

# Joshua L. Keller

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## EDUCATION:

- 2016 – 2020 UNIVERSITY OF NEBRASKA – LINCOLN  
Ph.D. Human Sciences, specialization: Exercise Physiology
- 2014 – 2016 UNIVERSITY OF DAYTON  
M.S.E. Exercise Science
- 2010 – 2014 UNIVERSITY OF CINCINNATI  
B.S. Health Sciences, specialization: Exercise & Movement

## PROFESSIONAL EXPERIENCE:

- 2020 – Present ASSISTANT PROFESSOR (tenure-track)
- University of South Alabama – Health, Kinesiology and Sport
  - Undergraduate curriculum: KIN 479 *Fitness Assessment and Exercise Prescription*, KIN 476 *Exercise Physiology*
  - Graduate curriculum: KIN 570 *Stress Testing-Ex Prescription*, KIN 540 *Cardiovascular Respiratory Adaptations to Exercise*
- 2016 – 2020 UNL DOCTORAL RESEARCH AND TEACHING ASSISTANT
- Under supervision of Terry Housh, Ph.D.
  - Course Instructor and Instructor of Record: NUTR 486/886, *Exercise Testing and Exercise Programming in Adult Fitness and Cardiac Rehabilitation*
  - Teaching Assistant: NUTR 486/886, *Exercise Testing and Exercise Programming in Adult Fitness and Cardiac Rehabilitation*, NUTR 484/884, *Physiology of Exercise*
- 2016 UC LABORATORY ASSISTANT
- College of Medicine, Department of Internal Medicine
  - Performed & evaluated basic science investigations
  - Prepared samples for flow cytometry
  - Under the supervision of Begoña Campos, Ph.D.
- 2014 – 2016 UD GRADUATE RESEARCH ASSISTANT
- Coordinated & lead projects within the Integrative Human Physiology Laboratory supervised by Anne Crecelius, Ph.D.
  - Mentored undergraduate students

## PROFESSIONAL CREDENTIALS:

- 2014 – Present Certified Strength and Conditioning Specialist, Recertified with Distinction (CSCS\*D) - National Strength & Conditioning Association
- 2016 – Present Certified Sports Nutritionist (CISSN) - International Society of Sport Nutrition

## PROFESSIONAL DEVELOPMENT:

2022	NIH Early Career Reviewer (ECR) program, Center for Scientific Review
2022	NIA Butler – Williams Scholar Program, Virtual
2022	NIA AA IMPACT-AD (U13AG067696) Fellowship Track, San Diego, CA
2022 – 2023	ASAPHERD – Member
2022	Addressing Health Disparities – Alzheimer’s Association, Washington D.C.
2022 – Present	Member – ISTAART, Alzheimer’s Association
2021 – Present	Generations Faculty Fellow: USA Programs in Gerontology
2021	Invited Speaker – NSCA GNC Sponsor Symposium, Orlando, FL†
2020	Invited Platform Presentation – Northland ACSM Chapter, St. Paul, MN †
2020	Invited Speaker – NSCA GNC Sponsor Symposium, Las Vegas, NV †
2019	Co-Chair - Ergogenic Aids Session; ACSM National Conference, Orlando, FL
2019	Invited Lecture – Sports Nutrition, University of Dayton
2019	Invited Speaker – NSCA GNC Sponsored Symposium, Washington D.C.
2018	Invited Speaker – NSCA GNC Sponsored Symposium, Indianapolis, IN
2018	Speaker – Data Blitz, ISSN, Clearwater, FL
2018 – Present	Member - European Congress of Sport Science
2018	Research Design Consultant - General Nutrition Corporation; Bangalore, India
2016 – 2020	House Director – Alpha Tau Omega
2016 – Present	Member – International Society of Sports Nutrition
2014 – Present	Member – National Strength and Conditioning Association
2014 – Present	Member - American Physiological Society
2014 – Present	Member - American College of Sport Medicine
2010 – Present	Member - Sigma Phi Epsilon
2006 – 2007	Class President - Carroll High School

## EXTERNAL FUNDING (*Cumulative Total Awarded = \$351,127*):

2022	<b>Principal Investigator:</b> “Ability of High Intensity Interval Training Plus Ischemic Preconditioning to Improve Vascular and Cognitive Function in Midlife Adults” National Strength and Conditioning Association.” Requested \$21,400: Not Awarded.
2021	<b>Principal Investigator:</b> “Examining exercise and hyperbaric strategies: prevention of neurodegeneration through comprehensive vascular health improvements in midlife African Americans” Neurobiology of Brain Disorders Award. McKnight Foundation, Letter of Intent: Not Awarded.
2021	<b>Principal Investigator:</b> “Examining resistance exercise strategies: prevention of cognitive decline through vascular health improvements in midlife African American adults,” PA-18-850: Prevention Research in Midlife Adults, R21: <u>Clinical Trial</u> . National Institute on Aging. Requested \$345,236: Not Awarded.
2021	<b>Principal Investigator:</b> “Cognitive & Biological Improvements in MCI individuals after Novel Exercise,” Alzheimer’s Association Research Grant. Letter of intent, not approved.
2021 – 2022	<b>Co-Investigator:</b> “Applying physical working capacity at the fatigue threshold and heart rate variability during microgravity exercise and EVA-simulated activities,” 80JSC020N0001-OMNIBUS1:2020 HERO Appendix B: NASA Human Research Program Omnibus Opportunity. Step 2, \$150,000: Not Awarded.
2021 – 2022	<b>Co-Principal Investigator:</b> “CellFlo 6: Effect on blood flow,” Cardia 6 Management, LLC - CAMGT, Awarded: \$41,520.
2019 – 2020	<b>Co-Principal Investigator:</b> “The effects 28 days of supplementation with phosphocreatine plus blueberry versus creatine monohydrate versus placebo on anaerobic exercise performance, muscular strength, muscular endurance, and performance fatigability,” Phenolic LLC, Awarded: \$35,000.
2019 – 2020	<b>Co-Principal Investigator:</b> “The effects of Shilajit and Biocell versus placebo on biomarkers of collagen degradation and synthesis as well as the time course of muscle strength and soreness recovery,” Natreon, Inc. Awarded: \$50,000.

