

**W. Jeffrey Armstrong, Ph.D.**  
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## EDUCATION

- 1995-1998 Ph.D., *Exercise Physiology*  
(with added emphasis in *Research Methods and Statistical Measures*)  
**The University of Toledo**, Toledo, OH  
Minor: *Human Anatomy*  
**Medical College of Ohio**, Toledo OH
- 1985-1986 M.S., *Exercise Physiology*  
**West Virginia University**, Morgantown, WV
- 1981-1985 B.S., *Geology*  
**West Virginia University**, Morgantown, WV

## TEACHING EXPERIENCE

- 2011-present Associate Professor, Tenured, **Western Oregon University**
- 2008-2011 Assistant Professor, **Western Oregon University**
- PE 111 Beginning Weight Training
  - PE 113 Intermediate Weight Training
  - PE 230 Foundations of Exercise Science
  - PE 409 Practicum
  - PE 473 Physiology of Exercise
  - PE 485 Exercise Testing & Prescription
  - PE 487 Advanced Topics in Exercise Physiology
  - PE 488 Exercise Motivation & Adherence
- 2005-2008 Associate Professor, **Hope College**
- KIN 200 Human Anatomy
  - KIN 221 Anatomical Kinesiology
  - KIN 383 Mechanical Analysis of Human Movement
  - KIN 499 Special Studies in Exercise Science
- 2004-2005 Visiting Assistant Professor, **Hope College**
- KIN 200 Human Anatomy
  - KIN 221 Anatomical Kinesiology
  - KIN 383 Mechanical Analysis of Human Movement
- 2004 Associate Professor, Tenured, **Eastern Michigan University**
- 1999-2004 Assistant Professor, **Eastern Michigan University**
- PEGN 210 Lifetime Wellness and Fitness
  - PHED 440 Tests and Measurement in Physical Education
  - PHED 505 Basic Statistics in Physical Education
  - PHED 592 Advanced Human Physiology for Sports Medicine
  - PHED 592 Advanced Exercise Physiology for the Physical Educator
  - PHED 677 Research, Design, and Theory in Physical Education
  - SPMD 278 Human Anatomy—Sports Medicine
  - SPMD 279 Human Physiology—Sports Medicine
  - SPMD 279 Anatomy & Physiology for Health Professionals
  - SPMD 431 Pathology for Sports Medicine
  - RECR 479 Grant Writing in Recreation

1998-1999 *Visiting Lecturer, Eastern Michigan University*  
PEGN 210 Lifetime Fitness and Wellness  
PHED 300 Physiology of Exercise  
PHED 440 Tests and Measurements in Physical Education  
PHED 505 Basic Statistics in Physical Education  
PHED 592 Advanced Human Physiology for Sports Medicine  
PHED 677 Research, Theory, and Design in Physical Education  
SPMD 278 Human Anatomy—Sports Medicine  
SPMD 279 Human Physiology—Sports Medicine  
SPMD 410 Lab Techniques in Human Performance Analysis

1998 *Adjunct Assistant Professor, The University of Toledo*  
PED 3520 Exercise Physiology  
*Cadaver preparation for PED 2510 (Anatomy)*

1995-1998 *Graduate Teaching Assistant, The University of Toledo*  
PED 250 Anatomy & Physiology I (lecture & lab)  
PED 251 Anatomy (lab & provided guest lectures)  
PED 252 Anatomy & Physiology II (lab & provided guest lectures)  
PED 356 Exercise Physiology (provided guest lectures)  
PED 108 Exercise & Health (lecture & lab)  
PED 100 Beginning Bowling  
Beginning Tennis  
Beginning Weight Training  
Personal Conditioning  
PED 1080 Exercise & Health (lecture & lab)  
PED 1010 Beginning Badminton  
Beginning Tennis  
PED 2530 Human Physiology (lab)

1996-1997 *Instructor, The University of Toledo, Adult Continuing Education*  
Co-Ed Weight Training  
Walking  
Weight Training for Women

1993-1994 *Instructor, Tag-Team Personal Fitness Company, Instructor Training School*  
Developed and taught preparation course for the American Council on  
Exercise (A.C.E.) Personal Trainer Certification Exam.

