

# **CORY M. SMITH PHD**

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## *Education*

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<b>PhD: Human Sciences</b>	May 2016 to May 2019
University of Nebraska – Lincoln, Lincoln, NE	
<b>Master of Science: Nutrition and Health Sciences</b>	Aug 2014 to May 2016
University of Nebraska – Lincoln, Lincoln, NE	
<b>Bachelor of Science: Exercise Science</b>	Sept 2006 to Dec 2013
California State University of San Bernardino, San Bernardino, CA	
<b>Emergency Medical Technician</b>	Apr 2008 to Dec 2008
Victor Valley Community College, Victorville, CA	

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## *Professional Experience*

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<b>Assistant Professor: University of Texas at El Paso</b>	
<i>Human &amp; Environmental Physiology Laboratory</i>	
Course: <i>Anatomical Kinesiology</i>	June 2019 to Present
<i>Assessments and Measurements</i>	
<i>Scientific Principles of Strength and Conditioning</i>	
<b>Adjunct Professor: University of Nebraska – Lincoln</b>	
Course: <i>Exercise Testing and Exercise Programming</i>	May 2017 to May 2019
<i>in Adult Fitness and Cardiac Rehabilitation</i>	
<ul style="list-style-type: none"><li>▪ Develop and instruct lectures and laboratory testing.</li><li>▪ In-depth analysis and development of the techniques and knowledges prerequisite for certification in adult fitness and cardiac rehabilitation as prescribed by the American College of Sports Medicine.</li></ul>	
<b>Graduate Research and Teaching Assistant: University of Nebraska - Lincoln</b>	
Course: <i>Exercise Physiology Laboratory</i>	

- Lecture and Laboratory Instructor Jan 2015 to May 2019  
Department of Nutrition and Health Sciences, Physiology of Exercise  
(NUTR 484/884)

Course: *Exercise Testing and Exercise Programming*

- Laboratory Instructor Jan 2015 to Present  
Department of Nutrition and Health Sciences, Exercise Testing and  
Exercise Programming in Adult Fitness and Cardiac Rehabilitation (NUTR 486/886)

Course: *Human Nutrition and Metabolism*

- Lecture and Laboratory Instructor Aug 2014 to Jan 2015  
Department of Nutrition and Health Sciences, Human Nutrition and Metabolism  
(NUTR 250)

**Research and Rehabilitation Instructor** Apr 2013 to Dec. 2014

- Independent Contractor for Biodex (*Shirley, NY*)
- Trained physical therapists in isokinetic dynamometers for rehabilitation
- Trained professors in isokinetic dynamometers and research design
- Instructed and designed Balance System training for recovery and concussion testing

**Emergency Medical Technician** Dec. 2008 to Sept. 2014

*Loma Linda Medical Center Emergency Room, Loma Linda, CA*

- Emergency Medical Trauma Technician
- Specialized in Orthopedics, Trauma, and Cardiac Events
- Stroke, STEMI, Snake Bite patient management
- Airway Management
- Disaster Mobile Telemedicine Vehicle Response Team
- Preceptor Instructor and In-Service Trainer

**Utility Groundman** Apr. 2006 to Nov. 2007

*Southern California Edison, Victorville, CA*

- Update Changes in Utility Electrical Maps
- Preparation of Materials and Utility Trucks
- Logistic Operations during Emergent Outages
- Assist Lineman and Run Electrical Lines above and below ground

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*External Funding*

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- Study Coordinator: “An analysis of localized muscle fatigue, I-beam surface coating, and harness and tool belt gait stability for steel erection” University of Nebraska System Sciences, Awarded: \$300,000.
- Co-Investigator: “Rumenic acid rich conjugated linoleic acid for improving anti-ageing properties regarding joint function and cognitive decline.” Stepan Lipid Nutrition, Awarded: \$150,000.
- Co-Investigator: “The effects of enhanced leucine and enhanced creatine monohydrate on serum leucine and creatine levels” General Nutrition Corporation (GNC), Awarded: \$98,000.
- Co-Investigator: “The effects of two dosing regimens of Shilajit on muscular strength, muscular endurance, and exercise-induced collagen degradation” Natreon, Awarded: \$98,000.
- National Defense Science & Engineering Graduate Fellowship Applicant (2017)
- Aerospace Medical Association Fellowship Applicant (2018)
- De Luca Foundation: Promoting Innovation in Electromyography Grant Applicant (2017 and 2018)

