

# CURRICULUM VITAE

**Sandra Tecklenburg Lund**

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## EDUCATION

### **PhD.** Human Performance-Exercise Physiology

Minors: Physiology and Biochemistry

Indiana University

2009

Dissertation: Comparative and Synergistic Effects of Fish Oil Supplementation and a Leukotriene Receptor Antagonist on Exercise-Induced Bronchoconstriction and Airway Inflammation in Subjects with Asthma.

### **Master of Science** in Kinesiology (Exercise Physiology)

Indiana University

2006

Thesis: The Effect of Ascorbic Acid Supplementation on the Severity of Exercise-Induced Asthma

### **Bachelor of Arts** in Biochemistry

Minor: Physical Education

College of Wooster

2001

Thesis: Using Differential Scanning Calorimetry to Investigate a Possible Role for Arginine 214 of Rabbit Muscle Creatine Kinase as a Structural Arginine

## ACADEMIC HONORS AND AWARDS

- NWU Faculty Development Travel Grant, 2010, 2011
- School of HPER Graduate Fellowship, Indiana University, 2008-09
- School of HPER Graduate Fellowship, Indiana University, 2007-08
- Award Winning Poster HPER Research Symposium, 2007
- Finalist for HPER 60<sup>th</sup> Anniversary Poster Competition, 2007
- School of HPER Graduate Fellowship, Indiana University, 2005-06
- Best Doctoral Student Poster Award, Midwest ACSM conference, 2005
- NCAC Scholar Athlete Award, 2001
- David Guilden Best Scholar Athlete Award, College of Wooster, 2001
- Academic All-American Cross Country, College of Wooster, 1997-2000
- LCC Press Freshman Chemistry Scholar of the Year, College of Wooster, 1997-98
- Science and Math Scholarship, College of Wooster, 1997-2001
- Dean's List, College of Wooster, 1997-2001

- Selected for an Honors Chemistry Lab project, College of Wooster, 1998
- Selected as a COSEN conference participant, College of Wooster, 1998

## **PROFESSIONAL EXPERIENCE**

**Adjunct Professor of Health, Human Performance and Recreation:** Brigham Young University-Idaho 8/2012-Present

*Classes Taught:*

**ESS 375:** Exercise Physiology

**HS 391:** Research Methods for Health Science

**ESS 497:** Seminar in Exercise Science

**Assistant Professor of Health and Human Performance:** Nebraska Wesleyan University 8/2009- 8/2012

*Classes Taught (note: classes at NWU are numbered 0-299 so 200 level is upper level):*

**HHP 215:** Physiology of Exercise

**HHP 215 Lab:** Physiology of Exercise Lab

**HHP 211:** Biomechanics and Kinesiology

**HHP 280:** Research and Statistical Methods I

**HHP 281:** Research and Statistical Methods II

**HHP 225:** Exercise Testing and Prescription

**HHP 185:** Motor Learning and Control

**HHP 180:** Cardiac Rehabilitation

**HHP 104:** Stress and Disease Management

**HHP 102:** Consumer, Community, and Environmental Health Issues

**HHP 130:** Introduction to Allied Health

**HHP 166:** Personal Training (certification class)

**HHP 042:** Swimming

*Selected Lectures in:*

**HHP 101:** Nutrition

**HHP 132:** Medical Terminology

**Associate Instructor,** Indiana University 8/2002-8/2009 (Departments of Kinesiology and Medical Sciences)

*Classes Taught:*

**K535 Lab:** Physiological Basis of Human Performance (graduate class)

**K639 Lab:** Lab Techniques in Exercise Biochemistry (graduate class)

**K638 Lecture:** Biochemical Adaptations to Exercise (graduate class)

**P409 Lab:** Basic Exercise Physiology

**P215 Lab and Discussion:** Human Physiology

**P205 Lab:** Structural Kinesiology

**E133:** Fitness and Jogging  
**E119:** Personal Fitness  
**E187:** Weight Training

*Selected Lectures in:*

**K535:** Physiological Basis of Human Performance  
**P409:** Basic Exercise Physiology  
**H263:** Personal Health  
**H305:** Women's Health  
**P420:** Exercise Prescription in Health and Disease  
**P205:** Structural Kinesiology

**Assistant Cross Country and Track Coach**, Indiana University 8/2002-7/2007  
**Assistant Cross Country and Track Coach**, Kenyon College, 8/2001-6/2002  
**Research Assistant**, Ohio Agricultural Research and Development Center, Summer 1999

## **RESEARCH AND CREATIVE ACTIVITY**

### **RESEARCH**

The focus of my research centers around exercise-induced asthma. I am specifically involved with the effects of diet such as antioxidants and omega-3 fatty acids on airway inflammation and bronchoconstriction. I have also been involved in research on the effects of respiratory muscle training in athletes and asthmatics. As a secondary focus, I have been involved in research pertaining to carbohydrate supplementation in relation to glycogen depletion in exercise.

