

## **Jorge M. Zuniga, Ph.D.**

Department of Exercise Science

Creighton University

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**QUALIFICATIONS:** Bilingual exercise scientist and educator with a Ph.D. in Exercise Physiology.

### **PRIMARY RESEARCH INTERESTS**

- Exercise physiology, muscle function, neuromuscular fatigue, electromyography, mechanomyography, muscle architecture, and  $\dot{V}O_2$  kinetics.

### **EDUCATION**

- 2007- 2011 Ph.D. in Exercise Physiology, University of Nebraska-Lincoln.
- 2005-2007 Masters in Exercise Science, University of Nebraska at Omaha.
- 1999-2003 Pedagogy in Physical Education, Cardenal R. Silva Henriquez Catholic University, Santiago, Chile.
- 1994-1997 Manuel Barros Borgono High School, Santiago, Chile.

### **EMPLOYMENT:**

- **August 2012 to present:** Assistant Professor of in the Department of Exercise Science at Creighton University.
  - Undergraduate Teaching: Exercise Physiology (with Lab) (EXS 335), Nutrition for health and sport performance (EXS 350), Basic Statistics and Research Design (EXS 407).
- **August 2011- August 2012:** Assistant Professor of Kinesiology at the School of Allied Health department of Kinesiology at Western New Mexico University.
  - Undergraduate Teaching: Anatomical and Physiological Kinesiology (with Lab) (KINS 240/242), Exercise Physiology (with Lab) (KINS 341/342), Exercise Prescription for Special Populations (KINS 440), Nutrition/Diet Therapy (KINS/WELL 300), Introduction to Research in Kinesiology (KINS 480).
  - Graduate Teaching: Exercise Programming and Prescription (KINS 550), and Advanced Research Seminar (KIN 551).
- **August 2007- July 2011:** Graduate Assistant in the Exercise Physiology Laboratory at the University of Nebraska-Lincoln.
  - Graduate Teaching and Research Assistant / Laboratory Instructor – Department of Nutrition and Health Sciences, Physiology of Exercise (NUTR 484/884).
  - Graduate Teaching and Research Assistant / Laboratory Instructor – Department of Nutrition and Health Sciences, Exercise Testing and Exercise Programming in Adult Fitness and Cardiac Rehabilitation (NUTR 486/886).

- **August 2005- May 2007:** Graduate Assistant in the Exercise Physiology Laboratory at the University of Nebraska at Omaha.
  - Research Assistant.
  - Conduct the Special Exercise for Life and Fitness program (SELF) for those who need special accommodation when exercising such as individuals with diabetes, arthritis, obesity, fibromyalgia, and hypertension.
  - Assist with fitness center programs.
  - Personal training.
  - Supervise labs for Lab Methods (PE 4010/8016), Measurement and Evaluation (PE 4930/8978), Physiology of Exercise (PE 4940/8946), and Advanced Exercise Physiology (PE 8950).
  - Fitness testing for the class Fitness for living (PE 1800).
  - Fitness consultations.
  - Exercise prescriptions.
  - Lab testing (Cholesterol, resting metabolic rate, maximal aerobic power, lactate threshold, anaerobic power, underwater weighting and skin fold calipers).
  - Assisting with translation and interpretations (Spanish/English).
- **May 2006-March 2007:** Exercise Physiologist in the Physical Therapy department at the University of Nebraska Medical Center, Omaha, NE.
  - Research Assistant.
  - Exercise trainer of diabetic patients.
  - Translator and interpreter (English/Spanish).
- **March 2002- November 2003:** Physical Education teacher at Blas Canas Catholic Elementary School, Santiago, Chile.
  - Organize athletic competitions.
  - Instruct extracurricular activities (such a ping-pong, soccer and volleyball).
  - Director of “Behavior and Citizenship” Unity of Children Orientation
- **March 2002- November 2003:** Assistant in Exercise Physiology at Cardenal R. Siva Henrriquez Catholic University, Santiago, Chile.
  - Elaboration of teaching and evaluating materials.
  - Tutoring classes.

