

James R. McDonald

1375 Lakeshore Lane. Auburn, AL 36830

Phone: 334-209-0784

Cell: 703-409-8121

E-mail: jrm0013@auburn.edu

Current Position: Clinical Assistant Professor, Department of Kinesiology, College of Education, Auburn University

Summary of Qualifications

- Proven performer with a broad set of skills and knowledge, capable of providing innovative thinking and building a collaborative work environment
- Excellent instructor having successfully taught at the undergraduate and graduate level both at a major university and within the U.S. Air Force at Air University
- Expertise in a range of fitness and performance areas including: health and fitness assessment; strength and conditioning; and endurance training techniques in running, swimming and triathlon
- Experienced counselor and mentor working with undergraduates, graduate students and military officers
- At ease with public speaking and representing an organization to the local community, peer groups and executive counsels
- Certified Strength and Conditioning Specialist, National Strength and Conditioning Association, initial certification 2003

Professional Background

Education:

Ph.D., Kinesiology, Auburn University, May 2012

M.A., Industrial Management, Central Michigan University, 1976
Concentration: Logistics and organizational management

B.A., Philosophy, University of California at Irvine, 1972

Ph.D dissertation:

Title: $\dot{V}O_2$ On-Kinetics in Skeletal Muscle in Normoxia and Hypoxia with Matched Convective O_2 Delivery

Principal Advisor: Dr. L. Bruce Gladden

Other Education:

Foreign Service Institute, French language and culture, Washington D.C., 1998

U.S. Air Force Academic Instructor Program, Maxwell AFB, AL 1993

U.S. Air Force, Air War College, Clark AB, Philippines, 1989
Concentration: Political-Military Affairs, National Security Studies

U.S. Air Force, Air Command and Staff College, Maxwell AFB, AL, 1988
Concentration: Security Studies and U.S. Air Force Planning systems
Thesis: Centralized Aircraft Accident Investigation: Comparative approaches between the U.S. Air Force and the German Air Force

Defense Language Institute, German language and culture, Monterey CA, 1984

Work Experience:

Clinical Faculty, Department of Kinesiology, Auburn University 2012 - present
Director, Tiger*Fit* Health and Fitness Assessment Laboratory 2010 - present
Graduate Teaching Assistant and doctoral student (Exercise Physiology), 2008 – 2012
College of Education, Department of Kinesiology
Auburn University

International Military Affairs Consultant, 2004 – 2008
Joint Chiefs of Staff, Pentagon, Washington D.C.
Subject Area: International strategic planning and cooperation

Sales Manager, 2003 – 2004
Marriott Hotels
Government and Military business development

Military Officer, 1973 – 2003
U.S. Air Force, Colonel
Navigator, Fighter Pilot, Educator and International Military Affairs Expert

Teaching Experience:

Director, Tiger*Fit* health and fitness assessment program, Lecturer and as Graduate Teaching Assistant, Auburn University

Renewed and refocused undergraduate courses required for completion of a health promotion degree.

Exercise Technology I – The course develops the knowledge, skills, and abilities that are necessary to conduct health and fitness assessments using guidelines from the American College of Sports Medicine (ACSM). The course emphasizes the physiology and biomechanics involved in testing health related physical fitness.

Exercise Technology II – This course continues to develop the knowledge, skills and abilities based on Exercise Technology I. Students gain hands-on experience conducting health & fitness assessments as part of a departmental outreach program, Tiger*Fit*. The program provides university employees, their families and the local community with low cost health and fitness assessments. Course material prepares students for the ACSM certification examination for Health/Fitness Specialist and to attain entry-level jobs in clinical exercise settings and the health & fitness industry.

Other Courses taught while at Auburn:

Wellness – Introduction to all aspects of health and wellness; mental, physical and spiritual

Scientific Foundations of Kinesiology –Entry-level course which introduces motor learning, biomechanics and exercise physiology.

