

**MARC DUWELL COOK M.S., Ph.D.** University of Illinois Urbana-Chicago

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## EDUCATION/EMPLOYMENT/TEACHING/RESEARCH

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**Professional Profile** Over 12 years of being enthusiastically involved in collegiate teaching, animal and clinical research intervention studies (NIH funded,) while possessing leadership experience with a reputation for meeting challenging research goals and objectives.

- Hold Bachelors in Biology and a Master's degree in Kinesiology (Exercise Immunology)
  - Experienced in large lecture and small laboratory teaching (Anatomy and Physiology, Exercise Physiology and Functional Exercise Testing) and researcher in the field of clinical exercise physiology, exercise intervention, and nutrition with young and old human subjects.
  - Experience in grant funded research using animal and human models of exercise intervention, cardiovascular and immune function using biochemical assays (Elisa/Gene transcription etc.)
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## Education/Honors/Certifications

### University of Illinois Urbana-Champaign 1996-2001

- Bachelors of Science: Biology

### University of Illinois Urbana-Champaign 2001-2004

- Masters of Science: Kinesiology (Exercise Immunology)
- Advisor: Jeff Woods PhD.
- Thesis: Immune response to tetanus vaccine in elderly of varying physical activity levels.

### University of Illinois Urbana-Champaign 2009-2013

- PhD Kinesiology (Exercise Immunology)
- Advisor: Jeff Woods PhD.
- Dissertation: Immunomodulatory effects of exercise training during ulcerative colitis in mice
  - **Committee:** Dr. Jeff Woods PhD. (Kinesiology-Exercise Immunology/Nutritional Sciences), Dr. Marni Boppart PhD. (Kinesiology-Molecular Muscle Physiology), Dr. Kenneth Wilund PhD. (Kinesiology-Cardiovascular Exercise Physiology), Dr. Matthew Wallig DVM. (Vet Med-Comparative Pathology), Dr. H. Rex Gaskins PhD. (Animal Sciences-Microbiology/Immunophysiology)

## **Research:**

University of Illinois Urbana-Champaign Department of Kinesiology (U of I), University Hospitals of Cleveland (UHC) Pediatric Surgery, Cleveland Clinic Lerner Research Institute (CC-LRI)

- 2001-2004: U of I - *Im-FIT* Immune Function Intervention Trial in Elderly
  - PI: Dr. Jeff Woods NIH Funded
- 2005-2006: UHC - Nutrition and sepsis in neonates and infants
  - PI: Dr. Walter Chwals – Internal Funding
- 2006-2009: ClevClinic - Exercise training, low GI diet, and Insulin Sensitivity in Elderly
  - PI: Dr. John Kirwan NIH Funded
- 2009-2012: U of I – Vascular Intervention Exercise (VINE) Study in Young Adults
  - PI: Bo Fernhall NIH Funded
- **Dissertation:** U of I – Immuno-modulatory effect of exercise training during DSS-induced colitis in mice

- External Funding:** American College of Sports Medicine Foundation (ACSM)
- 2011-2012 Carl V. Gisolfi Memorial Research Fund (\$5,000)
  - 2012-2013 Doctoral Student Research Grant (\$5,000)

**Reviewer Scientific Journals:** Scientific Journals: Medicine & Science in Sports and Exercise: MSSE (2011 & 2012)

**Certification:** Certified Clinical Exercise Specialist ACSM

- 2007-current

**Honors:** University of Illinois Urbana-Champaign Department of Kinesiology & Community Health.

- Robert Morse Most Promising Graduate Student 2010

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**Employment,  
Teaching, and  
Clinical experience**

**Clinical Research Exercise Physiologist:** Cleveland, OH 2006-2009

- The Cleveland Clinic-Lerner Research Institute Department of Pathobiology
- PI: John Kirwan PhD.

**Adjunct Faculty:** Parma, OH 2008-2009

- Cuyahoga Community College (Tri C)
- Lead lecture and laboratory instruction for systemic anatomy and physiology II which included topics of brain and neural anatomy, organ systems, endocrine system, reproductive system, and genetics.

**Teaching Assistant:** University of Illinois Urbana-Champaign 2009-2013

- Bioenergetics of Human Movement (Kinesiology 352 laboratory-discussion)
  - Functional exercise testing procedures including topics of anaerobic power and energy, resting and exercise metabolism, and maximal exercise testing.