### **PEER REVIEWED PUBLICATIONS**

1. Turner, L.A.; **Tecklenburg-Lund, S.**; Chapman R.F., Stager J.M., Duke, J.W., Mickleborough T.D. (2013) Inspiratory loading and limb locomotor and respiratory muscle deoxygenation during cycling exercise. *Respir Physiol Neurobiol* 185(3):506-14.
2. Turner, L.A.; **Tecklenburg-Lund, S.**; Chapman R.F., Stager J.M., Wilhite D.P., Mickleborough T.D. (2012) Inspiratory muscle training lowers the oxygen cost of voluntary hyperpnea. *J. Appl. Physiol.* 112(1):127-34.
3. Turner L.A., Mickleborough T.D.; McConnell A.K.; Stager J.M.; **Tecklenburg-Lund S.**; Lindley M.R. (2011) Effect of inspiratory muscle training on exercise tolerance in asthmatic individuals. *Med Sci Sports Exerc.* 43(11): 2031-8.
4. **Tecklenburg-Lund, S.**; Mickleborough, T. D.; Turner, L.A.; Fly, A.D.; Stager, J.M.; Montgomery, G.S. (2010) Randomized Controlled Trial of Fish Oil and Montelukast and Their Combination on Airway Inflammation and Hyperpnea-Induced Bronchoconstriction. *PLoS One.* 5(10): e1387.

5. Mickleborough, T.D.; **Tecklenburg, S.**; Montgomery,G.; Lindley, M.R. (2008) Eicosapentaenoic acid is more effective than docosahexaenoic acid in inhibiting pro-inflammatory mediator production and transcription from LPS-induced human asthmatic alveolar macrophage cells. *Clinical Nutrition*. 28 (1): 71-77.
6. **Tecklenburg, S.**, Mickleborough, T.D., Fly, A.D., Bai, Y., Stager, J.M. (2007) Ascorbic Acid Supplementation Attenuates Exercise-Induced Bronchoconstriction in Patients With Asthma. *Respiratory Medicine*. 101: 1770-1778.
7. Mickleborough, T.D., **Tecklenburg, S.**, Turner, L.A., Hamilton, S.A and Lundgren, E.A. (2007).Nutritional considerations for the asthmatic athlete. Part 1: antioxidants and omega-3 polyunsaturated fatty acids. *European Journal of Nutraceuticals and Functional Foods. Sports Nutrition Supplement*. 18 (5): S48-50.
8. Mickleborough, T.D., Hamilton, S.A., Lundgren, E.A., **Tecklenburg, S.** and Turner, L.A. (2007). Nutritional considerations for the asthmatic athlete. Part 2: dietary sodium and caffeine. *European Journal of Nutraceuticals and Functional Foods. Sports Nutrition Supplement*. 18 (5): S50-54.
9. Karp, J.R., Johnston, J.D., **Tecklenburg, S.**, Mickleborough, T.D., Fly, A., Stager, J.M. (2006). Chocolate milk as a post-exercise recovery aid. *International Journal of Sport Nutrition and Exercise Metabolism*. 16 (1): 78-91.

#### INVITED BOOK CHAPTER

1. Mickleborough, T.D., **Tecklenburg, S.** and Turner, L.A. (2007). Expert Commentary: Diet and obstructive lung disease - priorities for further investigation. In: Diet Therapy Research Trends (pp. 1-3). Editor: Robitaille, F.P. Nova Science Publishers, Hauppauge, NY. ISBN: 1-60021-670-6. (Review; 3 pages).

#### PUBLISHED ABSTRACTS AND PRESENTATIONS

1. Turner, L.A., **Tecklenburg-Lund, S.**, Thomas, K., St. Clair Gibson, A., Mickleborough, T.D. Variability of pacing strategies adopted by different category cyclists. To be presented at ACSM Annual Meeting May 2013.
2. Turner, L.A.; **Tecklenburg-Lund, S.**; Chapman R.F., Stager J.M., Duke, J.W., Mickleborough T.D. The effect of IMT on muscle deoxygenation during exercise with resistive inspiratory loading. *Medicine & Science in Sports & Exercise* 2011, 44(5):S394.
3. **Tecklenburg-Lund, S.**, Turner, L.A., Stager, J. M., Chapman, R. F. Mickleborough, T. D. Expiratory flow limitation and ventilatory responses to inspiratory loading and

maximal exercise in trained cyclists. *Medicine & Science in Sports & Exercise* 2011, 43(5):S.