## **PUBLICATIONS**

1. **Zuniga, J.M.**, T.J. Housh, C.L. Camic, , H.C. Bergstrom, D. A. Traylor, G.O. Johnson, and R.J. Schmidt. The effect of different exercise protocols and regression-based algorithms on the assessment of the anaerobic threshold. *Journal of Strength and Conditioning Research*, Submitted.
2. **Zuniga, J.M.**, M. Bubak, B.E. Fisher, D.E. Neighbors, H.S. Osowski, and A.N. Oyen. Electromyographic and gas exchange fatigue thresholds during incremental treadmill running. *Journal of Athletic Medicine*, In press.
3. **Zuniga, J.M.**, and M. H. Malek. Electromyographic responses of the superficial quadriceps femoris muscles during incremental treadmill running. *Muscle & Nerve*, doi: 10.1002/mus.23842.
4. **Zuniga, J.M.**, T.J. Housh, C.L. Camic, , H.C. Bergstrom, D. A. Traylor, G.O. Johnson, and R.J. Schmidt. Neuromuscular and metabolic comparisons between ramp and step incremental cycle ergometer tests. *Muscle & Nerve*, In press DOI: 10.1002/mus.23606 .
5. **Zuniga, J.M.**, T.J. Housh, C.L. Camic, , H.C. Bergstrom, D. A. Traylor, G.O. Johnson, and R.J. Schmidt. Metabolic parameters for ramp versus step incremental cycle ergometer tests. *Applied Physiology, nutrition, and Metabolism*, In press DOI: 10.1139/h2012-098.

6. **Zuniga, J.M.**, T.J. Housh, C.L. Camic, C.R. Hendrix, Michelle Mielke, G.O. Johnson, Dona J. Housh and R.J. Schmidt. The effects of Creatine Monohydrate Loading on Anaerobic Performance and 1-RM Strength Testing. *Journal of Strength and Conditioning Research*, 26(6):1651-1656, 2012.
7. **Zuniga, J.M.**, T.J. Housh, C.L. Camic, C.R. Hendrix, H.C. Bergstrom, G.O. Johnson, and R.J. Schmidt. The effects of skinfold thicknesses and innervations zone on the mechanomyographic signal during cycle ergometry. *Journal of Electromyography and Kinesiology*, 21(5):789-94, 2011.
8. **Zuniga, J.M.**, T.J. Housh, C.L. Camic, M. Mielke, C.R. Hendrix, G.O. Johnson, D.J. Housh, and R.J. Schmidt. Yearly changes in the anthropometric dimensions of female high school gymnasts. *Journal of Strength and Conditioning Research*, 25(1): 124-128, 2011.
9. **Zuniga, J.M.**, T.J. Housh, M. Mielke, C.R. Hendrix, C.L. Camic, G.O. Johnson, D.J. Housh, and R.J. Schmidt. Gender comparisons of anthropometric characteristics of young sprint swimmers. *Journal of Strength and Conditioning Research*, 25(1): 103-108, 2011.
10. **Zuniga, J.M.**, T.J. Housh, C.L. Camic, C.R. Hendrix, R.J. Schmidt, M. Mielke, and G.O. Johnson. A mechanomyographic fatigue threshold test for cycling. *International Journal of Sports Medicine*, 31(9):636-643, 2010.
11. **Zuniga, J.M.**, K. E. Berg, J. Noble, J. Harder, M.E. Chaffin, V. S. Hanumanthu. Physiological responses to interval training with different intensities and duration of exercise. *Journal of Strength and Conditioning Research*, 25(5):1279-1284, 2010.
12. **Zuniga, J.M.**, T.J. Housh, C.L. Camic, C.R. Hendrix, M. Mielke, R.J. Schmidt, and G.O. Johnson. The effects of accelerometer placement on mechanomyographic amplitude and mean power frequency during cycle ergometry. *Journal of Electromyography and Kinesiology*, 20(4):719-725, 2010.
13. **Zuniga, J.M.**, T.J. Housh, C.L. Camic, C.R. Hendrix, M. Mielke, R.J. Schmidt, and G.O. Johnson. The effects of parallel versus perpendicular electrode orientations on EMG amplitude and mean power frequency from the biceps brachii. *Electromyography and Clinical Neurophysiology*, 50(2):87-96, 2010.
14. **Zuniga, J.M.**, T.J. Housh, C.R. Hendrix, C.L. Camic, M. Mielke, R.J. Schmidt, and G.O. Johnson. The effects of electrode orientation on electromyographic amplitude and mean power frequency during cycle ergometry. *Journal of Neuroscience Methods*, 184 (2):256-62, 2009.
15. **Zuniga, J.M.**, T.J. Housh, M. Mielke, C.L. Camic, C.R. Hendrix, G.O. Johnson, D.J. Housh, and R.J. Schmidt. Validity of Fat-Free Weight Equations for Estimating Mean and Peak Power in High School Wrestlers. *Pediatric Exercise Science*, 21 (1): 100-12, 2009.
16. Herda, T.J, **J.M. Zuniga**, C. L. Camic, H.C. Bergstrom, D.B. Smith, J.P. Weir, J.T. Cramer, and T.J. Housh. Quantifying the Effects of Electrode Distance from the Innervation Zone on the Electromyographic Amplitude versus Torque Relationships. *Physiological Measurement*. In press.
17. Bergstrom, H.C, T.J. Housh, **J.M. Zuniga**, D. A. Traylor, R.J. R.W. Lewis, Schmidt, and G.O. Johnson. An examination of neuromuscular and metabolic fatigue thresholds. *Physiological Measurement*. In press.
18. Bergstrom, H.C, T.J. Housh, **J.M. Zuniga**, C. L. Camic, D. A. Traylor, R.J. R.W. Lewis, Schmidt, and G.O. Johnson. Differences among estimates of critical power and anaerobic work capacity derived from five mathematical model and the 3-min all-out test. *Journal of Strength and Conditioning Research*. In press.
19. Bergstrom, H.C, T.J. Housh, **J.M. Zuniga**, E. D. Ryan, C. L. Camic, D. A. Traylor, R.J. Schmidt, and G.O. Johnson. Responses during exhaustive exercise at critical power determined from the 3-min all-out test. *Journal of Sports Sciences*. In press.
20. Bergstrom, H.C, T.J. Housh, **J.M. Zuniga**, C. L. Camic, D. A. Traylor, R.J. R.W. Lewis, Schmidt, and G.O. Johnson. The Relationships Among Critical Power Determined by a 3-min All-out Test, Respiratory Compensation Point, Gas Exchange Threshold, and Ventilatory Threshold. *Research Quarterly for Exercise and Sport*. In press.
21. Bergstrom, H.C, T.J. Housh, **J.M. Zuniga**, C. L. Camic, D. A. Traylor, R.J. Schmidt, and G.O. Johnson. Metabolic and neuromuscular responses at critical power from the 3-min all-out test. *Applied Physiology, nutrition, and Metabolism*. In press.
22. Bergstrom, H.C, T.J. Housh, **J.M. Zuniga**, C. L. Camic, D. A. Traylor, R.J. Schmidt, and G.O. Johnson. Estimated times to exhaustion and power outputs at the gas exchange threshold, physical working capacity at the rating of perceived exertion threshold, and respiratory compensation point. . *Applied Physiology, nutrition, and Metabolism*. 37:872-879 (2012).