1993 *Instructor, Community College of Allegheny County, Adult Continuing Education*  
Weight Training for Men and Women

1990-1992 *Instructor in Physical Education, Ambassador University*  
PE 100 Basic Weight Training I/II  
Cross-Country  
Fitness/Cross-Country  
Flag Football  
Outdoor Recreation (Mountain Biking)  
Racquet Sports (Tennis, Badminton, Racquetball)  
Volleyball

## RELATED WORK EXPERIENCE

1994-1995 *Personal Trainer, Custom-Fit, Murrysville, PA*  
*Personal Trainer, Pittsburgh Jewish Community Center, Pittsburgh, PA*  
1992-1994 *Manager, Personal Trainer, Education Coordinator, Tag-Team Personal Fitness Center, McMurray, PA*  
1992 *Fitness Director, Meadows Fitness & Racquet Club, Washington, PA*

1989-1990 *Personal Trainer, **Body Elite**, New York, NY*  
1988-1989 *Exercise Physiologist, **Cardio-Fitness Corporation**, New York, NY*  
1987 *Personal Trainer, **Bodies**, Pittsburgh, PA*  
1986-1987 *Director of Health & Fitness, Sales, **Manor Courts Health & Racquetball Club**, Pittsburgh, PA*  
1986-1987 ***American Corporate Health Programs**  
Exercise Technician, **Westinghouse "Lifestyles" Fitness Center**, Pittsburgh, PA  
Intern, **Alcoa Preventative Medical Program**, Pittsburgh, PA*

#### **SERVICE TO WESTERN OREGON UNIVERSITY:**

2011-present Member, **Personnel Review Committee**, Division of Health and Physical Ed.  
2009-present Member, **Academic Requirements Committee**  
2008-present Member, **Institutional Review Board**  
2008-2011 Chair, **Curriculum Committee**, Division of Health and Physical Ed.

#### **SERVICE TO HOPE COLLEGE:**

2007-2008 Chair, **Human Subjects Review Board**  
2005-2007 Member, **Study Abroad Committee**  
2005-2006 Member, **Health Education Minor Committee**  
2004-2008 Coordinator, Human Anatomy Laboratory  
2004-2008 Coordinator, of Biomechanics Laboratory

#### **SERVICE TO EASTERN MICHIGAN UNIVERSITY:**

##### **University:**

1999-2004 Member, **Faculty Council**  
2000-2004 Member, **Faculty Council Executive Board**  
Chair, **Intercollegiate Athletics Advisory Committee**  
Chair, **IAAC Sub-committee for Student-Athlete Welfare**  
2000-2002 Member, **Graduate Council**  
Member, **Academic Dismissal Appeals Committee**  
2001 Member, **Graduate Council Executive Board**  
Interim Chair, **Academic Dismissal Appeals Committee**  
2001/2004 Member, **Graduate Student Experience Cross-Cutting Strategic Planning Committee (FC Representative)**

##### **College of Education:**

2000-2004 Member, **College of Education Human Subjects Review Committee**

##### **Department of Health, Physical Education, Recreation, and Dance:**

2000-2004 **Exercise Science Graduate Program Coordinator**  
Co-Chair, **HPERD Graduate Committee**  
1999-2003 **HPERD Advisory Council**  
1999-2000 **Exercise Science Program Coordinator**

#### **PUBLICATIONS & PRESENTATIONS**

##### **Journal Articles**

**W.J. Armstrong.** Wavelet-based intensity analysis of the mechanomyograph and electromyograph during the H-reflex. *European Journal of Applied Physiology*. August, 2014. DOI 10.1007/s00421-014-2975-x

**W.J. Armstrong, J.D. Welch, J.A. Yaggie, F. Borg, and T.W. Beck.** Technical Note: Application of the "Intensity Analysis" to High-Resolution Accelerometry. *Clinical Kinesiology*. 68(1):1-8, 2014.