Exploring Exercise Science – A survey course for freshmen and sophomores to introduce the various aspects of kinesiology and potential careers in the field

Principles of Sports Coaching – An introduction to coaching with a focus on sports psychology, communication, leadership and team building

Physical Education classes - swimming, weight lifting, jogging, circuit training and triathlon. Developed and taught Auburn's first ever triathlon course for three semesters

Other Teaching:

Squadron Commander, Squadron Officer's School, Maxwell AFB, AL, 1993-1995

Acted as department head and instructor for a graduate level education for military officers in the rank of captain (ages 25 – 30). The program represented the first step in professional military education. Supervised had 12 full time instructors responsible for teaching five nine-week long classes a year to over 600 students. The curriculum included leadership, written and oral communication, military history, international relations and organizational management.

Commander, International Officer's School, Maxwell AFB, AL, 1995 – 1996

Directed the education program that prepared foreign military officers to enter one of the U.S. Air Force graduate level programs at Air University, the U.S. Air Force's only institution for professional military education. The program included cultural, military and social subjects to prepare the international officers to succeed in graduate level courses ranging in length from three months to a year.

Research Experience:

Human subject research: Cycling trials - project evaluated the effect of various carbohydrate beverages on performance in cycling.

Animal research: Multiple projects investigating: VO_2 on-kinetics in isolated muscle *in situ* and potential innovative cancer treatment using hyperlactatemia and hypoglycemia.

Laboratory techniques: ACSM health and fitness screening and assessment protocols; ECG; Phlebotomy; VO_2 and lactate testing; laboratory animal care and methodologies; blood and tissue sampling; minor surgical techniques.

Publications:

"Contraction-by-contraction VO_2 and computer-controlled pump-perfusion as novel techniques to study skeletal muscle metabolism *in situ*," A. Hernandez, M.L. Goodwin, N. Lai, M.E. Cabrera, **J.R. McDonald**, L.B. Gladden, Journal of Applied Physiology, Dec 2009

"A prior bout of contractions speeds VO_2 and blood flow on-kinetics and reduces the VO_2 slow component amplitude in canine skeletal muscle contracting *in situ*," A. Hernandez, **J.R. McDonald**, N. Lai and L. B. Gladden, Journal of Applied Physiology, Mar 2010.

"Fuel for cancer cells?," L. Bruce Gladden, Matthew L. Goodwin, **James R. McDonald** and Maarten W.N. Nijsten. Cell Cycle, Aug 2011

"Anaerobic Metabolism," **James R, McDonald** and L. Bruce Gladden, in The Encyclopedia of Exercise Medicine in Health and Disease, 1st Edition, editor Frank C. Mooren, 2012.

“ $\dot{V}O_2$ On-Kinetics in Skeletal Muscle in Normoxia and Hypoxia with Matched Convective O_2 Delivery,” **J.R. McDonald**, Bruno Grassi, Nicola Lai, Michael C. Hogan, Yi SUN¹, L Bruce Gladden¹, in review

Presentations:

Invited symposium: “Oxygen Uptake On-Kinetics: History, Mechanisms and Effect of Aging,” Topic, “Aging and Oxygen Uptake On-Kinetics,” American College of Sports Medicine, Southeast Regional Chapter Annual Meeting, Greenville, SC, Feb 2010

Poster Presentation: “Effect of Hypoxia with Matched Convective O_2 Delivery in VO_2 On-Kinetics in Canine Skeletal Muscle *in situ*,” **J.R. McDonald**, B. Grassi, N. Lai, M.C. Hogan, Y. Sun, L.B. Gladden, American College of Sports Medicine, Integrative Physiology Meeting, Miami, FL, Oct 2010.

Invited symposium “Lactate-protected Hypoglycemia: A Potential Cancer Treatment?” Topic, , “Challenges in Achieving Severe Hypoglycemia and Hyperlactatemia,” American College of Sports Medicine, Southeast Regional Chapter Annual Meeting, Greenville, SC, Feb 2011

Invited symposium: “Developing a Model to Assess Oxygen Delivery and Mitochondrial Function,” Topic, “ VO_2 On-Kinetics and NIRS in Isolated Oxidative Skeletal Muscle,” American College of Sports Medicine, South east Regional Chapter Annual Meeting, Greenville, SC, Feb 2011.

