undergraduate Certificate in Nutrition for Human Performance, Co-Director (3 year term)

2019 (Spring) Needs Report on Laboratory Space and Preparation of Exercise Science Students, Data collection, data compilation, collaborative writing effort.

2017 – 2019 Undergraduate Certificate in Nutrition for Human Performance, Advisory board member

2016 (Summer) Search committee for a full-time lecturer. Committee member

2016- current National Strength and Conditioning Association Education Recognition Program. Director at the University of Kentucky

2014 - current Annual Student Learning Outcomes Report for the Bachelor’s Exercise Science Program. University of Kentucky, Department of Kinesiology and Health Promotion. Helps the Department and UK adhere to the Kentucky Common Core.

2014 (Fall) Exercise Science curriculum committee – Fall 2014  
University of Kentucky, Department of Kinesiology and Health Promotion

### **SERVICE TO THE PROFESSION**

#### **Editorial Appointments:**

- Senior Associate Editor, Journal of Strength and Conditioning Research (January 2017 – current)
- Associate Editor, Journal of Strength and Conditioning Research (September 2015 – January 2017)

#### **Manuscript Reviewer (~ number per year):**

- Journal of Strength and Conditioning Research (4-6)
- European Journal of Applied Physiology (2-3)
- Research Quarterly for Exercise and Sport Journal (2-3)
- Journal of Musculoskeletal and Neuronal Interactions (2)
- Applied Physiology Nutrition and Metabolism (1-2)
- International Journal of Sports Medicine (1-2)
- Muscle and Nerve (1-2)
- Journal of Sports Sciences (1)
- Clinical Physiology and Functional Imaging (1)
- International Journal of Sports Physiology and Performance (1)
- Journal of Sports Science and Medicine (1)
- Journal of Visualized Experiments (1)
- Scandinavian Journal of Medicine and Science in Sports (1)
- Journal of Nature and Science
- Respiratory, Physiology, and Neurobiology (1)
- Journal of Applied Physiology (1)

## **Service to Professional Organizations**

- Judge, Rapid Research Run: Preconference session at the Southeast American College of Sports Medicine (February 2019)
- Reviewer, SEACSM 1<sup>st</sup> time student presenter support applications (January 2018)
- Abstract Reviewer, National Strength and Conditioning Association (2014-2020)
- Grant Reviewer, National Strength and Conditioning Association Foundation (2016 and 2019,2020)
- Abstract Reviewer, Southeast Chapter of the American College of Sports Medicine (2015-2018)
- Abstract Reviewer, Student Research Award Judge, National Strength and Conditioning National Conference (2015 and 2016)
- Moderator, Research Track Presentation, *Strength and Conditioning for Combat Athletes*, National Strength and Conditioning Conference (2015 and 2019)

## **HONORS AND AWARDS**

- Nominee: Albert D. and Elizabeth H. Kirwan Memorial Prize to recognize a full time faculty member at UK who is deemed to have made outstanding contributions to original research or (creative) scholarship within the last four academic years (2020)
- Recipient: Teacher Who Made a Difference (2019) *Recognized at the Teachers Who Made a Difference breakfast, sponsored by the University of Kentucky College of Education*
- Nominee: William B. Sturgill Award to recognize a graduate faculty member who has made outstanding contributions to graduate mentoring and graduate education at UK (2019)
- Recipient: National Strength and Conditioning Associations Doctoral Student Research Award for an Outstanding Poster Abstract Presentation at the National Conference (2014)
- Recipient: National Strength and Conditioning Associations Doctoral Student Research Award for an Outstanding Poster Abstract Presentation at the National Conference (2013)
- Recipient: National Strength and Conditioning Associations Doctoral Student Research Award for an Outstanding Poster Abstract Presentation at the National Conference (2012)
- Recipient: Othmer Fellowship (2011-2014)
- Recipient: Challenge Scholarship from the National Strength and Conditioning Association Foundation (2013)
- Recipient: Women's Scholarship from the National Strength and Conditioning Association Foundation (2012)

## **CERTIFICATIONS**

- National Strength and Conditioning Association – Certified Strength and Conditioning Specialist with distinction (CSCS\*D)
- American Red Cross – CPR/AED and First Aid

## **PROFESSIONAL MEMBERSHIPS**

- Member of the International Society of Sports Nutrition (ISSN), January, 2015 – current
- Member of the National Strength and Conditioning Association (NSCA), February, 2010 – current
- Member of the American College of Sports Medicine (ACSM), November, 2009 – current