J.A. Yaggie, **W.J. Armstrong**, I.K. Ratz, and S.J. McGregor. Validation of VO<sub>2Peak</sub> and performance using a SciFit™ Arm Ergometer. *Open Journal of Therapy and Rehabilitation*. 2(1):33-37, 2014. dx.doi.org/10.4236/ojtr.2014.21007

- J.A. Yaggie and **W.J. Armstrong**. Effects of semi-rigid ankle orthoses on tasks related to athletic performance following a bout of fatiguing exercise. *Open Journal of Therapy and Rehabilitation*. 1(2):10-16, 2013. dx.doi.org/10.4236/ojtr.2013.12003
- Technical Note: Clinical Application of the "Intensity Analysis" Using the R Open Source Software. **W. J. Armstrong**, T. W. Beck, J. D. Welch, and F. Borg. *Clinical Kinesiology*. 65(3):57-67, 2011.
- Wavelet-based intensity analysis of the mechanomyographic signals during single-legged stance following fatigue. **W. J. Armstrong**. *Journal of Electromyography and Kinesiology*. 21:803-810, 2011. doi:10.1016/j.jelekin.2011.05.011
- Lower extremity fatigue increases complexity of postural control during a single-legged stance. S. J. McGregor, **W. J. Armstrong**, J. A. Yaggie, E. M. Bollt, R. Parshad, J. J. Bailey, S. M. Johnson, A. M. Goin, and S. R. Kelly. *Journal of NeuroEngineering and Rehabilitation*. 8:43, 2011. doi:10.1186/1743-0003-8-43
- The acute effect of whole-body vibration on the vertical jump height. **W. J. Armstrong**, D. C. Grinnell, and G. S. Warren. *Journal of Strength and Conditioning Research* 24(10):2835-2839, 2010.
- Reliability of mechanomyography and triaxial accelerometry in the assessment of balance. **W. J. Armstrong**, J. A. Yaggie, S. J. McGregor, J. Bailey, S. M. Johnson, A. M. Goin, and S. R. Kelly. *Journal of Electromyography and Kinesiology*. 2010. doi:10.1016/j.jelekin.2010.02.002.
- Clinical Applications of Mechanomyography: Technical Brief. R. D. Hill and W. J. Armstrong. *Clinical Kinesiology* 63(4):49-52, 2009.
- The acute effect of whole-body vibration on the Hoffmann reflex. **W. J. Armstrong**, H. N. Nestle, D. C. Grinnell, L. D. Cole, E. L. Van Gilder, G. S. Warren, and E. A. Capizzi. *Journal of Strength and Conditioning Research* 22(2):471-476, 2008.
- The effects of generalized fatigue on the Hoffmann reflex: Preliminary results. **W. J. Armstrong**, D. C. Grinnell, L. D. Cole, and E. L. Van Gilder. *Clinical Kinesiology*. 60(1):1-4, 2006.
- The effects of chondroitin sulfate supplementation on indices of muscle damage induced by eccentric arm exercise. W. A. Braun, M. G. Flynn, **W. J. Armstrong**, and D. E. Jacks. *Journal of Sports Medicine and Physical Fitness*, 45(4):553-60, 2005.
- Effects of lower extremity fatigue on indices of balance. J. A. Yaggie and **W. J. Armstrong**. *Journal of Sport Rehabilitation*. 13:12-322, 2004.
- Exercise as a treatment for osteoarthritis of the hands in the elderly. C. Lefler and **W. J. Armstrong**. *Clinical Kinesiology*. 58(2):1-6, 2004.
- Effects of a yoga-based home-exercise program on flexibility in older women. **W. J. Armstrong** and J. M. Scott Smedley. *Clinical Kinesiology*. 57(4): 1-6, 2003.
- Flexibility outcomes of children with spastic cerebral palsy during a semester of play-based therapy. J. A. Yaggie and **W. J. Armstrong**. *Clinical Kinesiology*. 56(2): 19-24, 2002.
- Reliability of an exercise protocol designed to evaluate resistance exercise performance. C. P. Lambert, D. E. Armstrong, D. Jacks, **W. J. Armstrong**, and M. G. Flynn. *Journal of Strength and Conditioning Research*. 16(1):149-151, 2002.
- Spastic diplegic cerebral palsy: an introduction to its characteristics, assessment and treatment options. J. A. Yaggie and **W. J. Armstrong**. *Clinical Kinesiology*. 55(4):75-80, 2001.
- The effect of commercial thermogenic weight loss supplement on body composition and energy expenditure. **W. J. Armstrong**, P. Johnson, and S. Duhme. *Journal of Exercise Physiology online*. 4(2):28-34, 2001.
- The effect of training while breathing oxygen-enriched air on time-to-exhaustion and aerobic capacity. **W. J. Armstrong**, D. Jacks, J. Sowash, and F. F. Andres. *Journal of Exercise Physiology online*. 3(2):12-20, 2000.