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### *Awards and Achievements*

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- Manuscript (P.I.) Earned “Issue Highlight” from the Journal of Electromyography and Kinesiology
- NSCA Master’s Podium Presentation of the Year Award (2015)
- Chancellor’s Fellowship University of Nebraska – Lincoln (2015)
- Chancellor’s Fellowship University of Nebraska – Lincoln (2014)
- AAHPERD Student Major of the Year Award (2014)

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### *Services and Involvement*

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- Aerospace Medical Association Member
- Aerospace Physiology Society Member
- American College of Sports Medicine Member
- National Strength and Conditioning Association Member
- Journal of Strength & Conditioning Research Reviewer
- Ammons Scientific: Perceptual & Motor Skills Reviewer
- International Journal of Exercise Science Reviewer
- European Journal of Applied Physiology Reviewer
- Muscle & Nerve Reviewer
- Human Movement Sciences Reviewer
- Journal of Clinical Neuroscience Reviewer

- Physiological Measurement Reviewer
- International Journal of Sports Medicine Reviewer
- Journal of Electromyography and Kinesiology Reviewer
- Journal of Sports Science Reviewer
- Sports Reviewer
- University of Nebraska Undergraduate and Graduate Abstract Reviewer
- Disaster Medical Assistance Team Member
- CPR and First Aid Training for Underprivileged in the Inland Empire

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### *Publications*

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#### **PUBLISHED:**

1. **Smith, C.M.**, Housh, T.J., Hill, E.C., Keller, J.L., Anders, J.P., Johnson, G.O., Schmidt, R.J. Variable Resistance Training versus Traditional Weight Training on the Reflex Pathway Following Four Weeks of Leg Press Training. *Somatosensory & Motor Research, Published Ahead in Print* (2019).
2. **Smith, C.M.**, Housh, T.J., Hill, E.C., Keller, J.L., Schmidt, R.J., Johnson, G.O. Co-Activation Estimated Anterior and Posterior Cruciate Ligament Forces and Motor Unit Activation Strategies during the Time Course of Fatigue. *Sports, 6(4), 104, 2018.*
3. **Smith, C.M.**, Housh, T.J., Hill, E.C., Keller, J.L., Johnson, G.O., Schmidt, R.J. A Biosignal Analysis For Reducing Prosthetic Control Durations: A Proposed Method Using Electromyographic and Mechanomyographic Control Theory. *Journal of Musculoskeletal and Neuronal Interactions, 19(2), 142, 2019.*
4. **Smith, C. M.**, Housh, T. J., Hill, E. C., Keller, J. L., Johnson, G. O., & Schmidt, R. J. Effects of Intensity on Muscle-Specific Voluntary Electromechanical Delay and Relaxation Electromechanical Delay. *Journal of Sports Sciences, 36(11), 1196-1203, 2018.*
5. **Smith, C. M.**, Housh, T. J., Herda, T. J., Zuniga, J. M., Camic, C. L., Bergstrom, H. C., & Jenkins, N. D. Time Course of Changes in Neuromuscular Parameters during Sustained Isometric Muscle Actions. *Journal of Strength and Conditioning Research, 31(12): 86, 2017.*
6. **Smith, C. M.**, Housh, T. J., Hill, E. C., Schmidt, R. J., & Johnson, G. O. Time Course of Changes in Neuromuscular Responses at 30% versus 70% 1 Repetition Maximum during Dynamic Constant External Resistance Leg Extensions to Failure. *International Journal of Exercise Science, 10(3), 365, 2017.*
7. **Smith, C. M.**, Housh, T. J., Hill, E. C., Keller, J. L., Johnson, G. O., & Schmidt, R. J. Are There Mode-Specific and Fatigue-Related Electromechanical Delay Responses for Maximal Isokinetic and Isometric Muscle Actions?. *Journal of Electromyography and Kinesiology, 37, 9-14, 2017.*