23. Bergstrom, H.C, T.J. Housh, **J.M. Zuniga**, C. L. Camic, D. A. Traylor, R.W. Lewis, R.J. Schmidt, and G.O. Johnson. Estimates of critical power and anaerobic work capacity from a single, all-out test of less than 3-min. *Sports Medicine & Doping Studies*. 2(2):02-05, 2012.
24. Bergstrom, H.C, T.J. Housh, **J.M. Zuniga**, C. L. Camic, D. A. Traylor, R.J. Schmidt, and G.O. Johnson. A new single work bout test to estimate critical power and anaerobic work capacity. *Journal of Strength and Conditioning Research*. 26(3):656-63, 2012.
25. Traylor, D.A., T.J. Housh, C. L. Camic, **J.M. Zuniga**, H. C. Berstrom, G.O. Johnson, and R.J. Schmidt. The effects of short-term isokinetic training on isometric and concentric torque of the forearm flexors in females. *Journal of Exercise Physiology online*. 15(1):110-116, 2012.
26. Traylor, D.A., T.J. Housh, C. L. Camic, **J.M. Zuniga**, H. C. Berstrom, G.O. Johnson, R.J. Schmidt, and R. W. Lewis. The effects of 3 days of concentric on isometric and concentric torque production of the forearm flexors. *Isokinetics and Exercise Science*. In press.
27. Camic, C.L., T.J. Housh, **J.M. Zuniga**, D. A. Traylor, H.C. Bergstrom, R.J. Schmidt, and G.O. Johnson. Electromyographic and mechanomyographic responses across repeated maximal isometric and concentric muscle actions of the leg extensors. *Journal of Electromyography and Kinesiology*. In press.
28. Camic, C.L., T.J. Housh, **J.M. Zuniga**, D. A. Traylor, H.C. Bergstrom, R.J. Schmidt, and G.O. Johnson. The effects of polyethylene glycosylated creatine supplementation on anaerobic performance measures and body composition. *Journal of Strength and Conditioning Research*. In press.
29. Camic, C.L., T.J. Housh, C.R. Hendrix, **J.M. Zuniga**, H.C. Bergstrom, R.J. Schmidt, and G.O. Johnson. The influence of the muscle fiber pennation angle and innervations zone on the identification of neuromuscular fatigue threshold during cycle ergometry. *Journal of Electromyography and Kinesiology*, 21(1):33-40, 2010.
30. Camic, C.L., T.J. Housh, J.P. Weir, **J.M. Zuniga**, C.R. Hendrix, M. Mielke, G.O. Johnson, D.J. Housh, and R.J. Schmidt. The influences of body-size variables on age-related increases in isokinetic peak torque in young wrestlers. *Journal of Strength and Conditioning Research*, 24(9):2358-2365, 2010.
31. Camic, C.L., C.R. Hendrix, T.J. Housh, **J.M. Zuniga**, M. Mielke, G.O. Johnson, and R.J. Schmidt. The effects of polyethylene glycosylated creatine supplementation on muscular strength and power. *Journal of Strength and Conditioning Research*, 24(12): 3343-3351, 2010.
32. Camic, C.L., T.J. Housh, G.O. Johnson, C.R. Hendrix, **J.M. Zuniga**, M. Mielke, and R.J. Schmidt. An EMG frequency-based test for estimating the neuromuscular fatigue threshold during cycle ergometry. *European Journal of Applied Physiology*, 108 (2):337-45, 2010.
33. Camic, C.L., T.J. Housh, M. Mielke, **J.M. Zuniga**, C.R. Hendrix, G.O. Johnson, R.J. Schmidt, and D. J. Housh. The effects of 4 weeks of an arginine-based supplement on the gas exchange threshold and peak oxygen uptake. *Applied Physiology, Nutrition, and Metabolism*, 35:286-293, 2010.
34. Camic, C.L., T.J. Housh, **J.M. Zuniga**, C.R. Hendrix, M. Mielke, G.O. Johnson, and R.J. Schmidt. Effects of arginine-based supplements on the physical working capacity at the fatigue threshold. *Journal of Strength and Conditioning Research*, 24(5):1306-1312, 2010.
35. Camic, C.L., T.J. Housh, **J.M. Zuniga**, C.R. Hendrix, M. Mielke, G.O. Johnson, and R.J. Schmidt. The influence of electrode orientation on the electromyographic amplitude and mean power frequency versus isometric torque relationships for the vastus lateralis. *Journal of Exercise Physiology-online*, 13(1):10-20, 2010.
36. Hendrix, C.R., T.J. Housh, C.L. Camic, **J.M. Zuniga**, G.O. Johnson, and R.J. Schmidt. Comparing electromyographic and mechanomyographic frequency-based fatigue thresholds to critical torque during isometric forearm flexion. *Journal of Neuroscience Methods*, 194(1):64-72, 2010.
37. Hendrix, C.R., T.J. Housh, G.O. Johnson, M. Mielke, **J.M. Zuniga**, C.L. Camic, and R.J. Schmidt. The effect of epoch length on electromyographic mean power frequency and amplitude versus time relationships. *Electromyography and Clinical Neurophysiology*, 50(5):219-227, 2010.
38. Hendrix, C.R., T.J. Housh, M. Mielke, **J.M. Zuniga**, C.L. Camic, G.O. Johnson, R.J. Schmidt, and D.J. Housh. Acute effects of a caffeine-containing supplement on bench press and leg extension strength and time to exhaustion during cycle ergometry. *Journal of Strength and Conditioning Research*, 24(3):859-865, 2010.
39. Hendrix, C.R., T.J. Housh, M. Mielke, **J.M. Zuniga**, C.L. Camic, G.O. Johnson, R.J. Schmidt, and D.J. Housh. Acute effects of a caffeine-containing supplement on bench press and leg extension