- 2019 – 2020 **Co-Investigator:** “The acute and chronic effects of Capros (Phyllanthus Emblica) and Crominex on Muscle Blood Flow, Arterial Diameter, Time Averaged Flow Velocity, and Aerobic Exercise Performance,” Natreon, Inc. Awarded: \$50,000.
- 2019 – 2020 **Principal Investigator:** “Assessment of muscle blood flow and neuromuscular responses to sustained muscle actions anchored to various parameters and intensities,” Northland ASCM Innovative Student Research Grant. Awarded: \$400.
- 2019 – 2020 **Principal Investigator:** “Assessment of neuromuscular, muscle oxygenation, and muscle blood flow responses to RPE-based resistance training in men and women,” NSCA Foundation. Awarded: \$9,900.
- 2019 – 2020 **Co-Investigator:** “The effects of Safed Musli, Asparagus Racemosus, and Muscuna Pruriens Supplementation Plus Resistance training on Muscle Strength, Endurance, and Size,” Natreon, Inc. Awarded: \$30,700.
- 2017 – 2019 **Co-Principal Investigator:** “The effects of two dosing regimens of Shilajit on muscular strength, muscular endurance, and exercise-induced collagen degradation,” Natreon, Inc. Awarded: \$77,127.
- 2017 – 2018 **Co-Investigator:** “The effects of enhanced leucine and enhanced creatine on serum leucine and creatine levels,” General Nutrition Corporation, Awarded: \$98,000

**INTERNAL FUNDING (Cumulative Total Awarded = \$327,450):**

- 2021 **Principal Investigator:** “Efficacy of a novel resistance exercise strategy versus the current guidelines at preventing cognitive decline via vascular enhancements in African Americans,” Research and Scholarly Development Grant. Awarded: \$25,000.
- 2020 **Faculty Adviser:** “Evaluation of Near-Infrared Spectroscopy Normalization Practices,” 2020 Cycle Graduate Student Activities Enhancement Award Program, Awarded: \$1,950
- 2020 **Awardee:** Technology Partnership Agreement, Awarded: \$500
- 2017 – 2019 **Co-Investigator:** “An analysis of localized muscle fatigue, I-beam surface coating, and harness and tool belt on gait stability for steel erection,” University of Nebraska System Wide Supporting Effective Educator Development Grant, Awarded: \$300,000.

**SCHOLARSHIPS, FELLOWSHIPS, & AWARDS:**

- 2022 **Alzheimer’s Association Travel Fellowship:** This award sponsored select individuals to travel to the Southeast Neurodegenerative Disease Conference (Bonita Springs, FL)
- 2020 **Frank and Maria Wheeler Graduate Mentor Scholarship:** This award recognizes a graduate student who has demonstrated excellence in mentoring undergraduate and other graduate students in research and creative activities (\$1,000).
- 2019 **Graduate Student Travel Award:** University of Nebraska Foundation offers merit-based funds to travel to a professional conference (\$500; Orlando, FL).
- 2019 **Graduate Student Travel Abroad Award:** College of Education and Human Sciences provides merit-based funds to select students seeking international professional development (\$1,200; Prague, Czech Republic).
- 2019 **Joan L. Sharp Fellowship:** Awarded by the Department of Nutrition and Health Sciences to support the professional endeavors of a select graduate student (\$1,500).
- 2019 **Diane Connot Smith Healthy Futures Scholar Fellowship:** Awarded by the Department of Nutrition and Health Sciences to support the professional endeavors of a select graduate student (\$1,500).
- 2018 **Gatorade Sports Science Institute – ACSM Young Scholar:** Recognized for outstanding professional achievements and for fostering a future in exercise science and sport medicine (\$1000, Minneapolis, MN).

2018	<b>National Science Foundation:</b> Funds to travel to the 7 <sup>th</sup> Annual Symposium on Motor Control and Biomechanics at ACSM 2018 (\$500, Minneapolis, MN).
2018	<b>NSCA Foundation Challenge Scholarship:</b> Awarded to NSCA student members seeking graduate degree in a strength and conditioning-related field (\$1,500).
2018	<b>Student of the Month:</b> Recognized by the College of Education and Human Science as an individual who consistently demonstrates outstanding performance and contributions
2018	<b>ACSM Student Translate and Tweet Awardee:</b> Selected to present a summarized ACSM position stand paper (Minneapolis, MN).
2018	<b>Diane Connot Smith Healthy Futures Scholar Fellowship:</b> Awarded by the Department of Nutrition and Health Sciences to support the professional endeavors of a select graduate student (\$1,500).
2017	<b>Graduate Student Conference Award:</b> Awarded by Department of Nutrition and Health Sciences to select students (\$315, Las Vegas, NV)
2017	<b>NSCA Foundation Challenge Scholarship:</b> Awarded to NSCA student members seeking graduate degree in a strength and conditioning-related field (\$1,500).
2016	<b>Graduate Student Showcase:</b> Recognized outstanding research directed by a nominated graduate student (\$300).
2015	<b>Graduate Student Summer Fellowship:</b> Awarded to top 10% of graduate students to support research or other creative/scholarly projects (\$5,350).
2012	<b>Greek Male Athlete of the Year:</b> Recognized by the Order of Omega as an outstanding scholar and athlete.

#### PUBLICATIONS IN REFEREED SCIENTIFIC JOURNALS:

(\*Indicates corresponding author; Underlined names demarcate student advisees)

1. Salmon OF, Housh TJ, Hill EC, **Keller JL**, Anders JP, Johnson GO, Schmidt RJ, Smith CM. Changes in neuromuscular response patterns following 4-weeks of leg press training during velocity controlled isokinetic leg extensions. *Journal of Strength and Conditioning Research*. Sept 2022. In Production.
2. Neltner TJ, Smith RW, Arnett JE, Anders JP, **Keller JL**, Housh TJ, Schmidt RJ, Johnson GO. No effect of coactivation on fatigue-induced decreases in isokinetic and isometric torque. *Human Movement Science*. Sept 2022. Epub ahead of print. PMID: 36162383.
3. Neltner TJ, Anders JP, Smith RW, Arnett JE, **Keller JL**, Housh TJ, Schmidt RJ, Johnson GO. Coactivation does not contribute to fatigue-induced decreases in isokinetic forearm flexion and extension torque. *Journal of Science in Sport and Exercise*. Aug 2022. Published online. <https://doi.org/10.1007/s42978-022-00194-w>
4. Traylor MK, Bauman AJ, Frizell CA, Hill BD, Nelson AR, **Keller JL\***. An examination of the relationship among plasma BDNF, peripheral vascular function, and body composition with cognition in midlife African American/Black individuals. *Frontiers in Aging Neuroscience*. Aug 2022. 14:980561. PMID: 36092801.
5. Hill E, Rivera P, Proppe C, Rojas D, Wizenberg A, **Keller JL**. Greater neural responses following low-load blood flow restriction resistance exercise than non-blood flow restricted conditions. *Journal of Neurophysiology*. July 2022. 128(1):73-85. PMID: 35704398.
6. Garrett J, **Keller J\***, Anders JP, Hergenrader K, Neltner T, Housh T, Schmidt R, Johnson G. Echo Intensity is Weakly Associated with Muscular Strength and Endurance in Young, Healthy Adults. *Research in Sports Medicine*. 2022 June; 30(4):371-382. PMID: 33573413
7. Saiysit N, Butlig EA, Chaney SD, Traylor MK, Hawley NA, Randall RB, Bobinger HV, Frizell CA, Trimm F, Crook ED, Lin M, Hill BD, **Keller JL**, Nelson AR. Neurovascular Dysfunction in Diverse Communities with Health Disparities – Contributions to Dementia and Alzheimer’s Disease. *Frontiers in Neuroscience*. June 2022. 16:915405. PMID: 35844216