Poster Presentation: “Inducing Severe Hypoglycemia in Combination with Hyperlactatemia as a Potential Cancer Treatment: Preliminary Findings,” **James R. McDonald**, Mathew L. Goodwin, Yi Sun, Khalil Lee, Geert Oldenbeuving, Maarten W.N. Nijsten, Gooitzen M. van Dam, and L. Bruce Gladden, Boshell Diabetes Research Day, April 2011.

Poster Presentation: “Establishing Prolonged Hyperlactemia in Anesthetized Dogs,” **James R. McDonald**, Mathew L. Goodwin, Yi Sun, Khalil Lee, Geert Oldenbeuving, Maarten W.N. Nijsten, Gooitzen M. van Dam, and L. Bruce Gladden, American College of Sports Medicine, National Meeting, Denver CO, June 2011

Poster Presentation: “Hemolysis due to Lactate Infusion: Is pH or osmolarity the culprit?,” **James R. McDonald**, Geert Oldenbeuving, Matthew L. Goodwin, Yi Sun, Khalil Lee, Gooitzen van Dam, Maarten W.N. Nijsten, and L. Bruce Gladden, 2012 American Physiological Society Intersociety Meeting, The Integrative Biology of Exercise VI, Westminster CO, October 2012.

Honors:

The “*Alma Holladay Fund for Excellence*” Scholarship for the 2010-2011 academic year.

Professional Affiliations:

American College of Sports Medicine
American Physiological Society
National Strength and Conditioning Association

Presentations:

Invited symposium: “Oxygen Uptake On-Kinetics: History, Mechanisms and Effect of Aging,” Topic, “Aging and Oxygen Uptake On-Kinetics,” American College of Sports Medicine, Southeast Regional Chapter Annual Meeting, Greenville, SC, Feb 2010

Poster Presentation: “Effect of Hypoxia with Matched Convective O₂ Delivery in VO₂ On-Kinetics in Canine Skeletal Muscle *in situ*,” **J.R. McDonald**, B. Grassi, N. Lai, M.C. Hogan, Y. Sun, L.B. Gladden, American College of Sports Medicine, Integrative Physiology Meeting, Miami, FL, Oct 2010.

Invited symposium “Lactate-protected Hypoglycemia: A Potential Cancer Treatment?” Topic, , “Challenges in Achieving Severe Hypoglycemia and Hyperlactatemia,” American College of Sports Medicine, Southeast Regional Chapter Annual Meeting, Greenville, SC, Feb 2011

Invited symposium: “Developing a Model to Assess Oxygen Delivery and Mitochondrial Function,” Topic, “VO₂ On-Kinetics and NIRS in Isolated Oxidative Skeletal Muscle,” American College of Sports Medicine, South east Regional Chapter Annual Meeting, Greenville, SC, Feb 2011.

Poster Presentation: “Inducing Severe Hypoglycemia in Combination with Hyperlactatemia as a Potential Cancer Treatment: Preliminary Findings,” **James R. McDonald**, Mathew L. Goodwin, Yi Sun, Khalil Lee, Geert Oldenbeuving, Maarten W.N. Nijsten, Gooitzen M. van Dam, and L. Bruce Gladden, Boshell Diabetes Research Day, April 2011.

Poster Presentation: “Establishing Prolonged Hyperlactemia in Anesthetized Dogs,” **James R. McDonald**, Mathew L. Goodwin, Yi Sun, Khalil Lee, Geert Oldenbeuving, Maarten W.N. Nijsten, Gooitzen M. van Dam, and L. Bruce Gladden, American College of Sports Medicine, National Meeting, Denver CO, June 2011

Poster Presentation: “Hemolysis due to Lactate Infusion: Is pH or osmolarity the culprit?” **James R. McDonald**, Mathew L. Goodwin, Yi Sun, Khalil Lee, Geert Oldenbeuving, Maarten W.N. Nijsten, Gooitzen M. van Dam, and L. Bruce Gladden, American Physiological Society, Integrative Biology of Exercise VI, Westminster CO, October 2012

Honors:

The “*Alma Holladay Fund for Excellence*” Scholarship for the 2010-2011 academic year.

Professional Affiliations:

American College of Sports Medicine
American Physiological Society
National Strength and Conditioning Association