- strength and time to exhaustion during cycle ergometry. *Journal of Strength and Conditioning Research*, 24(3):859-865, 2010.
40. Hendrix, C.R., T.J. Housh, **J.M. Zuniga**, C.L. Camic, M. Mielke, G.O. Johnson, R.J. Schmidt, and D.J. Housh. Mechanomyographic frequency-based fatigue threshold test. *Journal of Neuroscience Methods*, 187(1):1-7, 2010.
  41. Mielke, M., T.J. Housh, C.R. Hendrix, **J.M. Zuniga**, C.L. Camic, R.J. Schmidt, and G.O. Johnson. A test for determining critical heart rate using the critical power model. *Journal of Strength and Conditioning Research*, 25(2): 504-510, 2010.
  42. Camic, C.L., T.J. Housh, M. Mielke, C.R. Hendrix, **J.M. Zuniga**, G.O. Johnson, D.J. Housh, and R.J. Schmidt. Age-related patterns of anthropometric characteristics in young wrestlers. *Medicine and Science in Sport and Exercise*, 41 (5):1014-9, 2009.
  43. Hendrix, C.R., T.J. Housh, G.O. Johnson, M. Mielke, C.L. Camic, **J.M. Zuniga**, and R.J. Schmidt. A new EMC frequency-based fatigue threshold test. *Journal of Neuroscience Methods*, 181 (1): 45-51, 2009.
  44. Hendrix, C.R., T.J. Housh, G.O. Johnson, M. Mielke, C.L. Camic, **J.M. Zuniga**, and R.J. Schmidt. Comparison of Critical Force to EMG Fatigue Thresholds during Isometric Leg Extension. *Medicine and Science in Sport and Exercise*, 41 (4):956-965, 2009.
  45. Hendrix, C.R., T.J. Housh, M. Mielke, **J.M. Zuniga**, C.L. Camic, G.O. Johnson, and R.J. Schmidt. Critical torque, estimated time to exhaustion, and anaerobic work capacity from linear and nonlinear mathematical models. *Medicine and Science in Sport and Exercise*, 41 (12):2185-90, 2009.
  46. Mielke, M., T.J. Housh, C.R. Hendrix, C.L. Camic, **J.M. Zuniga**, R.J. Schmidt, and G.O. Johnson. Oxygen Uptake, Heart Rate, and Ratings of Perceived Exertion at the Physical Work Capacity at the Oxygen Consumption Threshold ( $PWC \dot{V}O_2$ ). *Journal of Strength and Conditioning Research*, 23 (4): 1292-9, 2009.
  47. Chaffin, M., K. E. Berg, **J.M. Zuniga**, Vidya S. Hanumanthu. Pacing pattern in a 30-minute maximal cycling test. *Journal of Strength and Conditioning Research*, 22(6): 2011-2017, 2008