**Research Assistant:** Cleveland, OH 2005-2006

- University Hospitals Of Cleveland-Department of Pediatric Surgery
- PI-Surgeon: Dr. Walter Chwals MD, PhD.

**Phlebotomist:** Champaign, IL 2001-2004

- Carle Foundation Hospital & Clinic
- Phlebotomist for Department of Kinesiology & Community Health U of I.

**Postdoctoral Research Associate:** University of Illinois at Chicago Aug 2013 –

- Integrative Physiology Group – Vascular Health Lab with Dr. Michael Brown
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**Publications and Abstracts**

- ✓ Forced Treadmill Exercise Training Exacerbates Inflammation and Causes Mortality While Voluntary Wheel Training is Protective in a Mouse Model of Colitis. **Marc D. Cook**, Stephen A. Martin, Collette Williams, Keith Whitlock, Matthew A. Wallig, Brandt A. Pence, and Jeffrey A. Woods. **Brain Behavior & Immunity** 2013 May 23 pii: S0889-1591(13)00195-5. doi: 10.1016/j.bbi.2013.05.005. . [Epub ahead of print]
- ✓ Effect of Resistance Training on Biomarkers of Vascular Function and Oxidative Stress in Young African American and Caucasian men. **Marc D. Cook**, Kevin S. Heffernan, Sushant Ranadive, Jeffrey A. Woods, Bo Fernhall. **J Hum Hypertens**. 2012 Nov 22. doi: 10.1038/jhh.2012.48. [Epub ahead of print]
- ✓ Effect of Acute Aerobic Exercise on Vaccine Efficacy in Older Adults. Ranadive SM, **Cook M**, Kappus RM, Yan H, Lane AD, Woods JA, Wilund KW, Iwamoto G, Vanar V, Tandon R, Fernhall B. **Med Sci Sports Exerc**. 2013 Aug 6 . [Epub ahead of print]
- ✓ A low glycemic diet lifestyle intervention improves fat utilization during exercise in older obese humans. Solomon TP, Haus JM, **Cook M**, Flask CA, Kirwan JP. **Obesity** (Silver Spring). 2013 Mar 20. doi: 10.1002/oby.20411. [Epub ahead of print]
- ✓ Neurobiological markers of exercise-related brain plasticity in older adults. Voss MW, Erickson KI, Prakash RS, Chaddock L, Kim JS, Alves H, Szabo A, Phillips SM, Wójcicki TR, Mailey EL, Olson EA, Gothe N, Vieira-Potter VJ, Martin SA, Pence BD, **Cook MD**, Woods JA, McAuley E, Kramer AF. **Brain Behav Immun**. 2013 Feb;28:90-9. doi: 10.1016/j.bbi.2012.10.021. Epub 2012 Nov 2
- ✓ Validity of predicting left ventricular end systolic pressure changes following an acute bout of exercise. Kappus RM, Ranadive SM, Yan H, Lane AD, **Cook MD**, Hall G, Harvey IS, Wilund KR, Woods JA, Fernhall B. **J Sci Med Sport**. 2012 Jun 20. [Epub ahead of print]
- ✓ Relationship between systemic inflammation and delayed-type hypersensitivity response to Candida antigen in older adults. Pence BD, Lowder TW, Keylock KT, Vieira Potter VJ, **Cook MD**, McAuley E, Woods JA. **PLoS One**. 2012;7(5):e36403.
- ✓ Nock NL, Patrick-Melin A, **Cook M**, Thompson C, Kirwan JP, Li L. Higher bone mineral density is associated with a decreased risk of colorectal adenomas. **Int J Cancer**. 2011 Aug 15;129(4):956-64.
- ✓ A low-glycemic index diet combined with exercise reduces insulin resistance, postprandial hyperinsulinemia, and glucose-dependent insulinotropic polypeptide responses in obese, prediabetic humans. Solomon TP, Haus JM, Kelly KR, **Cook MD**, Filion J, Rocco M, Kashyap SR, Watanabe RM, Barkoukis H, Kirwan JP. **Am J Clin Nutr**. 2010 Dec;92(6):1359-68.
- ✓ Cardiovascular exercise training extends influenza vaccine seroprotection in sedentary older adults: the immune function intervention trial. Woods JA, Keylock KT, Lowder T, Vieira VJ, Zelkovich W, Dumich S, Colantuano K, Lyons K, Leifheit K, **Cook M**, Chapman-Novakofski K, McAuley E. **J Am Geriatr Soc**. 2009 Dec;57(12):2183-91.
- ✓ Randomized trial on the effects of a 7-d low-glycemic diet and exercise intervention on insulin resistance in older obese humans. Solomon TP, Haus JM, Kelly KR, **Cook MD**, Riccardi M, Rocco M, Kashyap SR, Barkoukis H, Kirwan JP. **Am J Clin Nutr**. 2009 Nov;90(5):1222-9. Epub 2009 Sep 30.
- ✓ Appendiceal fecalith is associated with early perforation in pediatric patients. Alaedeen DI, **Cook M**, Chwals WJ. **J Pediatr Surg**. 2008 May;43(5):889-92
- ✓ Exercise and diet enhance fat oxidation and reduce insulin resistance in older obese adults. Solomon TP, Sistrun SN, Krishnan RK, Del Aguila LF, Marchetti CM, **Cook MD**, O'Carroll SM, O'Leary VB, Kirwan JP. **J Appl Physiol**. 2008 May;104(5):1313-9. Epub 2008 Mar 6.
- ✓ Higher antibody, but not cell-mediated, responses to vaccination in highly physically fit elderly. Keylock KT, Lowder T, Leifheit KA, **Cook M**, Mariani RA, Ross K, Kim K, Chapman-Novakofski K, McAuley E, Woods JA. **J Appl Physiol**. 2007 Mar;102(3):1090-8. Epub 2006 Nov 9
- ✓ Woods JA, Pence BD, Martin SA, **Cook MD**. Exercise, Aging and Immunity, in Rippe JM(ed), **Lifestyle Medicine (2<sup>nd</sup> ed.)**, CRC Press (Boca Raton, FL), 2012.
- ✓ The Effects of Exercise on Plasma PYY, GIP, and Leptin Levels in Older Impaired Glucose Tolerant Adults. Karen R. Kelly, Latina M, Brooks, Chric M. Marchetti, **Marc Cook**, Tom P. Solomon, John P. Kirwan. **American Diabetic Association 68<sup>th</sup> Scientific Sessions** 9 Dec;57(12):2183-91.