8. **Smith, C. M.**, Housh, T. J., Hill, E. C., Cochrane, K. C., Jenkins, N. D., Schmidt, R. J., & Johnson, G. O. Differences Between the Time Course of Changes in Neuromuscular Responses and Pretest versus Posttest Measurements for the Examination of Fatigue. *Journal of Nature and Science*, 3(10), 456, 2017.
9. **Smith, C. M.**, Housh, T. J., Hill, E. C., Keller, J. L., Johnson, G. O., & Schmidt, R. J. Effects of Fatigue and Recovery on Electromechanical Delay during Isokinetic Muscle Actions. *Physiological Measurement*, 38(10), 1837-1847, 2017.
10. **Smith, C. M.**, Housh, T. J., Hill, E. C., Keller, J. L., Johnson, G. O., & Schmidt, R. J. Effects of Fatigue on Voluntary Electromechanical and Relaxation Electromechanical Delay. *International Journal of Sports Medicine*, 38(10), 763-769, 2017.
11. **Smith, C. M.**, Housh, T. J., Hill, E. C., Johnson, G. O., & Schmidt, R. J. Dynamic versus Isometric Electromechanical Delay in Non-Fatigued and Fatigued Muscle: A Combined Electromyographic, Mechanomyographic, and Force approach. *Journal of Electromyography and Kinesiology*, 33, 34-38, 2017.
12. **Smith, C. M.**, Housh, T. J., Hill, E. C., Johnson, G. O., & Schmidt, R. J. Changes in Electromechanical Delay during Fatiguing Dynamic Muscle Actions. *Muscle & Nerve*, 56(2), 315-320, 2017.
13. **Smith, C. M.**, Housh, T. J., Hill, E. C., Johnson, G. O., and Schmidt, R. J. Time Course of Changes in Neuromuscular Parameters from the Superficial Quadriceps Muscles During Maximal Isokinetic Muscle Actions. *Journal of Nature and Science*, 3(8), e426, 2017.
14. **Smith, C. M.**, Housh, T. J., Hill, E. C., Johnson, G. O., & Schmidt, R. J. Alternating Force Induces Less Pronounced Fatigue-Related Responses than Constant Repeated Force Muscle Actions. *Isokinetics and Exercise Science*, 25(4), 271-279, 2017.
15. **Smith, C. M.**, Housh, T. J., Hill, E. C., Cochrane, K. C., Jenkins, N. D. M., Schmidt, R. J., & Johnson, G. O. Effects of Fatiguing Constant versus Alternating Intensity Intermittent Isometric Muscle Actions on Maximal Torque and Neuromuscular Responses. *Journal of Musculoskeletal & Neuronal Interactions*, 16(4), 318-326, 2016.
16. **Smith, C. M.**, Housh, T. J., Jenkins, N. D., Hill, E. C., Cochrane, K. C., Miramonti, A. A., & Johnson, G. O. Combining Regression and Mean Comparisons to Identify the Time Course of Changes in Neuromuscular Responses during the Process of Fatigue. *Physiological Measurement*, 37(11), 1993-2002, 2016.
17. **Smith, C. M.**, Housh, T. J., Zuniga, J. M., Camic, C. L., Bergstrom, H. C., Smith, D. B., & Schmidt, R. J. Influences of Interelectrode Distance and Innervation Zone on Electromyographic Signals. *International Journal of Sports Medicine*, 38(2), 111-117, 2017.
18. **Smith, C. M.**, Housh, T. J., Herda, T. J., Zuniga, J. M., Camic, C. L., Bergstrom, H. C., & Jenkins, N. D. Time Course of Changes in Neuromuscular Parameters during Sustained Isometric Muscle Actions.

*Journal of Strength and Conditioning Research*, 30(10): 2697–2702, 2016.