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

1. **Zuniga, J.M.**, C. Harris, T.J. Housh, C.L. Camic, H.C. Bergstrom, Daniel A. Traylor, M. T. Goodman, G.O. Johnson, and R.J. Schmidt. (May, 2012). Neuromuscular parameters for ramp and step incremental cycle ergometer tests. (Presented at the Annual American College of Sports Medicine Conference in San Francisco, California).
2. **Zuniga, J.M.**, T.J. Housh, C.L. Camic, C.R. Hendrix, H.C. Bergstrom, Daniel A. Traylor, G.O. Johnson, and R.J. Schmidt. (June, 2011). A new mechanomyographic amplitude-based fatigue threshold test for cycling. (Presented at the Annual American College of Sports Medicine Conference in Denver, Colorado).
3. **Zuniga, J.M.**, T.J. Housh, C.L. Camic, C.R. Hendrix, H.C. Bergstrom, G.O. Johnson, and R.J. Schmidt. (July, 2010). The relationship between skinfold thicknesses and mechanomyography at different locations on the vastus lateralis during incremental cycle ergometry. (Presented at the National Strength and Conditioning Association Annual Conference in Orlando, Florida).
4. **Zuniga, J.M.**, T.J. Housh, C.L. Camic, C.R. Hendrix, G.O. Johnson, and R.J. Schmidt. (June, 2010). A comparison of fatigue thresholds derived from the amplitude and frequency domains of the electromyographic signal. (Presented at the Annual American College of Sports Medicine Conference in Baltimore, Maryland).
5. **Zuniga, J.M.**, C.R. Hendrix, C.L. Camic, M. Mielke, G.O. Johnson, R.J. Schmidt, and T.J. Housh. (October, 2009). The effects of micronized creatine supplementation on mean and peak power from the Wingate test. (Presented at the Annual Southwest American College of Sports Medicine Conference in San Diego, California).
6. **Zuniga, J.M.**, T. J. Housh, FNCSA, C.L. Camic, M. Mielke, C.R. Hendrix, G.O. Johnson, R.J. Schmidt, and D. J. Housh. (July, 2009). Gender comparisons of anthropometric characteristics of young sprint swimmers. (Presented at the National Strength and Conditioning Association Annual Conference in Las Vegas, Nevada).