8. Proppe C, Rivera P, Hill E, Housh T, **Keller J**, Smith C, Anders JP, Schmidt R, Johnson G, Cramer T. The Effects of Blood Flow Restriction Training on Indices of Delayed Onset Muscle Soreness and Peak Power. *Isokinetics & Exercise Science*. April 2022; 30(2):167-175. DOI: 10.3233/IES-210158
9. Neltner TJ, Anders JPV, Smith RW, Arnett JE, **Keller JL**, Housh T, Schmidt RJ, Johnson GO. Coactivation does not contribute to fatigue-induced decreases in torque during reciprocal, isokinetic muscle actions. *Isokinetics & Exercise Science*. April 2022. Pre-press, 1-14.
10. Neltner T, Anders JP, **Keller J**, Smith R, Housh T, Schmidt R, Johnson G. Velocity Specific Coactivation and Neuromuscular Responses to Fatiguing, Reciprocal, Isokinetic, Forearm Flexion and Extension Muscle Actions. *Journal of Strength and Conditioning Research*. Mar 2022. 36(3):649-660. PMID: 35180186
11. **Keller J\***, Kennedy K, Hill E, Fleming S, Colquhoun R, Schwarz N. Handgrip exercise induces sex specific mean arterial pressure and oxygenation responses but similar performance fatigability. *Clinical Physiology and Functional Imaging*. Jan 2022. 2022 Mar. 42(2):172-138 PMID: 34979052.
12. **Keller J\***, Housh T, Hill E, Smith C, Schmidt R, Johnson G. Are there Sex-Specific Neuromuscular or Force Responses to Fatiguing Isometric Muscle Actions Anchored to a High Perceptual Intensity? *Journal of Strength and Conditioning Research*. Jan 2022. 36(1):156-161. PMID: 31860532.
13. **Keller J\***, Anders JP, Neltner T, Housh T, Schmidt R, Johnson G. Sex differences in muscle excitation and oxygenation, but not in force fluctuations or active hyperemia resulting from a fatiguing, bilateral isometric task. *Physiological Measurement*. Dec 2021. 42(11) PMID: 34847546
14. Smith R, Anders JP, Neltner T, Arnett J, **Keller J**, Housh T, Schmidt R, Johnson G. Perceptual Fatigability and Neuromuscular Responses During a Sustained, Isometric Forearm Flexion Muscle Action Anchored to a Constant Level of Perceived Exertion. *NeuroSports*. Oct 2021. 1(2): Published Online. Available at: <https://nsuworks.nova.edu/neurosports/vol1/iss2/2>
15. **Keller J\***, Kennedy K. Men demonstrate faster rates of forearm muscle desaturation than women before and after a fatiguing handgrip. *European Journal of Applied Physiology*. Sept 2021; 121(12):3473-3483. PMID: 34515868
16. Smith C, Housh T, Anders JP, **Keller J**, Hill E, Johnson G, Schmidt R. Effects of 4-weeks of Elastic Variable Resistance Training on the Electrochemical and Mechanical Components of Voluntary Electromechanical Delay Durations. *European Journal of Applied Physiology*. 2021 Aug; 121: 3313 - 3321. PMID:34432149
17. Noboa K, **Keller J\***, Hergenrader K, Housh T, Anders JP, Neltner T, Schmidt R, Johnson G. Men exhibit greater pain pressure threshold and times to task failure but not performance fatigability following self-paced exercise. *Perceptual & Motor Skills*. 2021 July; 128(5): 2326-2345. PMID: 34313524
18. Anders JP, Neltner T, Smith R, **Keller J**, Housh T, Daughtery J, Tempesta M, Dash A, Munt D, Schmidt R, Johnson G. The effects of phosphocreatine disodium salts plus blueberry extract supplementation on muscular strength, power, and endurance. *Journal of the International Society of Sports Nutrition*. July 2021; 60(18). PMID: 34503541
19. Hill E, Housh T, Smith C, **Keller J**, Anders JP, Schmidt R, Johnson G, Cramer J. Acute changes in muscle thickness, edema, and blood flow are not different between low-load blood flow restriction and non-blood flow restriction. *Clinical Physiology and Functional Imaging*. 2021 Apr; 41(5):452-460. PMID: 34192417