19. **Smith, C. M.**, Housh, T. J., Herda, T., Zuniga, J. M., Camic, C. L., Bergstrom, H. C., & Cochrane, K. C. Electromyographic Responses from the Vastus Medialis during Isometric Muscle Actions. *International Journal of Sports Medicine*, 37(08): 647-652, 2016.
20. **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.
21. **Smith, C. M.** Time Course of Changes in Neuromuscular Parameters during Fatiguing High-Load and Low-Load Concentric Dynamic Constant External Resistance Leg Extension Muscle Actions. *University of Nebraska – Lincoln*, 2016
22. Costa, P. B., Ruas, C. V., & **Smith, C. M.** Effects of Stretching and Fatigue on Peak Torque, Muscle Imbalance and Stability. *Journal of Sports Medicine and Physical Fitness*, 58(7-8), 957-965, 2017.
23. Hill, E. C., Housh, T. J., **Smith, C. M.**, Schmidt, R. J., & Johnson, G. O. High versus Low Intensity Fatiguing Eccentric Exercise on Muscle Thickness, Strength, and Blood Flow. *Journal of Strength and Conditioning Research, Published Ahead of Print*, 2018.
24. Keller, J. L., Housh, T. J., **Smith, C. M.**, Hill, E. C., Schmidt, R. J., & Johnson, G. O. 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, Published Ahead of Print*, 1064-8011, 2017.
25. Jenkins, N. D., Housh, T. J., Buckner, S. L., Bergstrom, H. C., Cochrane, K. C., Hill, E. C., **Smith, C.M.**, & Cramer, J. T. Neuromuscular Adaptations after 2 and 4 weeks of 80% versus 30% 1 Repetition Maximum Resistance Training to Failure. *Journal of Strength and Conditioning Research*, 30(8), 2174-2185, 2016.
26. Hill, E. C., Housh, T. J., Camic, C. L., **Smith, C. M.**, Schmidt, R. J., & Johnson, G. Velocity-Dependent Changes in Electrical Efficiency of the Leg Extensors during Eccentric Isokinetic Muscle Actions. *International Journal of Sports Medicine*, 39(4), 264-269, 2018.
27. Hill, E. C., Housh, T. J., Keller, J. L., **Smith, C. M.**, Schmidt, R. J., & Johnson, G. O. Sex- and Muscle-Specific Responses during a Fatiguing, Dynamic, Submaximal, Exercise Bout. *Journal of Strength and Conditioning Research, Published Ahead of Print*, 2018.
28. Cochrane-Snyman, K. C., Housh, T. J., **Smith, C. M.**, Hill, E. C., Jenkins, N. D., Schmidt, R. J., & Johnson, G. O. Inter-Individual Variability in the Patterns of Responses for Electromyography and Mechanomyography during Cycle Ergometry using an RPE-Clamp Model. *European Journal of Applied Physiology*, 116(9), 1639-1649, 2016.