7. **Zuniga, J.M.**, C.L. Camic, M. Mielke, C.R. Hendrix, T.J. Housh, G.O. Johnson, R.J. Schmidt. (May, 2009). The effects of parallel versus perpendicular electrode orientations on EMG amplitude and mean power frequency from the biceps brachii. (Presented at the Annual American College of Sports Medicine Conference in Seattle, Washington).
8. **Zuniga, J. M.**, T.J. Housh, C.L. Camic, M. Mielke, C.R. Hendrix, G.O. Johnson, R.J. Schmidt, D.J. Housh. (July, 2008). Validity of fat-free weight equations for estimating mean and peak power in high school wrestlers. (Presented at the National Strength and Conditioning Association Annual Conference in Las Vegas, Nevada).
9. **Zuniga, J. M.**, K. E. Berg, FACSM, J. Noble, J. Harder, M. Chaffin, Vidya S. Hanumanthu (May, 2008). Physiological responses and role of  $\dot{V}O_2$  slow component to interval training with different intensities and durations of work. (Presented at the Annual American College of Sports Medicine Conference in Indianapolis, Indiana).
10. Goodman M. T., **Zuniga J.M.**, and C. Harris. (May, 2012). Gas Exchange Fatigue Thresholds From Ramp Versus Step Incremental Cycle Ergometer Tests (Presented at the Annual American College of Sports Medicine Conference in San Francisco, California).
11. Camic, C.L., T.J. Housh, **J.M. Zuniga**, C.R. Hendrix, H. C. Bergstrom, G.O. Johnson, R.J. Schmidt, and D.J. Housh. (July, 2010). The influence of electrode placement on the physical working capacity at the fatigue threshold. (Presented at the National Strength and Conditioning Association Annual Conference in Orlando, Florida).
12. Bergstrom, H.C., **J.M. Zuniga**, T.J. Housh, C.L. Camic, C.R. Hendrix, G.O. Johnson, and R.J. Schmidt. (July, 2010). The relationship between skinfold thickness and the time and frequency domains of the surface electromyographic signal during cycle ergometry. (Presented at the National Strength and Conditioning Association Annual Conference in Orlando, Florida).
13. Camic, C.L., T.J. Housh, C.R. Hendrix, **J.M. Zuniga**, G.O. Johnson, D.J. Housh, and R.J. Schmidt. (June, 2010). A comparison of fatigue thresholds derived from the frequency domain of the electromyographic signal and gas exchange parameters. (Presented at the Annual American College of Sports Medicine Conference in Baltimore, Maryland).
14. Hendrix, C.R., T.J. Housh, **J.M. Zuniga**, M. Mielke, C.L. Camic, G.O. Johnson, and R.J. Schmidt. (June, 2010). Comparison of a new mechanomyographic frequency-based fatigue threshold test and critical torque. (Presented at the Annual American College of Sports Medicine Conference in Baltimore, Maryland).
15. Camic, C.L., T.J. Housh, **J.M. Zuniga**, M. Mielke, C.R. Hendrix, G.O. Johnson, R.J. Schmidt, and D.J. Housh. (October, 2009). Effects of four weeks of an arginine-based supplement on the ventilatory threshold and peak oxygen uptake. (Presented at the Annual Southwest American College of Sports Medicine Conference in San Diego, California).
16. Hendrix, C.R., T.J. Housh, **J.M. Zuniga**, M. Mielke, C.L. Camic, G.O. Johnson, D.J. Housh, and R.J. Schmidt. (October, 2009). Effects of polyethylene glycosylated creatine supplementation on muscular strength. (Presented at the Annual Southwest American College of Sports Medicine Conference in San Diego, California).
17. Camic, C.L., T.J. Housh, **J.M. Zuniga**, C.R. Hendrix, M. Mielke, G.O. Johnson, R.J. Schmidt, and D.J. Housh. (July, 2009). Effects of four weeks of arginine supplementation on the physical working capacity at the fatigue threshold. (Presented at the National Strength and Conditioning Association Annual Conference in Las Vegas, Nevada).
18. Hendrix, C.R., T.J. Housh, M. Mielke, C.L. Camic, **J.M. Zuniga**, G.O. Johnson, and R.J. Schmidt. (July, 2009). A comparison of critical torque and electromyographic mean power frequency fatigue threshold during isometric leg extension. (Presented at the National Strength and Conditioning Association Annual Conference in Las Vegas, Nevada).
19. Camic, C.L., M. Mielke, C.R. Hendrix, **J.M. Zuniga**, T.J. Housh, G.O. Johnson, R.J. Schmidt. (May, 2009). The effect of electrode orientation on electromyographic amplitude and mean power frequency versus isometric torque relationships. (Presented at the Annual American College of Sports Medicine Conference in Seattle, Washington).
20. Hendrix, C.R., T.J. Housh, G.O. Johnson, M. Mielke, C.L. Camic, **J.M. Zuniga**, and R.J. Schmidt. (May, 2009). Anaerobic work capacity from linear and nonlinear mathematical models. (Presented at the Annual American College of Sports Medicine Conference in Seattle, Washington).