The effects of play-based therapy on parameters of balance. J. A. Yaggie and **W. J. Armstrong**. *Clinical Kinesiology*. 53(4):91-95, 1999.

## Abstracts and Presentations

Reliability of intensity analysis of MMG and EMG during incremental stimulation of the triceps surae. **W. J. Armstrong**. *Medicine and Science in Sport and Exercise* 44(5):S456, 2012.

Morlet-vonTscharner intensity analysis of mechanomyographic signals during single-legged stance following fatigue. **W.J. Armstrong**. *Medicine and Science in Sport and Exercise*, 42(5).

Fatiguing Exercise Increases Complexity of Postural Control: Control Entropy of High-Resolution Accelerometry. McGregor, **W. J. Armstrong**, J. A. Yaggie, E. M. Bollt, R. Parshad, J. J. Bailey, S. M. Johnson, A. M. Goin, and S. R. Kelly. *Medicine and Science in Sport and Exercise*, 42(5).

Analysis of mechanomyography and electromyography during the h-reflex using a wavelet-based intensity analysis. J.D. Welch, J.R. Jones, and **W.J. Armstrong**. (Poster, ACSM-NW, Eugene, OR, April 8, 2011).

Mechanomyography, electromyography, and oxygen consumption during graded cycle ergometry. J.D. Welch, J.R. Jones, S.D. Harding, **W.J. Armstrong**. Abstract, National Conference on Undergraduate Research, Ithaca NY—accepted, but not presented).

Reliability of triaxial accelerometry and mechanomyography in the assessment of balance and the effects of fatigue. **W. J. Armstrong**, S. J. McGregor, E. M. Bollt, J. Bailey, S. M. Johnson, A. M. Goin, and S. R. Kelly. *Medicine and Science in Sport and Exercise*, 42(5):S412, 2010.

Mechanomyography and H-reflex responses to electrical stimulation. R. D. Hill, **W. J. Armstrong**, N. A. Stegenga, D. Forro, K. Bangert, & J. Eggleston. *Medicine and Science in Sport and Exercise*, 42(5):S10, 2010.

The effects of fatigue on measures of balance using high-resolution accelerometry and mechanomyography. J. J. Bailey, S. M. Johnson, A. M. Goin, S. R. Kelly, **W. J. Armstrong**, S. J. McGregor, & E. M. Bollt. (Poster, National Conference on Undergraduate Research, Missoula, MT, April, 2010.)

Reliability of high-resolution accelerometry and mechanomyography in the assessment of balance. S. M. Johnson, J. Bailey, A. M. Goin, S. R. Kelly, **W. J. Armstrong**, S. J. McGregor, & J. A. Yaggie. (Poster, National Conference on Undergraduate Research, Missoula, MT, April, 2010.)

Anthropometric measures for sensor placement in e-textile based mechanomyography. J. R. Jones, J. D. Eggleston, & **W. J. Armstrong**. (Poster, National Conference on Undergraduate Research, Missoula, MT, April, 2010.)