29. Hill, E. C., Housh, T. J., Keller, J. L., **Smith, C. M.**, Schmidt, R. J., & Johnson, G. O. Early Phase Adaptations in Muscle Strength and Hypertrophy as a Result of Low-Intensity Blood Flow Restriction Resistance Training. *European Journal of Applied Physiology, Published Ahead of Print*, 2018.
30. Jenkins, N. D., Miramonti, A. A., Hill, E. C., **Smith, C. M.**, Cochrane-Snyman, K. C., Housh, T. J., & Cramer, J. T. Greater Neural Adaptations Following High-vs. Low-Load Resistance Training. *Frontiers in Physiology*, 8, 331, 2017.
31. Hill, E. C., Housh, T. J., **Smith, C. M.**, Schmidt, R. J., & Johnson, G. O. The Contribution of Arterial Diameter and Time Averaged Flow Velocity to Muscle Blood Flow. *Journal of Medical Ultrasound, Published Ahead of Print*, 2018.
32. Keller, J. L., Housh, T. J., Camic, C. L., Bergstrom, H. C., Smith, D. B., **Smith, C. M.**, & Zuniga, J. M. The Effect of Epoch Length on Time and Frequency Domain Parameters of Electromyographic and Mechanomyographic Signals. *Journal of Electromyography and Kinesiology*, 40, 88-94, 2018.
33. Hill, E. C., Housh, T. J., **Smith, C. M.**, Keller, J. L., Schmidt, R. J., & Johnson, G. O. High-vs. Low-Intensity Fatiguing Eccentric Exercise on Muscle Thickness, Strength, and Blood Flow. *Journal of Strength and Conditioning Research, Published Ahead of Print*, 2018.
34. Hill, E., Housh, T., **Smith, C.M.**, Schmidt, R., & Johnson, G. Muscle-and Mode-Specific Responses of the Forearm Flexors to Fatiguing, Concentric Muscle Actions. *Sports*, 4(4), 47, 2016.
35. Jenkins, N. D. M., Housh, T. J., Buckner, S. L., Bergstrom, H. C., **Smith, C. M.**, Cochrane, K. C., & 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 & Neuronal Interactions*, 16(2), 135, 2016.
36. Hill, E. C., Housh, T. J., **Smith, C. M.**, Cochrane, K. C., Jenkins, N. D. M., Cramer, J. T., & Johnson, G. O. Effect of Sex on Torque, Recovery, EMG, and MMG Responses to Fatigue. *Journal of Musculoskeletal & Neuronal Interactions*, 16(4), 310, 2016.
37. Jenkins, N. D., Housh, T. J., Bergstrom, H. C., Cochrane, K. C., Hill, E. C., **Smith, C. M.**, & Cramer, J. T. Basic Reporting and Interpretation of Surface EMG Amplitude and Mean Power Frequency: a Reply to Vitgotsky, Ogborn, and Phillips. *European Journal of Applied Physiology*, 116(3), 659-661, 2016.
38. Hill, E.C., Housh, T.J., Camic, C.L., Jenkins, N.D.M., **Smith, C.M.**, Cochrane, K.C., Cramer, J.T., Schmidt, R.J., Monaghan, M.M., and Johnson, G.O. Effects of Velocity on Peak Torque and Neuromuscular Responses during Eccentric Muscle Actions. *Isokinetics and Exercise Science*, 24(1), 1-6, 2016
39. Jenkins, N. D., Housh, T. J., Bergstrom, H. C., Cochrane, K. C., Hill, E. C., **Smith, C. M.**, & Cramer, J. T. Muscle Activation during Three Sets to Failure at 80 vs. 30% 1RM Resistance Exercise. *European Journal of Applied Physiology*, 115(11), 2335-2347, 2015.
40. Cochrane, K.C., Housh, T.J., Hill, E.C., **Smith, C.M.**, Jenkins, N.D.M., Cramer, J.T., Johnson, G.O., and

- Schmidt, R.J. Physiological Responses Underlying the Perception of Effort during Moderate and Heavy Intensity Cycle Ergometry. *Sports*, 3(1), 369-382, 2015.
41. Jenkins, N. D., Housh, T. J., Miramonti, A. A., McKay, B. D., Yeo, N. M., **Smith, C. M.**, & Cramer, J. T. Effects of Rumenic Acid Rich Conjugated Linoleic Acid Supplementation on Cognitive Function and Handgrip Performance in Older Men and Women. *Experimental Gerontology*, 84, 1-11, 2016.
  42. Hill, E.C., Housh, T.J., Camic, C.L., Jenkins, N.D.M, **Smith, C.M.**, Cochrane, K.C., Cramer, J.T., Schmidt, R.J., and Johnson, G.O. The Effects of Velocity on Electromyographic, Mechanomyographic, and Torque Responses to Repeated Eccentric Muscle Actions. *Journal of Strength and Conditioning Research*, 30(6), 1743-1751, 2016.
  43. 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., 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(1), 269-280, 2015.
  44. 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): 1178-85, 2015.
  45. Cochrane K.C., Housh, T.J., **Smith, C.M.**, Hill, E.C., Jenkins, N.D.M., Johnson, G.O., Housh, D.J., Schmidt, R.J., and Cramer, J.T. The Relative Contributions of Strength, Anthropometrics, and Body Composition Characteristics to Estimated Propulsive Force in Young Male Swimmers. *Journal of Strength and Conditioning Research*, 29(6): 1473-1479, 2015.