20. Smith RW, Neltner TJ, Anders JPV, **Keller JL**, Housh TJ, Schmidt RJ, Johnson GO. Fatigability, Coactivation, and Neuromuscular Responses of the Biceps Brachii and Triceps Brachii Following Sustained, Maximal, Isometric Forearm Flexion to Task Failure. *Journal of Exercise Physiology(Online)*. 2021 June; 24(3):55-74.
21. Anders JP, Neltner T, **Keller J**, Housh T, Schmidt R, Johnson G. Are Mode-Specific Differences in Performance Fatigability Attributable to Muscle Oxygenation? *European Journal of Applied Physiology*. 2021 Apr; 121(8):1-10. PMID: 33893835
22. Anders JP, **Keller J**, Neltner T, Housh T, Schmidt R, Johnson G. Task-specific Performance Fatigability and the Bilateral Deficit during Isokinetic Leg Extensions. *Journal of Musculoskeletal and Neuronal Interactions*. 2021 Mar; 21(1): 4-12. PMID: 33657751
23. Anders JP, **Keller J**, Smith C, Hill E, Neltner T, Housh T, Schmidt R, Johnson G. Performance Fatigability and the Bilateral Deficit During Maximal, Isokinetic Leg Extensions in Men and Women. *Isokinetics & Exercise Science*. 2021 Feb; 29(1): 56-66.
24. Hill E, Housh T, **Keller J**, Smith C, Anders JP, Schmidt R, Johnson G, Cramer J. Patterns of Responses and Time-Course of Changes in Muscle Size and Strength during Low-Load Blood Flow Restriction Resistance Training in Women. *European Journal of Applied Physiology*. 2021 Feb; 121(5):1473-1485. PMID: 33638690
25. **Keller J\***, Hill E, Housh T, Smith C, Anders JP, Schmidt R, Johnson G. The Effects of Short-term Blood Flow Restriction on Ratings of Perceived Exertion, Performance Fatigability, and Muscular Strength in Women. *Isokinetics & Exercise Science*. 2021 Feb; 29(1): 39-48. DOI: 10.3233/IES-204198
26. **Keller J\***, Housh T, Anders JP, Neltner T, Schmidt R, Johnson G. Similar Performance Fatigability and Neuromuscular Responses following Sustained Bilateral Tasks above and below Critical Force. *European Journal of Applied Physiology*. 2021 Jan; 121(4), 1111-1124. PMID: 33484333
27. Hill E, Housh T, Smith C, **Keller J**, Schmidt R, Johnson G. High versus low intensity fatiguing eccentric exercise on muscle thickness, strength, and blood flow. *Journal of Strength and Conditioning Research*. 2021 Jan; 35(1):33-40. PMID: 33332803
28. Neltner T, Anders JP, **Keller J**, Smith R, Housh T, Schmidt R, Johnson G. Ipsilateral and Contralateral Torque Responses to Bilateral and Unilateral Maximal, Fatiguing, Isokinetic Leg Extensions. *International Journal Kinesiology and Sports Science*. 2020 Dec; 8(4): 25-33.
29. Anders JP, **Keller J**, Smith C, Hill E, Neltner T, Housh T, Schmidt R, Johnson G. Performance Fatigability and Neuromuscular Responses for Bilateral and Unilateral Leg Extensions in Men. *Journal of Musculoskeletal and Neuronal Interactions*. 2020 Sep; 20(3): 325-331. PMID: 32877969
30. **Keller J\***, Housh T, Anders JP, Smith C, Hill E, Schmidt R, Johnson G. Day-to-Day Consistency and Inter-subject Variability of Neuromuscular Responses and Performance Fatigability as the Result of Maximal, Bilateral, Dynamic Leg Extensions. *Journal of Science in Sport and Exercise*. 2020 Aug; doi.org/10.1007/s42978-020-00076-z
31. **Keller J\***, Housh T, Anders JP, Neltner T, Schmidt R, Johnson G. Anchor Scheme, Intensity, and Time to Task Failure do not influence Performance Fatigability or Changes in Neuromuscular Responses following Bilateral Leg Extensions. *Journal of Exercise Physiology(Online)*. 2020 Aug; 23(4):119-134
32. Neltner T, Housh T, Smith C, Anders JP, **Keller J**, Hill E, Schmidt R, Johnson G. Similar Fatigue-Induced Changes in Neuromuscular Patterns of Responses for Contralateral Legs During Maximal, Bilateral Leg Extensions. *Journal of Exercise Physiology(online)*. 2020 Apr; 23(2): 1-17.

33. **Keller J\***, Housh T, Hill E, Smith C, Schmidt R, Johnson G. Sex-related differences in performance fatigability independent of blood flow following a sustained muscle action at a low perceptual intensity. *Journal of Science in Sport and Exercise*. 2020 Feb; 2:173-182. doi.org/10.1007/s42978-020-00052-7
34. Hill E, Housh T, **Keller J**, Smith C, Anders JP, Schmidt R, Johnson G, Cramer JT. Low-load Blood Flow Restriction Elicits Greater Concentric Strength than Non-Blood Flow Restriction Resistance Training but Similar Isometric Strength and Muscle Size. *European Journal of Applied Physiology*. 2020 Feb; 120(2):425-441. PMID: 31848703
35. Anders JP, **Keller J**, Smith C, Hill E, Neltner T, Housh T, Schmidt R, Johnson G. Performance Fatigability and Neuromuscular Responses for Bilateral Versus Unilateral Leg Extensions in Women. *Journal of Electromyography and Kinesiology*. 2020 Feb; 50:102367. PMID: 31711012.
36. Anders JP, **Keller J**, Smith C, Hill E, Housh T, Schmidt R, Johnson G. The Effects of Asparagus Racemosus Supplementation Plus 8 weeks of Resistance Training on Muscular Strength and Endurance. *Functional Morphology and Kinesiology*. 2020 Jan; 5(1): 4. PMID: 33467220
37. **Keller J\***, Housh T, Hill E, Smith C, Schmidt R, Johnson G. Self-regulated Force and Neuromuscular Responses following Fatiguing Isometric Leg Extension Anchored to a Rating of Perceived Exertion. *Applied Psychophysiology and Biofeedback*. 2019 Dec;44(5): 343-350. PMID:31494754
38. Hill E, Housh T, Smith C, **Keller J**, Schmidt R, Johnson G. Eccentric and Concentric Blood Flow Restriction Resistance Training on Indices of Delayed Onset of Muscle Soreness in Untrained Women. *European Journal of Applied Physiology*. 2019 Oct; 119(10): 2363-2373. PMID: 31473805
39. Smith C, Housh T, Hill E, **Keller J**, Anders JP, Johnson G, Schmidt R. Variable Resistance Training versus Traditional Weight Training on the Reflex Pathway Following Four Weeks of Leg Press Training. *Somatosensory and Motor Research*. 2019 Sep; 36(3): 223-229. PMID: 31474178
40. Anders JP, Smith C, **Keller J**, Hill E, Housh T, Schmidt R, Johnson G. Inter- and Intra-Individual Differences in EMG and MMG during Maximal, Bilateral, Dynamic Leg Extensions. *Sports*. Jul 2019; 7(7): 175. PMID: 31323817
41. Smith C, Housh T, Hill E, **Keller J**, Johnson G, Schmidt R. Biosignal Analysis for Reducing Prosthetic Control Durations: A Proposed Method Using Electromyographic and Mechanomyographic Control Theory. *Journal of Musculoskeletal and Neuronal Interactions*. 2019 Jun; 19(2): 142-149. PMID: 31186384
42. Hill E, Housh T, **Keller J**, Smith C, Schmidt R, Johnson G. The validity of the EMG and MMG techniques to examine muscle hypertrophy. *Physiological Measurement*. 2019 Mar; 40(2):025009. PMID: 30736032
43. **Keller J\***, Housh T, Hill E, Smith C, Schmidt R, Johnson G. The Effects of Shilajit Supplementation on Fatigue-Induce Decreases in Muscular Strength and Serum Hydroxyproline Levels. *Journal of the International Society of Sports Nutrition*. 2019 Feb; 16(3). PMID: 30728074
44. **Keller J\***, Housh T, Hill E, Smith C, Schmidt R, Johnson G. Neuromuscular Responses of Recreationally-Active Women During a Sustained, Submaximal Isometric Leg Extension Muscle Action at a Constant Perception of Effort. *European Journal of Applied Physiology*. 2018 Dec; 118(12): 2499-508. PMID: 30151687
45. Hill E, Housh T, **Keller J**, Smith C, Schmidt R, Johnson G. Sex differences for fatigue-induced changes in eccentric peak torque, but not muscle blood flow or neuromuscular responses. *Journal of Musculoskeletal and Neuronal Interactions*. 2018 Dec; 18(4): 427-37. PMID: 30511947