Wireless e-technology accelerometry in the measurement of mechanomyography. J. D. Eggleston and J. R. Jones, & **W. J. Armstrong**. (Poster, National Conference on Undergraduate Research, Missoula, MT, April, 2010.)

Linear and Control Entropy Analysis of Electromyography and Mechanomyography Signals during the Wingate Anaerobic Test. **W. J. Armstrong**, E. M. Bollt, M. E. GeBraad, N. A. Stegenga & S. J. McGregor. *Medicine and Science in Sport and Exercise*, 41(5):S196, 2009.

Triaxial Accelerometry in the Analysis of Sprint Gait. N. A. Stegenga, **W. J. Armstrong**, S. J. McGregor, & E. M. Bollt. (Poster, National Conference on Undergraduate Research, La Crosse, WI, April, 2009).

Control entropy of mechanomyogram (MMG) and electromyogram (EMG) during fatiguing isometric muscle actions. McGregor S.J., **Armstrong W.J.**, Bollt E.M. *FASEB J* 22:1220, 2008.

Reliability of time-on-ball test. J. Bruinsma, M. Gebraad, R. Klein, and **W.J. Armstrong**. (Poster, National Conference on Undergraduate Research, Salisbury, MD April 2008).

- The acute effect of stretching on the Hoffmann reflex. M. Ebert, D. Forro, R. Hill, and **W.J. Armstrong**. (Poster, National Conference on Undergraduate Research, Salisbury, MD April 2008).
- Analysis of electromyography and mechanomyography signals during the Wingate anaerobic test. M. Gebraad, N. A. Stegenga, R. Klein, **W.J. Armstrong**, S. J. McGregor, and E. M. Bollt. (Poster, National Conference on Undergraduate Research, Salisbury, MD April 2008).
- Mechanomyography and electromyography responses to electrical stimulation. N. A. Stegenga, M. Ebert, M. Gebraad, **W.J. Armstrong** and K. Cole. (Poster, National Conference on Undergraduate Research, Salisbury, MD April 2008).
- Reliability and application of an inexpensive accelerometer in mechanography. **W. J. Armstrong**, M. Goad, R. Baaken, and M. A. Abrahantes. (Slide presentation, MWACSM Annual Meeting, Columbus, OH, October, 2007).
- The acute effect of whole-body vibration on the vertical jump height. D. C. Grinnell, G. S. Warren, and **W. J. Armstrong**. (Slide presentation, MI-ACSM meeting, Gaylord, MI, February, 2007; Poster, National Conference on Undergraduate Research, San Raphael, CA, April, 2007).
- The acute effect of whole-body vibration on the Hoffmann reflex. H. N. Nestle, D. C. Grinnell, L. D. Cole, G. S. Warren, and **W. J. Armstrong**. (Slide presentation, MI-ACSM meeting, Gaylord, MI, February, 2007; Poster, National Conference on Undergraduate Research, San Raphael, CA, April, 2007).
- Analysis of sprinting gait for three different skill levels. M. Ebert, M. Gebraad, and **W. J. Armstrong**. (Poster, National Conference on Undergraduate Research, San Raphael, CA, April, 2007).
- The effect of quadriceps fatigue on electromyography and mechanomyography. E. Mitteer, A. Haynes, and **W. J. Armstrong**. (Poster, National Conference on Undergraduate Research, San Raphael, CA, April, 2007).
- Inter-sport comparison of Hoffmann reflex in division III college athletes and non-athletes. L. D. Cole, D. C. Grinnell, E. L. Van Gilder, and **W. J. Armstrong**. (Slide presentation, MI-ACSM meeting, Gaylord, MI, February 9, 2006; Poster, National Conference on Undergraduate Research, Asheville, KY, April 7, 2006).
- The effects of generalized fatigue on the Hoffmann reflex: Preliminary results. D. C. Grinnell, L. D. Cole, and E. L. Van Gilder, and **W. J. Armstrong**. (Slide presentation, MI-ACSM meeting, Gaylord, MI, February 9, 2006; Poster, National Conference on Undergraduate Research, Asheville, KY, April 7, 2006).
- Acute effect of whole-body vibration on H-reflex: preliminary data. H. Nestle, L. Cole, D. Grinnell, E. Van Gilder, G. Warren, E. Hansen, and **W. Jeffrey Armstrong**. (Slide presentation, MI-ACSM meeting, Gaylord, MI, February 10, 2006).
- The effects of lower extremity fatigue on indices of balance. **W. J. Armstrong** and J. A. Yaggie. *Medicine and Science in Sports and Exercise*. 35(5):S315, 2003.
- The effects of visual biofeedback on indices of balance. J. A. Yaggie and **W. J. Armstrong**. *Medicine and Science in Sports and Exercise*. 35(5):S314, 2003.
- Microgravity-induced deconditioning and atrophy of upper-extremity muscle in humans. C.D. Markert and W.J. Armstrong (Poster, Midwest ACSM Meeting, Columbus, OH, October 15, 2001)
- The effect of thermogenic weight loss supplement on energy intake and blood chemistries in obese adults. S. Duhme, W. J. Armstrong, and P. Johnson. *Medicine and Science in Sports and Exercise*. 33(5):S337, 2001.
- Thermogenic effect and body composition changes with weight loss supplement in obese adults. P. Johnson, **W. J. Armstrong**, and S. Duhme. *Medicine and Science in Sports and Exercise*. 33(5):S337, 2001.
- The effects of play therapy on the flexibility of children with cerebral palsy. **W. J. Armstrong** and J. A.

