

Curriculum Vitae

Timothy A VanHaitsma

Education

Doctorate of Philosophy in Exercise and Sport Science (2014)

Emphasis: Exercise Physiology

University of Utah

Dissertation topic: Ion channel gene expression as objective biomarkers of training-induced fatigue.

Advisor: Andrea T. White

Master of Science in Kinesiology (2009)

Major: Exercise Physiology

Indiana University

Thesis: The dose-response relationship of caffeine alone and combined with albuterol on pulmonary function in individuals with exercise-induced bronchoconstriction.

Advisor – Timothy D. Mickleborough

Bachelor of Science in Biology (2004)

Calvin College, Grand Rapids, MI

Undergraduate Research: Pre-clinical investigation of the efficacy of an artificial tear solution containing hydroxypropyl-guar as a gelling agent.

Teaching Experience

Westmont College: 2014-Present

KNS105 – Physiology of Exercise (4 cr)

PEA032 – Fitness for Life (1 cr)

Georgetown College: 2013-2014

KHS410 – Measurement and Evaluation in Kinesiology and Health Studies (3 cr) – 1 semester

KHS423 – Physiology of Exercise (3 cr) – 1 semester

KHS322 – Functional Anatomy and Biomechanics (3 cr) – 1 semester

KHS100 – Lifetime Fitness (1 cr) – 2 semesters

KHS111 – Conditioning Activities (1 cr) – 1 semester

University of Utah: 2008-2013

ESS 6350 Instructor: Exercise EKG and Stress Test (3 cr) – 1 semester

ESS 6301/7301 Instructor: Advanced Exercise Physiology Laboratory I (3 cr) – 2 semesters

ESS 6311/7311 Instructor: Advanced Exercise Physiology Laboratory II (3 cr) – 2 semesters

ESS 4301 Instructor: Exercise Physiology Laboratory (3 cr) – 9 semesters
ESSF 1043: Fitness and Jogging
ESSF 1065: Marathon Training

Associate Instructor: Indiana University: 2003-2008

E119 Lecture Instructor: Personal Fitness – 1 semester
P409 Laboratory Class: Basic Exercise Physiology – 2 semesters
E119 Lab Instructor: Personal Fitness
E219: Weight Control and Exercise
E181: Tennis
E133: Fitness and Jogging
E185: Volleyball
E135: Golf
E164: Sailing
E105: Badminton
R110: Introduction to Rock Climbing
R110: Introduction to Whitewater Kayaking
S370: Research Methods of Sociology (Guest Lecturer)

Research

My area of research is currently focused on the sensation of fatigue in cyclists, multiple sclerosis, and chronic fatigue. This has included examining changes in mRNA following a VO₂max and a 40k time trial at both room temperature and in the heat. This will be expanded to examine the effects of repeated bouts of exercise.

Peer Reviewed Publications

VanHaitsma TA, Light AR, Light KC, Hughen RW, White AT. A Comparison of the effects of temperature on gene expression in trained cyclists following a 40k time trial. In preparation

VanHaitsma TA, Light AR, Light KC, Hughen RW, White AT. A Comparison of short and long high intensity exercise on gene expression in trained cyclists. In preparation

Iacob E, Tadler SC, Light KC, Weeks HR, Smith KW, White AT, Hughen RW, VanHaitsma TA, Bushnell LA, and Light AR. Leukocyte Gene Expression in Patients with Medication Refractory Depression before and after Treatment with ECT or Isoflurane Anesthesia: A Pilot Study. *Depress Res Treat* 2014: 582380, 2014.

Pollak KA, Swenson JD, Vanhaitsma TA, Hughen RW, Jo D, Light KC, Schweinhardt P, Amann M, and Light AR. Exogenously Applied Muscle Metabolites Synergistically Evoke Sensations of Muscle Fatigue and Pain in Human Subjects. *Exp Physiol* 2013.

Iacob E, Light KC, Tadler SC, Weeks HR, White AT, Hughen RW, Vanhaitsma TA, Bushnell L, and Light AR. Dysregulation of leukocyte gene expression in women with medication-refractory depression versus healthy non-depressed controls. *BMC Psychiatry* 13: 273, 2013.