46. Hill E, Housh T, Smith C, **Keller J**, Schmidt R, Johnson G. Sex- and mode-specific responses to eccentric muscle fatigue. *International Journal of Sports Medicine*. 2018 Nov; 39(12): 893-901. PMID: 30206917
47. **Keller J\***, Housh T, Smith C, Hill E, Schmidt R, Johnson G. Sex-related differences in the Accuracy of Estimating Target Force Using Percentages of Maximal Voluntary Isometric Contractions Versus Ratings of Perceived Exertion during Isometric Muscle Actions. *Journal of Strength and Conditioning Research*. 2018 Nov; 32(11): 3294-3300. PMID: 29176386
48. Hill E, Housh T, Smith C, **Keller J**, Schmidt R, Johnson G. The Contributions of Arterial Cross-Sectional Area and Time Averaged Flow Velocity to Arterial Blood Flow. *Journal of Medical Ultrasound*. 2018 Oct-Dec; 26(4): 186-193. PMID: 30662149.
49. Smith C, Housh T, Hill E, **Keller J**, Johnson G, Schmidt R. Co – Activation, Estimated Anterior and Posterior Cruciate Ligament Forces, and Motor Unit Activation Strategies during the Time Course of Fatigue. *Sports*. 2018 Sept; 6(4): E104. PMID: 30248892
50. Hill E, Housh T, **Keller J**, Smith C, Schmidt R, Johnson G. Early Phase Adaptations in Muscle Strength and Hypertrophy as a Result of Low-Intensity Blood Flow Restriction Resistance Training. *European Journal of Applied Physiology*. 2018 Sep; 118(9): 1831-1843. PMID: 29934764
51. **Keller J\***, Housh T, Camic C, Bergstrom H, Smith D, Smith C, Hill E, Schmidt R, Johnson G, Zuniga J. The Effect of Epoch Length on Time and Frequency Domain Parameters of Electromyographical and Mechanomyographic Signals. *Journal of Electromyography and Kinesiology*. 2018 Jun;40: 88-94. PMID: 29704787
52. Smith C, Housh T, Hill E, **Keller J**, Schmidt R, Johnson G. Effects of Intensity on Muscle-Specific Voluntary Electromechanical Delay and Relaxation Electromechanical Delay. *Journal of Sports Sciences*. 2018 Jun; 36(11): 1196-1203. PMID: 28792273
53. **Keller J\***, Kelsch E, Crecelius A. Acute effects of sugar sweetened beverage consumption on reactive hyperemia in young, healthy humans. *Journal of Nature and Science*. 2018 Feb; 4(2): e486.
54. Hill E, Housh T, Camic C, Smith C, **Keller J**, Schmidt R, Johnson G. Electromechanical efficiency tracks eccentric torque production. *International Journal of Physical Education, Sports and Health*. Dec 2017; 4(1): 135-140.
55. Smith C, Housh T, Hill E, **Keller J**, Schmidt R, Johnson G. Are there Mode-Specific and Fatigue-Related Electromechanical Delay Responses for Maximal Isokinetic and Isometric Muscle Actions?. *Journal of Electromyography and Kinesiology*. 2017 Dec; 37: 9-14. PMID: 28843087
56. Smith C, Housh T, Hill E, **Keller J**, Schmidt R, Johnson G. Effects of Fatigue and Recovery on Electromechanical Delay During Isokinetic Muscle Actions. *Physiological Measurements*. 2017 Sep; 38(10): 1837-47. PMID: 28857748.
57. Smith C, Housh T, Hill E, **Keller J**, Schmidt R, Johnson G. Effects of Fatigue on Voluntary Electromechanical and Relaxation Electromechanical Delay. *International Journal of Sports Medicine*. 2017 Sep; 38(10): 763-769. PMID: 28783848
58. Smith C, Housh T, Hill E, **Keller J**, Schmidt R, Johnson G. Time Course of Changes in Neuromuscular Parameters from the Quadriceps During Maximal Isokinetic Muscle Actions. *Journal of Nature and Science*. 2017 Aug; 3(8): e426.
59. Cuy Castellanos D, **Keller J**, Majchrazk E. Exploring the connection between community food security initiatives and social-cognitive factors on dietary intake. *Journal of Agriculture, Food Systems, and Community Development*. 2016 Nov; 7(1).

60. **Keller J**, Crecelius A. Everything in moderation, including moderation (comment). Supplementary Material to: Wisloff, U., J.S. Coombes and O. Rognmo. CrossTalk proposal: High intensity interval training does have a role in risk reduction or treatment of disease. *Journal of Physiology*. 2015 Dec; 593(24): 5215-17. PMID: 26642190

*Currently under review*

1. Gray S, Cuomo A, Proppe CE, Traylor MK, Hill EC, **Keller JL\***. Effects of sex and cuff pressure on physiological responses during blood flow restriction resistance exercise in young adults. *Medicine & Science in Sport & Exercise*. Sept 2022.
2. Wizenberg AM, Gonzalez-Rojas D, Rivera PM, Proppe CE, Laurel KP, Stout JR, Fukuda DH, Billaut R, **Keller JL**, Hill EC. The acute effects of continuous and intermittent blood flow restriction on sprint interval performance and muscle oxygen responses. *Journal of Strength and Conditioning Research*. Sept 2022.
3. Buechner BM, Traylor MK, Feldman RI, Overstreet KF, Hill BD, **Keller JL\***. Examining relationships between cardiovascular disease risk factors and cognitive flexibility. *Advances in Cognitive Psychology*. Sept 2022.
4. Kelsch EA, **Keller JL**, Crecelius AR. The impact of acute hypoxic exposure on reactive hyperemia in the forearm of young, healthy humans. *Experimental Physiology*. June 2022.