- Yaggie. *Medicine and Science in Sports and Exercise*. 33(5):S248, 2001.
- Reproducibility of thoracic electrical bioimpedance (TEB) derived stroke index (SI). M.A. Saval, **W.J. Armstrong**, T.N. Ziegenfuss, and J.K Ehrman. *Medicine and Science in Sports and Exercise*. 33(5):S209, 2001.
- Reproducibility of heart rate variability measures during exercise. D. Kerrigan, **J. Armstrong**, S. Levine, and J. Ehrman. *Medicine and Science in Sports and Exercise*. 33(5):S202, 2001.
- No influence of blood glucose on salivary cortisol at high intensity exercise. D. E. Jacks, J. Anning, T. McLoughlin, **J. Armstrong**, J. Yaggie, and F. Andres. *Medicine and Science in Sports and Exercise*. 32(5):S272, 2000.
- The effect of breathing oxygen-enriched air on time to exhaustion and aerobic capacity. **W. J. Armstrong** (Dissertation, 1998; The University of Toledo Graduate Research Symposium, 1998—slide, *Medicine & Science in Sport and Exercise*. 31(5):S1032, 1999)
- Plasma hormone concentrations after buccal administration of androstenedione in healthy young males. S. McGregor, **W. J. Armstrong**, J. A. Yaggie, S. Kolazinski. The University of Toledo, Toledo, OH. *Medicine & Science in Sport and Exercise*. 31(5):S460, 1999.
- Reliability of a resistance exercise protocol designed to evaluate the effectiveness of ergogenic aids. C. P. Lambert, D. E. Armstrong, D. Jacks, **W. J. Armstrong**, and M. G. Flynn. *Medicine & Science in Sport and Exercise*. 31(5):S227, 1999.
- Effect of oral chondroitin sulfate supplements on muscle soreness, creatine kinase, and markers of inflammation. M. G. Flynn\*, W. A. Braun\*, **J. Armstrong**, C. P. Lambert, D. Jacks, J. Yates, and E. Mylona. Exercise Physiology Lab, University of Toledo, Toledo, OH and Wastl Human Performance Lab, Purdue University, West Lafayette, IN. *Medicine & Science in Sport and Exercise*. 30(5): S103, 1998.
- No effect of chondroitin sulfate supplementation on factors associated with muscle damage and inflammation induced by eccentric arm curl exercise. W. Braun, **J. Armstrong**, C. Lambert, D. Jacks, J. Yates, E. Mylona, M. Flynn (FACSM). University of Toledo, Toledo, OH and Purdue University, West Lafayette, IN. (Midwest ACSM, 1997--slide)
- Influence of hindlimb suspension induced alterations in stress protein 70 content. D. H. Choi, M. G. Flynn, FACSM, T. M. Brickman\*, E. Sanchez\*, W. A. Braun, C. P. Lambert, J.-S. Ju, P. M. Arnos, and **W. J. Armstrong**. Exercise Physiology Laboratories, The University of Toledo and Dept. of Pharmacology, \*Medical College of Ohio, Toledo, OH. *Medicine & Science in Sport and Exercise*. 29(5): S264, 1997.
- Ventilatory entrainment to walking while swinging hand-held weights. **W. J. Armstrong**, J. Schumm, F. F. Andres, The University of Toledo, Toledo, OH 43606. (*Medicine & Science in Sport and Exercise*. 29(5): S288, 1997; The University of Toledo Graduate Research Symposium, 1997--slide; Midwest ACSM, 1996--poster)