#### IN REVIEW:

1. **Smith, C.M.**, Housh, T.J., Hill, E.C., Keller, J.L., Schmidt, R.J., Johnson, G.O. Foundational Methodology for the Development of a Simplistic Myoelectric Prosthetic Controller Utilizing Electromyographic Amplitude Moving Averaged Values. *Prosthetics and Orthotics International*, (2019)

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### *Abstracts*

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1. **Smith, C. M.**, 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 Presented at *National Strength and Conditioning Association National Conference, 2019*.
2. **Smith, C. M.**, 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. Presented at *National Strength and Conditioning Association National Conference, 2018*
3. **Smith, C. M.**, Housh, T.J., Hill, E.C., Cochrane, K.C., Jenkins, N.D.M., Miramonti, A. A., Cramer, J.T., Schmidt, R.J., and Johnson, G.O. Neuromuscular Responses during Fatiguing Intermittent Isometric Muscle Actions. Presented at the *National Strength and Conditioning Association National Conference, Podium Presentations 2016*.
  4. **Smith, C. M.**, Housh, T.J., Hill, E.C., Cochrane, K.C., Jenkins, N.D.M., Miramonti, A. A., Schmidt, R.J., Cramer, J.T., and Johnson, G.O. Effects of Varied Intensity on Torque and Neuromuscular Parameters during Intermittent Isometric Muscle Actions. Presented at the *National American College of Sports Medicine Annual Meeting, 2016*.
  5. **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., Cochrane, K.C., Hill, E.C., Jenkins, N.D.M., Schmidt, R.J., and Johnson, G.O. Effects of the Innervation Zone on Electromyographic Responses during Fatiguing Isometric Muscle Actions. Presented at the *National Strength and Conditioning Association National Conference, 2015*.
  6. **Smith C. M.**, Costa P.B. Effects Of Stretching And Fatigue On Hamstring and Quadriceps Strength, Muscle Imbalance, And Postural Stability. Presented at the *National American College of Sports Medicine Annual Meeting, 2014*.
  7. Keller, J., Housh, T., **Smith, C. M.**, Hill, E., Schmidt, R., & Johnson, G. The Effects of Shilajit Supplementation on Fatigue-Induced Decreases in Muscular Strength. Presented at *International Society of Sports Nutrition National Conference, 2018*
  8. Hill, E., Housh, T., **Smith, C. M.**, Keller, J., Schmidt, R., & Johnson, G. Neuromuscular and Hypertrophic Adaptations to Low-Intensity Blood Flow Restriction Training. Presented at the *National Strength and Conditioning Association National Conference, 2018*.
  9. Keller, J., Housh, T., **Smith, C. M.**, Hill, E., Schmidt, R., & Johnson, G. Neuromuscular Responses During a Sustained, Submaximal Isometric Leg Extension Muscle Action at a Constant Perception of Effort. Presented at the *National Strength and Conditioning Association National Conference, 2018*.
  10. Hill, E. C., Housh, T., **Smith, C. M.**, Keller, J., Schmidt, R., & Johnson, G. Early Adaptations In Strength As A Result Of Blood Flow Restriction Training Is Not Mode-specific. Presented at the *National American College of Sports Medicine Annual Meeting, 2018*.
  11. Keller, J., Housh, T., **Smith, C. M.**, Hill, E., Schmidt, R., & Johnson, G. Force and Electromyographic Responses during Sustained Isometric Muscle Actions Anchored by RPE Values. Presented at the *National American College of Sports Medicine Annual Meeting, 2018*.