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*References and Supporting Documentation Furnished Upon Request*

## Presentations

- **Oral: Immunomodulatory effects of treadmill vs. voluntary wheel running on symptomology during DSS-induced colitis.** Dec 2012 BBI Chicago, IL
- **Poster: Exercise trainings participation in augmentation of inflammation during ulcerative colitis: Potential modulation of colorectal cancer risk.** March 2012 University of Illinois Cancer Center: Cancer Research Forum
- **Poster: Immuno-modulatory Effects of Aerobic Exercise Training in DSS - Induced Ulcerative Colitis.** San Francisco, California June 2012 American College Sports Medicine

## Synopsis

My goal is to complete a post-doctoral fellowship after completing my doctoral degree at Illinois. With that, I would use that experience to help develop a specific expertise in clinical and translational research where the benefits of exercise can be mechanistically explored and applied as adjunctive therapy in populations with chronic inflammatory diseases and related cancers (i.e. IBD, Colitis associated cancer, obesity-related metabolic diseases). Having worked with Professors Jeff Woods (Exercise Immunology - UIUC) and Bo Fernhall (Cardiovascular Exercise Physiology - currently Dean U of I-Chicago), I am currently investigating how exercise affects Ulcerative Colitis in a mouse model (Woods – dissertation) while also working with Fernhall studying exercise training effects (resistance and aerobic) on vascular function in young African American and Caucasian individuals. I have completed two other degrees at the University of Illinois—a bachelor's degree in biology and a master's degree in kinesiology, with a focus on exercise physiology and immunology.

After completing my master's degree in 2004, I joined the Department of Pediatric Surgery at Rainbow Babies and Children's Hospital in Cleveland as a research assistant studying nutritional intervention in septic neonates. Later, I worked as a clinical research exercise physiologist at Cleveland Clinic's Lerner Research Institute, where I supervised all aspects of exercise testing and training for research subjects enrolled in studies funded by the National Institutes of Health and other funded research projects with the Clinical Research Center. In addition, I was an adjunct faculty member at Cuyahoga Community College teaching Anatomy and Physiology.

I have several co-authored publications in such peer-reviewed journals as **Journal of Pediatric Surgery, Journal of Applied Physiology, Obesity, & PloS One**. I currently have two first authored publications **Journal of Human Hypertension 2012** and one in **Brain, Behavior & Immunity 2013** and more to follow. In 2007, I received Clinical Exercise Specialist Certification from the American College of Sports Medicine.