## GRANTS & RESEARCH FUNDING

- 2011 National Institutes of Health-- NIAMS Small Grant Program For New Investigators (R03), \$126,000 (not scored). Mechanisms of Whole-body Vibration Therapy in Neuromuscular Disease. **W. J. Armstrong**.
- 2010 WOU Foundation, \$1020 (awarded). *EMG-MMG-EEG coherence and corticomuscular coupling*. **W. J. Armstrong**.
- 2010 National Science Foundation-REU, \$299,420 (denied). *Interdisciplinary Research Experiences for Undergraduates in the Promotion and Quantification of Active Communities: A STEM Approach to Combating Hypokinetic Diseases*. **W. J. Armstrong** and D. Lopez-Cevallos.
- 2010 National Science Foundation-TUES, \$199,437 (denied) *Transforming Undergraduate Exercise Science Education: An Inquiry-Based Model for the Exercise Science Curriculum*. **W. J. Armstrong** and B. Caster.

- 2010 Western Oregon University, Student Technology Fee Committee, \$967. *PE 487—Adv. Topics-Exercise Physiology: Wireless e-Technology Accelerometry in the Measurement of Human Movement.* **W. J. Armstrong.**
- 2009 National Science Foundation-REU, \$306,900 (returned)  
*Interdisciplinary Research Experiences for Undergraduates in the Applied Use of Mechanomyography and Accelerometry in Human Movement.* **W. J. Armstrong**
- 2009 National Institutes of Health-AREA, \$322,973 (not scored)  
*Mechanomyography Using Wireless e-Technology Accelerometry in the Measurement of the Mechanical Activity of Skeletal Muscle.* **W. J. Armstrong.**
- 2009 National Science Foundation-MRI-R<sup>2</sup>, \$212,828 (denied)  
*Western Oregon University Exercise Physiology Laboratory Expansion.* **W. J. Armstrong.**
- 2009 National Science Foundation-CCLI, \$198,320 (returned)  
*An inquiry-based model for the exercise science curriculum.* **W. J. Armstrong, B. Caster, T. Twyman, and E. Baumgardner.**
- 2009 Western Oregon University, Student Technology Fee Committee -- \$6267  
*Biopac MP150.* **W. J. Armstrong.**
- 2008 American Kinesiotherapy Association -- \$4500  
*Microstrain G-Link Accelerometry System for Gait Analyses.* **W. J. Armstrong.**
- 2007 National Science Foundation, \$100,655 (declined)  
*An inquiry-based model for the mechanical assessment of human movement.* **W. J. Armstrong.**
- 2007 Howard Hughes Medical Institute -- \$10,000  
*Mechanomyography Using Accelerometry in the Measurement of the Mechanical Activity of Skeletal Muscle.* **W. J. Armstrong and M. A. Abrahantes.**
- 2007 Hope College, Instruction Technology Innovation Award -- \$3000  
*Dartfish Software.* **W. J. Armstrong.**
- 2007 Hope College, The Carl Frost Center for Social Science Research Faculty-Student Collaborative Research Grant -- \$2000  
*Measures of muscle activity and fatigue using mechanomyography and electromyography.* **W. J. Armstrong.**
- 2007 Hope College, The Carl Frost Center for Social Science Research Faculty-Student Collaborative Research Grant -- \$1175  
*Effects of Dance Dance Revolution training on selected balance and agility tasks.* **K. Brumels and W. J. Armstrong.**
- 2006 National Science Foundation, \$99,555 (declined)  
*An inquiry-based model for the mechanical assessment of human movement.* **W. J. Armstrong and F. Kolkhorst.**