4. Turner, L.A, **Tecklenburg-Lund, S.**, Stager, J. M., Chapman, R. F. Mickleborough, T. D. The effect of resistive inspiratory loading on limb locomotor and respiratory muscle deoxygenation during exercise. *Medicine & Science in Sports & Exercise* 2011, 43(5):S.
5. **Tecklenburg-Lund, S.**, Turner, L.A., Stager, J. M., Mickleborough, T. D., Montgomery, G. Comparative Effects of Fish Oil Supplementation and Montelukast on Airway Inflammation and Bronchoconstriction Induced by Eucapnic Voluntary Hyperventilation *Medicine & Science in Sports & Exercise*. 2010, 42 (5): S350.
6. Turner, L.A, **Tecklenburg-Lund, S.**, Stager, J. M., Chapman, R. F. Mickleborough, T. D. Inspiratory Muscle Training reduces the Oxygen Cost of Breathing during Exercise *Medicine & Science in Sports & Exercise*. 2010, 42 (5): S350.
7. **Tecklenburg-Lund, S.**, Turner, L.A., Stager, J. M., Mickleborough, T. D. Exhaled Breath Condensate pH is Correlated With Post-exercise Small Airway Obstruction. *Medicine & Science in Sports & Exercise*. 2009, 41 (5): S480.
8. Turner, L.A., **Tecklenburg-Lund, S.**, Stager, J. M., Mickleborough, T. D. Exhaled Nitric Oxide is Correlated With Changes In Small And Large Airway Obstruction. *Medicine & Science in Sports & Exercise*. 2009, 41 (5): S480.
9. McCracken, C.M., Raisbeck, L. D., **Tecklenburg-Lund, S.**, Stickford, J.L., Stager, J.M. Activity Does Not Explain The Greater Skeletal Muscle Mass In Masters Swimmers. *Medicine & Science in Sports & Exercise*. 2009, 41 (5): S544.
10. **Tecklenburg-Lund, S.** Exercise-Induced Bronchoconstriction: Diagnosis, Diet, and Treatment. Presented at the Ohio Athletic Trainers Association Annual Meeting. Cincinnati, OH, May 16<sup>th</sup>, 2009
11. **Tecklenburg, S.**, Turner, L.A., McCracken, C.M., Stickford, J.L., Hamilton, S.A., Johnston, J.D., Mickleborough, T.D., Stager, J.M. Endurance Exercise Tolerance as a Function of Fuel Replacement During Recovery. *Medicine & Science in Sports & Exercise*. 2008, 40 (5): S393.
12. Turner, L.A., Mickleborough, T.D., **Tecklenburg, S.**, Stager, J.M., Lindley, M.R., McConnell, A.K. Inspiratory Muscle Training Improves Pulmonary Function and Reduces Expiratory Flow Limitation in Asthmatic Individuals. *Medicine & Science in Sports & Exercise*. 2008, 40 (5): S305.
13. Mickleborough, T.D., Turner, L.A., **Tecklenburg, S.**, Stager, J.M., Lindley, M.R., McConnell, A.K. Inspiratory Muscle Training Improves Exercise Tolerance and

Attenuates Inspiratory Muscle Fatigue and the Perception of Dyspnea in Asthmatic Individuals. *Medicine & Science in Sports & Exercise*. 2008, 40 (5): S305.