12. Tomko, P. M., Miramonti, A., Hill, E. C., **Smith, C. M.**, Cochrane-Snyman, K. C., Colquhoun, R. J., ... & Jenkins, N. D. Mechanomyographic Amplitude is Sensitive To Neuromuscular Adaptations Following High-Versus Low-load Resistance Training. Presented at the *National American College of Sports Medicine Annual Meeting*, 2018.
13. Hill, E.C., Housh, T., **Smith, C. M.**, 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 National Aerospace Association*, 2018.
14. Keller, J., Housh, T., **Smith, C. M.**, Hill, E., Schmidt, R., & Johnson, G. Accuracy of Estimating Actual Target Force using Percentages of Maximal Voluntary Isometric Contraction versus Ratings of Perceived Exertion. Presented at the *National Strength and Conditioning Association National Conference*, 2017.
15. Hill, C., Housh, T., **Smith, C. M.**, Keller, J., Schmidt, R., & Johnson, G. Sex-Specific Responses to Fatiguing Exercise Can Be Explained by Electromechanical Efficiency. Presented at the *National American College of Sports Medicine Annual Meeting*, 2017.
16. Hill, E.C., Housh, T.J., **Smith, C. M.**, Cochrane, K.C., Jenkins, N.D.M., Miramonti, A. A., Cramer, J.T., Schmidt, R.J., and Johnson, G.O. Effects of Work-to-Rest Ratios on Peak Torque and Neuromuscular Responses during Submaximal, Isometric Muscle Actions. Presented at the *National American College of Sports Medicine Annual Meeting*, 2016.
17. Jenkins, N.D.M., Miramonti, A.A., Housh, T.J., Hill, E.C., **Smith, C. M.**, Cochrane, K.C., Cramer, J.T., Schmidt, R.J., and Johnson, G.O. Are Voluntary Activation Determined by the Interpolated Twitch Technique and Mechanomyographic Amplitude Synonymous? Presented at the *National American College of Sports Medicine Annual Meeting*, 2016.
18. Cochrane, K.C., Housh, T.J., **Smith, C. M.**, Hill, E.C., Jenkins, N.D.M., Miramonti, A. A., Schmidt, R.J., Cramer, J.T., and Johnson, G.O. Physiological Responses Underlying the Perception of Effort during Moderate and Heavy Intensity Cycle Ergometry. Presented at the *National American College of Sports Medicine Annual Meeting*, 2016.
19. Miramonti, A.A., Housh, T.J., Hill, E.C., **Smith, C. M.**, Cochrane, K.C., Cramer, J.T., Schmidt, R.J., and Johnson, G.O. Relationships Among Cognitive Function and Handgrip Strength and Endurance in Older Men and Women. Presented at the *National American College of Sports Medicine Annual Meeting*, 2016.
20. Cochrane, K.C., Housh, T.J., Hill, E.C., **Smith, C. M.**, Jenkins, N.D.M., Cramer, J.T., Murphy, C., Johnson, G.O., and Schmidt, R.J. Perceptual and Physiological Responses during Cycle Ergometry at a Constant Perception of Effort. Presented at the *National Strength and Conditioning Association National Conference*, 2016.

21. Hill, E.C., Housh, T.J., **Smith, C. M.**, Cochrane, K.C., Jenkins, N.D.M., Cramer, J.T., Schmidt, R.J., and Johnson, G.O. Gender-Related Differences in Muscle Fatigue. Presented at the *National Strength and Conditioning Association National Conference, 2016*.
22. Jenkins, N.D.M., Housh, T.J., Bergstrom, H.C., Cochrane, K.C., Hill, E.C., **Smith, C. M.**, Johnson, G.O., Schmidt, R.J., and Schmidt, R.J. Muscle Size, Muscle Strength, Electromyography, Mechanomyography, and Voluntary Activation during Four Weeks of High- versus Low-Load Resistance Training. Presented at the *National Strength and Conditioning Association National Conference, 2016*.
23. Jenkins, N.D.M., Housh, T.J., Bergstrom, H.C., Cochrane, K.C., Hill, E.C., **Smith, C. M.**, Yeo, N., Miller, J.M., and Cramer, J.T. Muscle Activation, Muscle Swelling, and Exercise Volume during Three Sets to Failure at 80% versus 30% 1RM Resistance Exercise. Presented at the *National Strength and Conditioning Association National Conference, 2015*.
24. Hill, E.C., Camic, C.L., Housh, T.J., Monaghan, M.M., Cochrane, K.C., **Smith, C. M.**, Jenkins, N.D.M., Cramer, J.T., Schmidt, R.J., and Johnson, G.O. Effects of Velocity on Isometric Peak Torque, Electromyographic, and Mechanomyographic Responses to Repeated Maximal Eccentric Muscle Actions. Presented at the *National Strength and Conditioning Association National Conference, 2015*.
25. Cochrane, K.C., Housh, T.J., Jenkins, N.D.M., Bergstrom, H.C., Hill, E.C., **Smith, C. M.**, 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. Presented at the *National American College of Sports Medicine Annual Meeting, 2015*.
26. Jenkins, N.D.M., Miller, J.M., Yeo, N., **Smith, C. M.**, Hill, E.C., Cochrane, K.C., Bergstrom, H.C., Housh, T.J., and Cramer, J.T. Electromyographic and Mechanomyographic Responses during Three Sets to Failure of Low- versus High-Load Resistance Training. Presented at the *National American College of Sports Medicine Annual Meeting, 2015*.
27. Hill, E.C., Camic, C.L., Housh, T.J., Monaghan, M.M., Cochrane, K.C., **Smith, C. M.**, Jenkins, N.D.M., Cramer, J.T., Schmidt, R.J., and Johnson, G.O. Effects of Velocity on Peak Torque and Neuromuscular Responses during Repeated, Maximal Eccentric Muscle Actions. Presented at the *National American College of Sports Medicine Annual Meeting, 2015*.