- 2006 Hope College, Strosacker Faculty Development Fund -- \$2,400  
*The effects of an 8-week WBV training program for Division III women's basketball players.* **W. J. Armstrong and D. C. Grinnell.**
- 2005 Hope College, The Carl Frost Center for Social Science Research Faculty-Student Collaborative Research Grant -- \$800  
*Effects of whole-body vibration on H-reflex and other measures of neuromuscular activity.* **W. J. Armstrong.**
- 2005 Hope College, The Carl Frost Center for Social Science Research Faculty-Student Collaborative Research Grant -- \$2000  
*Student Stipends for H-reflex and Whole-Body Vibration Research, Spring 2006.* **W. J. Armstrong.**
- 2005 Hope College, Instruction Technology Innovation Award -- \$5000  
*Ariel APAS-XP Software.* **W. J. Armstrong.**
- 2001 Eastern Michigan University, Graduate Studies and Research Support Fund -- \$2,135  
*Sweat Rates in Patients with Multiple Sclerosis.* **W. J. Armstrong and P. M. Johnson.**
- 2000 National Science Foundation \$49,196 (declined)  
*Ruth Boughner Applied Physiology Laboratory Enhancement.* **W. J. Armstrong.**
- 2000 National Institutes of Health/A.R.E.A. -- \$126,482 (declined)  
*Frequency of resistance training in older adults.* **W. J. Armstrong, S. Levine.**

- 2000 Eastern Michigan University, Graduate Studies and Research Support Fund -- \$500  
*Microgravity-induced deconditioning and atrophy of upper extremity muscle in humans.* **W. J. Armstrong** and C. Markert.
- 2000 Phoenix Laboratories -- \$13,778  
*The effectiveness of commercial thermogenic weight loss supplement on fat loss during aerobic training in overweight adults.* **W. J. Armstrong.**
- 2000 Eastern Michigan University, Office of Research Development/Dedicated Time for Proposal Development. -- \$1,600  
*Ruth Boughner Applied Physiology Laboratory Enhancement.* **W. J. Armstrong.**
- 1999 Eastern Michigan University/Provost's New Faculty Research Award -- \$5,000
- 1998 Experimental and Applied Sciences/Central Park West Rehabilitation -- \$3,000  
*Hormonal responses to acute and chronic supplementation with androstenedione in strength trained young males.* S. J. McGregor, **W. J. Armstrong**, J. A. Yaggie.
- 1997 The University of Toledo/deArce Memorial Endowment Fund -- \$2,500  
*The effect of breathing oxygen-enriched air on time to exhaustion and aerobic capacity.* F. F. Andres, **W. J. Armstrong**, D. Jacks, and J. Sowash.

## RESEARCH IN PROGRESS

Intensity analysis of high-resolution accelerometry during single-legged stance and following fatigue. **W. J. Armstrong** and J.D. Welch.

**W. J. Armstrong.** Spinal reflex excitability and homosynaptic depression following balance training using stroboscopic eyewear. **W.J. Armstrong.**

Intensity analysis of mechanomyograph and electromyograph during incremental electrical stimulation. **W. J. Armstrong.**

Spinal reflex excitability and homosynaptic depression following bouts of whole-body vibration. **W. J. Armstrong.**

## MEMBERSHIPS & ASSOCIATIONS

American College of Sports Medicine (ACSM)  
National Strength and Conditioning Association

revised 3/7/14