Light KC, Agarwal N, Iacob E, White AT, Kinney AY, Vanhaitsma TA, Aizad H, Hughen RW, Bateman L, and Light AR. Differing leukocyte gene expression profiles associated with fatigue in patients with prostate cancer versus chronic fatigue syndrome. *Psychoneuroendocrinology* 38: 2983-2995, 2013.

Elmer SJ, Marshall CS, McGinnis KR, VanHaitsma TA, and LaStayo PC. Eccentric arm cycling: physiological characteristics and potential applications with healthy populations. *Eur J Appl Physiol* 1-12, 2013.

White AT, VanHaitsma TA, Vener J, and Davis SL. Effect of passive whole body heating on central conduction and cortical excitability in multiple sclerosis patients and healthy controls. *J Appl Physiol* 114: 1697-1704, 2013.

Light AR, Bateman L, Jo D, Hughen RW, Vanhaitsma TA, White AT, and Light KC. Gene expression alterations at baseline and following moderate exercise in patients with Chronic Fatigue Syndrome and Fibromyalgia Syndrome. *J Intern Med* 271: 64-81, 2012.

Ubels JL, Clousing DP, Van Haitsma TA, Hong BS, Stauffer P, Asgharian B, and Meadows D. Pre-clinical investigation of the efficacy of an artificial tear solution containing hydroxypropyl-guar as a gelling agent. *Curr Eye Res* 28: 437-444, 2004.

VanHaitsma TA, Mickleborough T, Stager JM, Koceja DM, Lindley MR, and Chapman R. Comparative effects of caffeine and albuterol on the bronchoconstrictor response to exercise in asthmatic athletes. *Int J Sports Med* 31: 231-236, 2010.

White AT, Light AR, Hughen RW, Vanhaitsma TA, and Light KC. Differences in metabolite-detecting, adrenergic, and immune gene expression after moderate exercise in patients with chronic fatigue syndrome, patients with multiple sclerosis, and healthy controls. *Psychosom Med* 74: 46-54, 2012.

Published Abstracts and Presentations

VanHaitsma TA, Light AR, Light KC, Hughen RW, White AT. Metabolite-detecting and adrenergic gene expression after 40k TT performance during ambient and heat-stressed conditions. Oral Presentation at the Annual Meeting of Experimental Biology, San Diego, CA. April 21-25, 2012.

VanHaitsma TA, Light AR, Light KC, Hughen RW, Yenchick S, White AW. Effect of 40k time trial performance during thermoneutral and heat-stressed conditions on metabolite-detecting gene

expression and fatigue. Thematic Poster Presentation at the 59th Annual Meeting of the American College of Sports Medicine, San Francisco, CA. May 29-June 2, 2012.

White AT, VanHaitsma TA, Light AR, Light KC, Hughen RW, Yenchick S. Effect of short vs. longer duration strenuous exercise on afferent fatigue signaling. Thematic Poster Presentation at the 59th Annual Meeting of the American College of Sports Medicine, San Francisco, CA. May 29-June 2, 2012.

VanHaitsma TA, Light AR, Light KC, Hughen RW, White AT. Metabolite-detecting and adrenergic gene expression after 40k TT performance during ambient and heat-stressed conditions. Poster Presentation at the Annual Meeting of Experimental Biology, San Diego, CA. April 21-25, 2012.

VanHaitsma TA, Mahas T, Chambers J, White AT. The Effects of Repeated High Intensity Intervals on Peak Power, Mean Power, and Fatigue Index. Poster Presentation at the 58th Annual Meeting of the American College of Sports Medicine, Denver, CO. May 31st-June 4th, 2011.

Pollak KA, Light AR, Swenson J, Jo D, Hughen RW, VanHaitsma TA, Beilke JL, Tadler S, Light KC. Metabolites that evoke fatigue and pain sensations in human muscles. Poster presentation at the 40th Annual Meeting of the Society for Neuroscience, San Diego, CA. 2010.