14. Schlader, Z., **Tecklenburg, S.**, Turner, L.A., McCracken, C.M., Stickford, J.L., Brammer, C., Mickleborough, T.D., Stager, J.M. The Effect of Exhaustive Intermittent Cycling Exercise on Plasma Markers of Muscle Damage. *Medicine & Science in Sports & Exercise*. 2008, 40 (5): S195.
15. McCracken, C.M., Raisbeck, L.D, Stickford, J.L., **Tecklenburg, S.**, Johnston, J.D., Stager, J.M. Skeletal Muscle Mass in Highly Active Individuals as a Function of Physical Activity and Age. *Medicine & Science in Sports & Exercise*. 2007, 40 (5): S393.
16. **Tecklenburg, S.**, Turner, L.A., Mickleborough, T.D., McConnell, A., Stager, J.M., Lindley, M.R. Tissue and Arterial Oxygen Saturation During Exercise of Varying Intensity in Asthmatic Subjects. *Medicine & Science in Sports & Exercise*. 2007, 39 (5): S341.
17. Turner, L.A., **Tecklenburg, S.**, Mickleborough, T.D., McConnell, A., Stager, J.M., Lindley, M.R. Expiratory Flow Limitation, Dynamic Hyperinflation, and Inspiratory Muscle Fatigue during Exercise in Asthmatic Subjects. *Medicine & Science in Sports & Exercise*. 2007, 39(5):S342.
18. McCracken, C.M., Raisbeck, L.D., Stickford, J.L., **Tecklenburg, S.**, Johnston, J.D. Stager, J.M. Skeletal Muscle Mass as Estimated by 24 hr Creatinine Excretion in Masters Swimmers. *Medicine & Science in Sports & Exercise*. 2007, 39(5):S220.
19. Raisbeck, L.D., McCracken, C.M., Stickford, J.L., **Tecklenburg, S.**, Johnston, J.D. Stager, J.M. Total Skeletal Muscle Mass, Appendicular Muscle Mass, Strength And Power In Master Athletes. *Medicine & Science in Sports & Exercise*. 2007, 39(5):S220.
20. **Tecklenburg, S.**, Mickleborough, T.D., Stager, J.M., Fly, A.D. and Bai, Y. Ascorbic acid supplementation reduces severity of exercise-induced asthma. *Medicine & Science in Sports & Exercise*. 2006, 38(5):S382.
21. **Tecklenburg, S.**, Stager, J.M., Fly, A.D., Bai, Y., and Mickleborough, T.D. Ascorbic acid reduces the severity of exercise-induced asthma. Midwest ACSM Conference, Muncie, 2005.
22. Karp,J.R., Johnston, J.D., **Tecklenburg, S.**, Mickleborough, T., Fly, A., Stager,J.M.The Efficacy of Chocolate Milk as a Recovery Aid. *Medicine and Science in Sports and Exercise*. 2004, 36(5):S126

## GRANTS OBTAINED

Gatorade Sports Science Institute Grant. 2003-2004. The effect of ascorbic acid supplementation on the severity of exercise-induced asthma. Student: Tecklenburg, S. Advisor: Mickleborough, T.D. \$1500

Graduate Student Research Grant-In-Aid Award. School of HPER, Indiana University. 2004. The effect of ascorbic acid supplementation on the severity of exercise-induced asthma. Student: Tecklenburg, S. Advisor: Mickleborough, T.D. \$500

Graduate Student Travel Grant-In-Aid Award. School of HPER, Indiana University. 2006. Student: Tecklenburg, S. \$200

GPSO Spring 2007 Travel Grant. Indiana University Graduate Student and Professional Organization. 2007. \$150

Graduate Student Travel Grant-In-Aid Award. School of HPER, Indiana University. 2007. Student: Tecklenburg, S. \$200

Graduate Student Travel Grant-In-Aid Award. School of HPER, Indiana University. 2008. Student: Tecklenburg, S. \$200

Graduate Student Travel Grant-In-Aid Award. School of HPER, Indiana University. 2009. Student: Tecklenburg-Lund, S. \$200

Faculty Development Travel Grant. Nebraska Wesleyan University. 2010.

Faculty Development Travel Grant. Nebraska Wesleyan University. 2011.

## **SERVICE**

- **Research and Creative Works Conference Judge:** BYU-Idaho Fall 2012
- **Theme House Advisor:** Fit House, Nebraska Wesleyan University, 2011-2012 academic year
- **Assessment Committee,** Nebraska Wesleyan University, 2011-present
- **Curriculum Process Team,** a team to examine the general education curriculum and make modifications for a new and exciting general education, Spring 2011-Fall 2011
- **Brain Camp,** an enrichment camp for underprivileged high school students, Nebraska Wesleyan University, Summer 2011
- **Science 2020 Committee,** a committee to examine science and math education and prepare students for science in the 21<sup>st</sup> century, Nebraska Wesleyan University, 2009-present.

- **Cooper Center Advisory Council**, a council on writing across the curriculum serving to assess writing on campus, provide workshops to faculty, and serve as a resource for students to improve writing skills, Nebraska Wesleyan University, 2010-present.
- **Retention Group**, a group to discuss retention of students and actions that faculty and staff can do to help retain quality students at the university, Nebraska Wesleyan University, 2010.
- **Committee on Learning and Work**, a committee to examine workload of faculty and students and assess the effects on student learning and design new ways to work more effectively, Nebraska Wesleyan University, 2009-2010.
- **Female Athlete Triad Prevention Team**, a team of coaches, psychologists, and exercise science professionals to help prevent and detect the female athlete triad in collegiate athletes, Indiana University, 2005.
- **Exercise Testing Specialist**, I was asked to provide exercise testing for the athletic department/athlete health care team mostly involving screening for exercise induced asthma, but occasionally other health related testing as well, Indiana University, 2004-2008.