21. Camic, C.L., T.J. Housh, M. Mielke, C.R. Hendrix, **J.M. Zuniga**, G.O. Johnson, D.J. Housh, and R.J. Schmidt. (July, 2008). Anthropometric growth patterns of young wrestlers. (Presented at the National Strength and Conditioning Association Annual Conference in Las Vegas, Nevada).
22. Hendrix, C.R., T.J. Housh, M. Mielke, C.L. Camic, **J.M. Zuniga**, G.O. Johnson, and R.J. Schmidt. (July, 2008). A Comparison of critical force and electromyographic fatigue during isometric muscle actions of the leg extensors. (Presented at the National Strength and Conditioning Association Annual Conference in Las Vegas, Nevada).
23. Mielke, M., T.J. Housh, M.H. Malek, T.W. Beck, C.R. Hendrix, **J.M. Zuniga**, C.L. Camic, R.J. Schmidt, G.O. Johnson, and D.J. Housh. (July, 2008). The effects of a calorie dense high protein supplement on exercise performance and body composition during resistance training. (Presented at the National Strength and Conditioning Association Annual Conference in Las Vegas, Nevada).
24. Schmidt, R.J., M. Mielke, M.H. Malek, T.J. Housh, C.L. Camic, **J.M. Zuniga**, C.R. Hendrix, and G.O. Johnson. (July, 2008). Comparison of army, navy, and marine corps ROTC physical fitness test scores and evaluation of Special Forces Assessment and Selection Success. (Presented at the National Strength and Conditioning Association Annual Conference in Las Vegas, Nevada).
25. Mielke, M., T.J. Housh, C. R. Hendrix, C.L. Camic, **J.M. Zuniga**, R.J. Schmidt, and G.O. Johnson. (May, 2008). Oxygen uptake, heart rate, and ratings of perceived exertion at the PWC $\dot{V}O_2$ . (Presented at the Annual American College of Sports Medicine Conference in Indianapolis, Indiana).
26. Camic, C.L., M. Mielke, C. R. Hendrix, **J. Zuniga**, G.O. Johnson, and T.J. Housh. (May, 2008). Cross-cultural validation of isokinetic peak torque prediction equations on young American wrestlers. (Presented at the Annual American College of Sports Medicine Conference in Indianapolis, Indiana).

### **PAPER REVIEWS**

- A new layered sensor for simultaneous measurement of EMG, MMG and oxygen consumption at same position. *Article reviewed on September 2<sup>nd</sup>, 2013 for Medical & Biological Engineering & Computing.*
- A Case Study: The Self-Determination Theory and the integration of smartphone technology to enhance adherence to home exercise programs. *Article reviewed on July 24<sup>th</sup>, 2013 for the Journal of Athletic Medicine.*
- Are Intergenerational Exercise Classes Threatening or Motivating for Older Adults? *Article reviewed on June 17<sup>th</sup>, 2013 for the Journal of Athletic Medicine.*
- Fluoroscopy in Hip Arthroscopy. *Article reviewed on April 24<sup>th</sup>, 2013 for the Journal of Athletic Medicine.*
- Gender specific responses to self-paced, high-intensity interval training with variable recovery periods. *Article reviewed on February 1<sup>st</sup>, 2013 for the Journal of Strength and Conditioning Research.*
- The age-related decline in Olympic distance triathlon performance differs between males and females. *Article reviewed on November 28<sup>th</sup>, 2011 for The Chinese Journal of Physiology.*
- Design of a Portable and Automated Acquisition System for Monitoring Rehabilitation Using EMG Biosensor. *Article review on March 4<sup>th</sup>, 2011 for the Journal Sensors.*
- Proposed method for estimating electromyographic and heart-rate fatigue thresholds from a single treadmill test. *Article reviewed on December 30<sup>th</sup>, 2011 for Muscle & Nerve.*