Light AR, Hughen RW, White AT, Jensen BT, Michael T, Larson C, VanHaitsma TA, Light KC. Chronic Fatigue Syndrome (CFS) Patients but not Control Subjects increase mRNA for Sensory, Adrenergic, and Immune Genes in Leukocytes following Moderate Exercise. Poster Presentation at the 39th Annual Meeting of the Society for Neuroscience, Chicago, IL. 2009.

VanHaitsma TA, Mickleborough TD, Lindley MR, Koceja D, Stager JM. Comparative and Synergistic Effects of Caffeine and Albuterol on Exercise-Induced Asthma. Poster Presentation at the 56th Annual Meeting of the American College of Sports Medicine, Seattle, WA. May 27th-30th, 2009. Abstract Published in *Medicine & Science in Sports & Exercise*, 41 (5).

VanHaitsma TA, Mickleborough TD, Lindley MR, Stickford JL, Howden C. Repeatability of the DeVilbiss Respiratory Muscle Trainer (RT2). Thematic Poster Presentation at the 54th Annual Meeting of the American College of Sports Medicine, New Orleans, LA. May 30th- June 2nd, 2007. Abstract Published in *Medicine & Science in Sports & Exercise*, 39 (5).

Stickford JL, Mickleborough TD, Morgan NJ, VanHaitsma T. Efficacy of Three Weeks of Inspiratory Muscle Training on Pulmonary and Inspiratory Muscle Function. Thematic Poster Presentation at the 54th Annual Meeting of the American College of Sports Medicine, New Orleans, LA. May 30th- June 2nd, 2007. Abstract Published in *Medicine & Science in Sports & Exercise*, 39 (5).

Turner LA, Lindley MR, VanHaitsma TA, Koceja D, Mickleborough TD. Sample Size Estimates: Reporting Power and Effect Size. An Example using Respiratory Data. Poster Presentation at the 53th Annual Meeting of the American College of Sports Medicine, Denver, CO. May 30th-June 2nd, 2006. Abstract published in *Medicine & Science in Sports & Exercise*, 38 (5).

Lindley MR, Turner LA, VanHaitsma TA, Koceja D, Mickleborough TD. Reliability Estimates of Lung Volumes During Sub-Maximal Exercise Using Absolute and Relative Reliability Indicators. Poster Presentation at the 53th Annual Meeting of the American College of Sports Medicine, Denver, CO. May 30th-June 2nd, 2006. Abstract published in *Medicine & Science in Sports & Exercise*, 38 (5).

Stickford JL, Lindley MR, Turner LA, VanHaitsma TA, Koceja D, Mickleborough TD. Test to the Limit of Tolerance: Repeatability of Performance. Poster Presentation at the 53th Annual Meeting of the American College of Sports Medicine, Denver, CO. May 30th-June 2nd, 2006. Abstract published in *Medicine & Science in Sports & Exercise*, 38 (5).

Undergraduate Mentoring

Yenchik S, **VanHaitsma TA**, White AW, Jacques KM. Effects of Increasing Dosages of Caffeine on Predicted VO₂max. Poster Presentation at the 59th Annual Meeting of the American College of Sports Medicine, San Francisco, CA. May 29-June 2, 2012.

Mahas T, **VanHaitsma TA**, Chambers J, White AT. The Effects of Repeated High Intensity Intervals on Peak Power, Mean Power, and Fatigue Index. Poster Presentation at the National Conference on Undergraduate Research 2011, Ithaca, NY. March 31-April 2, 2011.

Grants Obtained

University of Utah Funding Incentive Seed Grant Program: Awarded May 2010 for the funding of \$32,000. Ion channel gene expression as objective biomarkers of training-induced fatigue.

Peak Academy, University of Utah: Awarded January 2010 for the funding of \$1500. The effects of repeated high intensity intervals on peak and mean sprint power.

School of HPER, Indiana University Research Grant in Aid: Awarded April 2006 for the funding of \$800. The dose-response relationship of caffeine alone and combined with albuterol on pulmonary function in individuals with exercise-induced bronchoconstriction.

School of HPER, Indiana University Travel Grant in Aid: Awarded April 2007 for the funding of \$200.

School of HPER, Indiana University Travel Grant in Aid: Awarded April 2006 for the funding of \$400.