**WEBSITE ARTICLE:**

**Keller J** (2017, April 24) *Buzz about Beta-Alanine*. <https://www.bodybuilding.com/content/the-buzz-about-beta-alanine.html>

**RESEARCH PRESENTATIONS:**

(\*Indicates Student-Advisee Presentation)

American College of Sports Medicine – National

1. \*Traylor M, \*Fillingim S, Bauman A, Nelson A, Hill B, Frizell C, **Keller J**. Lean Mass and Strength, Not Fat, Correlate Highly with Vascular Function in Midlife, African Americans. *May 2022*
2. Arnett J, Neltner T, Anders JP, Smith R, **Keller J**, Housh T, Schmidt R, Johnson G. Coactivation during Fatiguing, Maximal, Reciprocal, Isokinetic Forearm Flexion and Extension Muscle Actions Using Mechanomyography. *May 2022*
3. Anders JP, Neltner T, **Keller J**, Smith R, Arnett J, Housh T, Schmidt R, Johnson G. Mode-specific Differences in Exercise-Induced Fatigability and the Bilateral Deficit During Isokinetic Leg Extensions in Women. *May 2022*
4. Neltner T, Anders JP, Smith R, Arnett J, **Keller J**, Housh T, Schmidt R, Johnson G. Coactivation During Fatiguing, Maximal, Reciprocal, Isokinetic Forearm Flexion and Extension Muscle Actions. *May 2022*
5. Proppe C, Rivera P, Hill E, Housh T, **Keller J**, Smith C, Anders JP, Schmidt R, Johnson G, Cramer J. The Effects of Blood Flow Restriction Training on Indices of DOMS and Peak Torque. *May 2021, Virtual*
6. \*Noboa K, **Keller J**, Anders JP, Neltner T, Housh T, Schmidt R, Johnson G. Sex Differences in Muscle Excitation and Tissue Oxygenation Are Not Reflected by Global Performance Fatigability. *May 2021, Virtual*
7. Smith R, Neltner T, Anders JP, **Keller J**, Housh T, Schmidt R, Johnson G. Fatigue-induced Changes in Coactivation Following Maximal, Isometric, Forearm Flexion to Task-failure. *May 2021, Virtual*
8. Neltner T, Anders JP, Smith R, **Keller J**, Housh T, Schmidt R, Johnson G. Effects of Maximal, Reciprocal, Isokinetic Fatigue on Coactivation For Forearm Flexion and Extension. *May 2021, Virtual*
9. Anders JP, Neltner T, **Keller J**, Housh T, Schmidt R, Johnson G. Are Mode-specific Differences in Performance Fatigability Attributable to Muscle Oxygenation? *May 2021, Virtual*
10. **Keller J**, Housh T, Anders JP, Neltner T, Hergenrader K, Schmidt R, & Johnson G. Relative Contributions of Muscular Strength, Muscle Size, and Tissue Oxygenation to Isometric Performance Fatigability. *May 2020 – Oral Presentation – Size, Strength, and Power Session. †*

11. Anders JP, **Keller J**, Smith C, Hill E, Neltner T, Housh T, Schmidt R, & Johnson G. Performance Fatigability and Neuromuscular Patterns of Responses for Bilateral Versus Unilateral Leg Extensions in Men. *May 2020* †
12. Neltner T, Anders JP, Smith C, **Keller J**, Hill E, Housh T, Schmidt R, & Johnson G. Fatigue-induced changes in Neuromuscular Responses During Maximal Bilateral Leg Extensions. *May 2020* †
13. **Keller J**, Housh T, Hill E, Smith C, Schmidt R, & Johnson G. Assessment of Performance Fatigability During Resistance Exercise Anchored to Ratings of Perceived Exertion. *May 2019*
14. **Keller J**, Housh T, Smith C, Hill E, Schmidt R, & Johnson G. Force and Electromyographic Responses during Sustained Isometric Muscle Actions anchored by RPE Values. *May 2018*
15. Hill C, Housh T, Smith C, **Keller J**, Schmidt R, & Johnson G. Early Adaptations in Strength as A Result of Blood Flow Restriction Training Is Not Mode-specific. *May 2018*
16. Hill C, Housh T, Smith C, **Keller J**, Schmidt R, & Johnson G. Sex-Specific Responses to Fatiguing Exercise Can Be Explained by Electromechanical Efficiency. *June 2017*