### **PUBLIC PRESENTATIONS**



- “Muscle Fiber Typing in Endurance Athletes” Competitive Magazine press question. Expert advice via phone.
- “Nutrition and Exercise for the mom and child” Liberty Elementary School, Completely KIDS Program, Omaha NE. (2012-2013)
- “Nutritional considerations before, during, and after a triathlon event” University of Nebraska at Omaha, Omaha NE. (2010)
- “Pacing strategies during different triathlons distances” University of Nebraska at Omaha, Omaha NE. (2009)
- “Exercise and Nutrition”, Chicano Awareness Center, Omaha, NE. (2006)
- “Fitness Testing and Weight Loss”, Interfaith Health Service, Omaha, NE (2006)

#### **GRANTS /FUNDING (Total to date: \$407.00)**

2013 (Fall)	<u>PI</u> - \$4,000. <i>New Submaximal Fatigue Threshold Tests for Muscular Function</i> . NASA Nebraska Space Grant & EPSCoR offices (funded).
2013 (Fall)	<u>PI</u> - \$4,000. <i>The Effect of Muscle Temperature in Neuromuscular Fatigue Thresholds</i> . NASA Nebraska Space Grant & EPSCoR offices (funded).
2013 (Fall)	<u>PI</u> - \$4,000. <i>Neuromuscular, Metabolic, and Muscle Morphology Contributions to Fatigue of the Quadriceps between Individuals with and without a History of Knee Injuries</i> . NASA Nebraska Space Grant & EPSCoR offices (funded).
2012 (Fall)	<u>PI</u> - \$10,000. <i>Assessment of neuromuscular fatigue and muscular function using electromyography and mechanomyography</i> . Christopher Columbus Foundation-U.S. Chamber of Commerce Life Sciences Awards (pending).
2012 (Fall)	<u>PI</u> - \$15,000. <i>Differences in Neuromuscular Fatigue, Strength, and Muscle Morphology of the Quadriceps between Individuals with and without a History of Arthroscopic Partial Meniscectomy</i> . The Dr. George F. Haddix President’s Faculty Research Fund (not funded).
2012 (Fall)	<u>PI</u> - \$38,372. <i>Neuromuscular and Metabolic Responses to Interval Training with Different Durations of Exercise</i> . Nebraska EPSCoR First Award (not funded).
2012 (Fall)	<u>PI</u> - \$4,300. <i>Neuromuscular and Metabolic Responses to Interval Training with Different Durations of Exercise</i> . Faculty research fellowship program summer of 2013 (not funded).
2010 (Fall)	<u>Co-Investigator and Study Coordinator (effort 20%)</u> - \$100,000, <i>The effects creatine supplementation on exercise performance and lean body mass</i> . General Nutrition Company (GNC), Pittsburgh, Pennsylvania, (awarded, GNC-2010-002; P.I.: Terry J. Housh, PhD).
2009 (Summer)	<u>Co-Investigator and Study Coordinator (effort 20%)</u> - \$60,000, <i>The effects of 28 days of creatine supplementation on anaerobic capabilities and muscle strength</i> . General Nutrition Company (GNC), Pittsburgh, Pennsylvania, (awarded, GNC-2009-001B; P.I.: Terry J. Housh, PhD).



- 2009 (Summer)      Co-Investigator - \$60,000. *The effects of 1 week of creatine supplementation on anaerobic capabilities and muscle strength.* General Nutrition Company (GNC), Pittsburgh, Pennsylvania, (awarded, GNC-2009-001A; P.I.: Terry J. Housh, PhD).
- 2008 (Fall)        Co-Investigator - \$90,000. *The Effects of Two Different Arginine Based Formulations on the Physical Working Capacity at Neuromuscular Fatigue Threshold.* General Nutrition Company (GNC), Pittsburgh, Pennsylvania, (awarded, GNC-2008-007; P.I.: Terry J. Housh, PhD).
- 2008 (Spring)     Co-Investigator - \$45,000. *The Acute Effects of TPB™ on Endurance Performance and Muscular Strength,* General Nutrition Company (GNC), Pittsburgh, Pennsylvania, (awarded, GNC-2008-001B; P.I.: Terry J. Housh, PhD).
- 2007 (Fall)        Co-Investigator - \$30,000. Extension Arm to Spring 2007 study: *The effects of a calorie dense high protein supplement on body composition and exercise performance during resistance training.* General Nutrition Company (GNC), Pittsburgh, Pennsylvania, (awarded, GNC-2006-008; P.I.: Terry J. Housh, PhD).

### **HONORS AND AWARDS**

- Editorial Board Member of Journal of Athletic Medicine (2013 to present)
- Minority Scholarship from the National Strength and Conditioning Association Foundation (2009-2010).
- Selected as a member of the U.S. Pharmacopeial Convention Arginine Review Expert Panel (2010-2015).

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