#### INVITED PRESENTATIONS:

1. **Smith, C. M.** Invited Speaker at the National Strength and Conditioning National Conference: Gender-Differences in Supplementation Requirements and Psychology– *GNC Sponsored Symposium*. New Orleans, Louisiana, 2016.

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### *Professional Research Interests*

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- Biosignal Processing using Non-Invasive Techniques
- Prosthetic Control Theory
- Stress and Fatigue Analysis
- Survival Physiology
- Performance Optimization
- Electromechanical Delay
- Relaxation Electromechanical Delay
- Reflex Electromechanical Delay and Analysis
- Effects of Fatiguing Exercise on Peripheral Fatigue Markers
- Load Carrying Capacity and Mechanics
- LabVIEW Programming for Biosignal Integration
- Supplementations for Performance and Body Composition
- Fatigues Effects on Gait Stability and Balance

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### *Laboratory Skills*

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- LabView Custom Programming: National Instruments
- Surface Electromyography (EMG)
- Mechanomyography (MMG)
- Ultrasonography for Neuromuscular Research (GE Logiqe)
- Dual Energy X-ray Absorptiometry: Body Composition and Bone Density (GE Lunar iDXA)
- Isokinetic Dynamometry Development
- Muscle Oxygenation via Near Infrared Spectrometry (NIRS)
- Isometric, Dynamic Constant External Resistance, Variable Resistance training and testing
- Load Cell Applications for Force Analysis
- Force Plate Analysis
- Electric Goniometry for Joint Position Analysis
- Peripheral Nerve Stimulation (Digitimer DS7AH, Hertfordshire, UK)
- Digital Signal Processing with National Instruments LabVIEW Software
- Image-J Software for Ultrasound and MRI Image Analyses
- Underwater Weighing for Body Composition

- Skinfolds for Body Composition
- Blood Draws and I.V.'s
- Blood Lactate Analysis
- Wingate Testing
- Balance Testing and Training – Biodex Balance Systems
- BodPod for Body Composition Analysis
- Orthopedic Evaluation, Muscle Imbalance, Fiber Typing
- Injured Limb or Isolation Casting
- Concentric, Eccentric, Isokinetic, Isometric, Isotonic Testing
- Blood Pressure
- Pulse Oximeter
- Blood Draws
- Cholesterol Analysis
- Advanced Biosignal Processing
- Electrical Engineering for Biosignal Analysis: Load Cell, Strain Gauges, Custom Electrodes, Decomposition, and Custom Programming
- Bioelectrical Impedance Analysis for Body Composition
- Graded Exercise and Respiratory Gas Exchange Testing (Parvo Medics Metabolic Cart)
- Cycle Ergometer Testing, Maximal and Submaximal (Lode Corval and Monark ergometers)
- Treadmill Testing, Maximal and Submaximal
- Pulmonary Spirometry
- Twelve Lead Resting and Exercise Electrocardiography
- Dietary Analysis

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### *Professional Development*

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| ▪ | Certified Exercise Physiologist (ACSM)              | Nov. 2014 to Present   |
| ▪ | Certified Health and Fitness Specialist (ACSM)      | Nov. 2014 to Present   |
| ▪ | Certified Strength & Conditioning Specialist (NSCA) | May 2016 to Present    |
| ▪ | Emergency Medical Technician: B, I, P, ICEMA, NREMT | Nov. 2008 to Dec. 2014 |
| ▪ | Basic and Advanced Cardiac Life Support Instructor  | Aug. 2012 to Dec. 2014 |
| ▪ | Certified Cardiac Arrhythmia and Treatment          | Nov. 2009 to Present   |