#### National Strength and Conditioning Association

1. \*Traylor M, **Keller J**. Similar improvements in microvascular function after 8 weeks of blood flow restriction or traditional resistance training in midlife, Black adults. *July 2022*
2. Neltner T, Anders JP, Smith R, Arenett J, **Keller J**, Housh T, Schmidt R, & Johnson G. No effects of coactivation on fatigue-induced decreases in post-testing isokinetic torque. *July 2022* \*Poster Doctoral Award Consideration
3. Smith R, Neltner T, Anders JP, **Keller J**, Housh T, Schmidt R, & Johnson G. The Amplitude and Frequency Contents of the Mechanomyographic Signal Remain Unchanged Following A Maximal, Isometric, Forearm Flexion Task to Failure. *July 2021* \*Podium Doctoral Award Consideration
4. Neltner T, Anders JP, Smith R, **Keller J**, Housh T, Schmidt R, & Johnson G. Mechanomyographic Responses to Maximal, Reciprocal, Isokinetic Forearm Flexion and Extension Fatigue. *July 2021* \*Podium Doctoral Award Consideration
5. **Keller J**, Housh T, Anders JP, Neltner T, Schmidt R, & Johnson G. Sex-Specific Muscle Activation during Fatiguing Tasks Anchored to Low and High Perceptual Based Loads. *July 2020* \*Podium Presentation †
6. Neltner T, Anders JP, **Keller J**, Hergenrader K, Housh T, Schmidt R, & Johnson G. The Relative Contributions of Muscle Cross-Sectional Area, Muscle Quality, and Sex to the Prediction of Maximal Isometric Leg Extension Force. *July 2020* \*Doctoral Award Consideration †
7. Anders JP, **Keller J**, Smith C, Hill E, Neltner T, Housh T, Schmidt R, & Johnson G. Performance Fatigability and the Bilateral Deficit During Maximal, Isokinetic Leg Extensions in Men and Women. *July 2020* †
8. **Keller J**, Housh T, Hill E, Smith C, Schmidt R, & Johnson G. Sex-Specific Neuromuscular and Force Responses following a Fatiguing Task Anchored to Low and High Perceptions of Effort. *July 2019*. \*Doctoral Oral Presentation Award Consideration
9. Smith C, Housh T, Hill E, **Keller J**, Anders JP, Schmidt R, & Johnson G. Effects of Four Weeks of Traditional Versus Variable Resistance Leg Press Training on Strength and Muscular Endurance. *July 2019*
10. Anders JP, Smith C, **Keller J**, Hill E, Housh T, Schmidt R, & Johnson G. Patterns of Neuromuscular Responses During Fatiguing, Maximal Bilateral Muscle Actions. *July 2019*
11. Hill E, Housh T, **Keller J**, Smith C, Schmidt R, & Johnson G. Reciprocal Forearm Flexion-Extension Resistance Training Elicits Comparable Increases in Muscle Strength and Size with and without Blood Flow Restriction. *July 2019*
12. **Keller J**, Housh T, Smith C, Hill E, Schmidt R, & Johnson G. Neuromuscular Responses During a Sustained, Submaximal Isometric Leg Extension Muscle Action at a Constant Perception of Effort. *July 2018*
13. Smith C, Housh T, Hill E, **Keller J**, Schmidt R, & Johnson G. Co-Activation, Estimated Anterior and Posterior Cruciate Ligament Forces, and Motor Unit Activation Strategies During the Time Course of Fatigue. *July 2018*
14. Hill E, Housh T, Smith C, **Keller J**, Schmidt R, & Johnson G. Neuromuscular and Hypertrophic Adaptations to Low-Intensity Blood Flow Restriction Training. *July 2018*

15. **Keller J**, Housh T, Smith C, Hill E, Schmidt R, & Johnson G. Accuracy of Estimating Actual Target Force using Percentages of Maximal Voluntary Isometric Contraction versus Ratings of Perceived Exertion. *July 2017*
16. **Keller J**, Lyn R, & Crecelius A. Allometric Modeling for the Bench Press and Squat in Collegiate D1 Athletes. *July 2016*

#### Alzheimer's Association International Conference

1. Bauman A, \*Traylor M, Saiyasit N, Butlig EA, Chaney A, Hawley N, Randall R, Bobinger H, Frizell C, Trimm F, Crook E, Lin M, Hill B, Fouty B, **Keller J**, Nelson A. Vascular dysfunction in health disparities – unraveling contributions to dementia and Alzheimer's disease in South Alabama. *July 2022*.

#### Southeast Neurodegenerative Disease Conference (\*CANCELLED DUE TO HURRICANE IAN\*)

1. **Keller J**, Bauman A, Saiyasit N, Butlig EA, \*Traylor M, Nelson A. Effects of Race and APOE4 carriage on BDNF expression in Midlife Adults. *Sept 2022*.
2. Randall R, Bauman A, Bobinger H, Saiyasit N,\*Traylor M, **Keller J**, Nelson A. Pericyte injury in mid-life, aging, and Alzheimer's disease. *Sept 2022*.

#### International Society of Sport Nutrition

1. Anders JP, Neltner T, Smith R, **Keller J**, Housh T, Daugherty J, Tempesta M, Dash A, Munt D, Schmidt R, Johnson G. The Effects of Phosphocreatine Disodium Salts Plus Blueberry Extract Supplementation on Muscular Strength. *June 2021*
2. Smith R, Anders JP, Neltner T, **Keller J**, Housh T, Daugherty J, Tempesta M, Dash A, Munt D, Schmidt R, Johnson G. The effects of 28 Days of Supplementation with Phosphocreatine Disodium Salts Plus Blueberry Extract versus a Placebo on the Average Power Output During Maximal, Unilateral Isokinetic Leg Extensions. *June 2021*
3. Anders JP, **Keller J**, Smith C, Hill E, Housh T, Johnson G, & Schmidt R. The Rate of Fatigue during Unilateral versus Bilateral, Maximal, Isokinetic Leg Extensions. *June 2019*
4. **Keller J**, Housh T, Hill E, Smith C, Schmidt R, & Johnson G. Applications and Perspectives of the RPE clamp protocol during resistance training to investigate ergogenic aids. *June 2019*. \*Ph.D. Student Presentation Awardee
5. **Keller J**, Housh T, Smith C, Hill E, Schmidt R, & Johnson G. The Effects of Shilajit Supplementation on Fatigue-Induced Decreases in Muscular Strength. *June 2018*

#### Southeast Chapter American College of Sports Medicine

1. \*Traylor M, \*Feldman R, \*Overstreet K, Hill B, Nelson A, **Keller J**. Weak relationships between measures of vascular and cognitive function in the presence of various sex differences in young, healthy adults. *Feb 2022*. 1<sup>st</sup> Place Undergraduate Poster Award (\$300).
2. Kennedy K, Colquhoun R, Magrini M, Fleming S, Banks N, **Keller J**, Jenkins N. Differing Alterations in force perception and strength following shortening and lengthening contractions. *Feb 2021; Virtual*

#### Northland Chapter American College of Sports Medicine

1. **Keller J**, Housh T, Anders JP, Neltner T, Schmidt R, & Johnson G. Sex Differences in Muscle Tissue Oxygenation Saturation, Muscle Excitation, and Performance Fatigability. *April 2020 †*

#### Alabama State Association for Health, Physical Education, Recreation, and Dance

1. Health disparities in Alabama – potential countermeasures to combat the key culprit: vascular dysfunction. \*Traylor M and **Keller J**. Research Lecture. *April 2022; Oral*.

## European Congress of Sport Science

1. **Keller J**, Housh T, Hill E, Smith C, Schmidt R, & Johnson G. Responses during a Sustained, Isometric Leg Extension Muscle Action at a Constant Perception of Effort. *July 2019*

## Federation of American Societies for Experimental Biology

1. **Keller J**, Kelsch E, Cuy Castellanos D, & Crecelius A. Acute Effects of Sugar Sweetened Beverage Consumption of Reactive Hyperemia in Young, Healthy Humans. *April 2016*
2. Kelsch E, **Keller J**, & Crecelius A. The Impact of Acute Isocapnic Hypoxia on Reactive Hyperemia in Young, Healthy Humans. *April 2016* APS David S. Bruce Outstanding Abstract Award (\$300)
3. Hudock M, **Keller J**, & Crecelius A. Effect of Combination Ice and Compression Socks on Resting Calf Blood Flow in Trained Male. *April 2016* APS David S. Bruce Outstanding Abstract Award (\$300)
4. Crecelius A & **Keller J**. Impact of co-enrollment in computer-based Human Physiology virtual laboratory on students' final lecture course grade: a follow-up study. *April 2016*
5. Castellanos A, Jones J, Christaldi, **Keller J**. Perspective of Public, Private and Civil Sectors in the Development and Maintenance of a Local Food System. *April 2016*

## Nebraska Physiological Society

1. Hill E, Housh T, Smith C, **Keller J**, Schmidt R, & Johnson G. Are there sex differences for fatigue-induced changes in eccentric peak torque, muscle blood flow, and neuromuscular responses? *Journal of Applied Physiology, 2017.*

## National Aeronautics and Space Administration

1. Hill E, Rivera P, Proppe C, **Keller J**, Beltran E. Applying Heart Rate Variability during EVA-Simulated Activities. Presented at Lunar Surface Science Workshop, *January 2021.*
2. Hill C, Housh T, **Keller J**, Smith C, Schmidt R, & Johnson G. Reciprocal forearm flexion-extension Resistance Training Elicits Comparable Increases in Muscle Strength and Size with and without Blood Flow Restriction. Presented at Nebraska Academy of Sciences, *2019.*
3. Hill C, Housh T, **Keller J**, Smith C, Schmidt R, & Johnson G. Neuromuscular and hypertrophic adaptations as a result of blood flow restriction resistance training. Presented at Nebraska Academy of Sciences, *2018.*
4. Hill C, Housh T, Smith C, **Keller J**, Schmidt R, & Johnson G. Eccentric Blood Flow Restriction Training Elicits Muscle Adaptation and Attenuates Exercise-Induced Muscle Damage. Presented at Human Research Program (Houston), *2017.*

## Food and Nutrition Exhibition

1. Cuy Castellanos D, **Keller J**, Majchrzak E. Exploring the connection between community security food initiatives and social-cognitive factors on dietary intake in an urban city, *2015.*

## Society of Nutrition Education and Behavior

1. Cuy Castellanos D, **Keller J**, Majchrzak E. The influence of Community Food Security Initiatives and diet-related social cognitive factors on dietary intake in low-income residents, *June 2015.*

## **MASTERS STUDENT COMMITTEES:**

1. Pizer J (2021). Meta-analysis on neuropsychology of headache. Committee members: Hill BD (chair), Yates MA, **Keller J**.

## **MEDICAL STUDENT MENTORSHIP:**

1. Amanda Cuomo (2022). The effect of muscle blood flow restriction on hemodynamics and cerebral oxygenation at rest and during exercise. College of Medicine Summer Medical Students' Research Project

- Joshua Smith (2021). Low-weight blood-flow resistance exercise on vascular and cognitive functions. College of Medicine Summer Medical Students' Research Project.

## UNDERGRADUATE STUDENT MENTORSHIP:

- Aubry "Alissa" Ikner (2022). Assessing trauma-informed care in physical therapy. Honors Undergraduate Thesis. Committee members: Lewis C (Chair), White L, Shelley-Tremblay J, **Keller J**.
- Sylvie Gray (2022). The effect of muscle blood flow restriction on hemodynamics and cerebral oxygenation at rest and during exercise. University of South Alabama Summer Undergraduate Research Fellowship (SURF)
- Miranda Traylor (2021). Determination of what level of the human vasculature most effectively predicts cognitive function in healthy, college-aged adults. University of South Alabama Summer Undergraduate Research Fellowship (SURF)
- Kipp Hergenrader (2019-2020). The association of cross-sectional area of the vastus lateralis with muscular fatigue during resistance training at a constant perception of effort. Undergraduate Creative Activities and Research Experience (UCARE).
- Jayden Garrett (2019-2020). Sex-specific muscle blood flow difference following a fatiguing task anchored to a moderate perceptual intensity. Undergraduate Honors Thesis

## SERVICE:

### Academic

2022	NSCA Annual Meeting Research Poster Judge
2022	Southeast ACSM Abstract Review – External Reviewer
2021 – Present	Amino Acids – External Reviewer
2021 – Present	Frontiers in Physiology – External Reviewer
2021 – Present	Medicine & Science in Sport & Exercise – External Reviewer
2020 – Present	Journal of Science in Sport and Exercise – External Reviewer
2020 – Present	Motor Control – External Reviewer
2019 – Present	PLOS ONE – External Reviewer
2020 – Present	Perceptual and Motor Skills – Editorial Review Board Member
2019 – 2020	Perceptual and Motor Skills – External Reviewer
2019 – Present	Advances in Rehabilitation – External Reviewer
2018 – Present	Peer J – External Reviewer
2018 – Present	Journal of Electromyography and Kinesiology – External Reviewer
2018 – Present	Journal of Neurotrauma – External Reviewer
2018 – Present	Journal of Applied Biomechanics – External Reviewer
2017 – Present	Journal of Strength and Conditioning Research – External Reviewer
2017 – Present	NSCA Professional Presentation & Grants – External Reviewer

### Campus Involvement

2022 – Present	University of South Alabama Goldwater Scholarship Committee
2021 – Present	College of Education & Professional Studies Diversity & Inclusion Committee
2018 – 2020	Undergraduate Creative Activities and Research Application, Reviewer
2017 – 2020	Graduate Student Ambassador
2016 – 2020	Graduate Student Assembly – Department Representative
2016	First Year Student Orientation – Leader
2012 – 2013	Bearcat Buddies – Math Tutor
2013 – 2014	Sigma Phi Epsilon – Flyaway Coordinator

### Community Involvement

2022	Heart for Athletes – EKG Screener
2018 – 2019	Lincoln Literacy – English Classroom Instructor
2016 – 2020	City Impact – Mentor
2016 – 2017	Friendship Home – Children's Advocate
2012 – 2014	Cincinnati Children's Hospital Medical Center – Rehabilitation Volunteer
2013	Muscular Dystrophy Camp – Camp Counselor