

Joshua E. Mangum

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EDUCATION

- 2020 Ph.D. in Human Physiology
University of Oregon
Department of Human Physiology
GPA: 3.8
Dissertation: **"Finding the Signal Within the Noise: Examining the Interaction Between Histamine, Exercise, and Inflammation."**
Advisor: Dr. John Halliwill
- 2013 M.S in Exercise Science
University of South Carolina
Department of Exercise Science
Columbia, SC 29208
GPA: 4.0
Thesis: ***"Effect of Cancer Cachexia Progression and Intervention of Exercise on Skeletal Muscle Metabolic Properties in Mice."***
Advisor: Dr. James A. Carson
- 2009 Bachelor of Arts
University of South Carolina
Department of Humanities
Columbia, SC 29208
GPA: 3.2

RESEARCH INTERESTS

Active learning & best teaching practices in higher education

Acute inflammatory response to exercise

Regulation of skeletal muscle blood flow and blood pressure during and following exercise

Skeletal muscle plasticity

TEACHING EXPERIENCE

Fall 2020 – Present – Clinical Assistant Professor of Anatomy, Cell Biology, and Physiology – Indiana University School of Medicine – Northwest Campus

Courses Taught: Cardiovascular Physiology and Hematology; Renal and Respiratory Physiology; Gastrointestinal Physiology and Nutrition; Fundamentals of Health and Disease (Site Leader); Transitions 1; Preparing for Professional Practice (Site Leader)

Winter 2019 – Instructor – HPHY 324 Human Physiology II

Summer 2018 & Summer 2017 – Instructor, Science Literacy Program Fellow, University of Oregon
HPHY 111 – The Science of Sex

Summer 2016 - Co-Instructor, Science Literacy Program Fellow, University of Oregon
HPHY 111 – The Science of Sex

Winter 2014 – Spring 2020 Graduate Teaching Fellow, University of Oregon

HPHY 211 – Medical Terminology (1 term)

Laboratory

HPHY 322 – Human Physiology I (3 terms)

HPHY 324 – Human Physiology II (4 terms)

HPHY 371 – Physiology of Exercise (7 terms)

Guest Lecturer

HPHY 324 – Human Physiology II

HPHY 371 – Physiology of Exercise

Summer 2012-Fall 2013 Graduate Teaching Assistant, University of South Carolina

Laboratory

EXSC 224L – Anatomy and Physiology II Laboratory (2 semesters)

EXSC 341A – Health Fitness Practicum (2 semesters)

EXSC 530L – Exercise Physiology Laboratory (1 semester – Lead TA)

EXSC 531L – Clinical Exercise Physiology Laboratory (3 semesters, 1 semester Lead TA)

EXSC 785 – Advanced Laboratory Techniques (1 semester)

Guest Lecturer

EXSC 541 – Physiology of Strength and Conditioning

TEACHING DEVELOPMENT

Tier 1 Certificate – Academy of Teaching Scholars (IUSM – Started Spring 2021, in progress)

Earned Advanced Teaching Certificate (University of Oregon – Spring 2020)

Graduate Student member on Teaching Effectiveness Committee (University of Oregon)

Science Literacy Program Teaching Fellow (Summer 2016, Summer 2017, Summer 2018)

Facilitated section of Teaching Academy – (COPUS section University of Oregon – Fall 2016; Presentation on Writing Multiple Choice Questions – Fall 2018)

Participant in Science Literacy Program Journal Club (University of Oregon – 5 terms)

Graduate student member of HPHY Teaching Book Club – (In this, graduate students and faculty read teaching focused books over the course of each term and met weekly to discuss; 5 terms)

Teaching mentorship under Dr. Sierra Dawson (University of Oregon)

Student in Professional Skills: Effective Teaching (University of Oregon - Fall 2014)

Participated as student in Teaching Academy (University of Oregon – Fall 2014)

LABORATORY TECHNIQUES

Software Proficiency: Windaq, Prism, MATLAB, R, SAS

Hemodynamic: ECG, Blood Pressure, Blood flow analysis and femoral diameter analysis via ultrasound

Human Based Exercise Testing

Invasive Sterile Technique - Human: Skeletal muscle microdialysis

Electromyography and transcutaneous electrical stimulation Protein

Analysis: SDS PAGE, protein quantification (Bradford), ELISA

Nucleic Acid Analysis: RNA/DNA isolation, Semi quantitative/real-time PCR

Flow Cytometry

Cell Culture

Histology: Immunohistochemistry including Oil Red O staining, ATPase staining, PAS staining, hematoxylin and eosin (H&E) staining, SDH staining

Whole Animal Physiology: Glucose tolerance test, rodent dissection, skeletal muscle electrical stimulation, retro-orbital eye bleed, VetScan, DEXA

PUBLICATIONS

Brito LC, Ely MR, Sieck DC, **Mangum JE**, Larson EA, Minson CT, Forjaz CL, Halliwill JR (2019). Effect of time of day on sustained postexercise vasodilation following small muscle-mass exercise in humans. *Frontiers in physiology*, 10.

Ely MR, Sieck DC, **Mangum JE**, Larson EA, Brito LC, Minson CT, & Halliwill JR (2019). Histamine-Receptor Antagonists Slow 10-km Cycling Performance in Competitive Cyclists. *Medicine and science in sports and exercise*

Ely MR, Romero SA, Sieck DC, **Mangum JE**, Luttrell MJ, & Halliwill JR (2017). A single dose of histamine-receptor antagonists prior to downhill running alters markers of muscle damage and delayed onset muscle soreness. *Journal of Applied Physiology*.

Clayton ZS, Wilds GP, **Mangum JE**, Hocker AD, & Dawson, SM (2016). Do targeted written comments and the rubric method of delivery affect performance on future human physiology laboratory reports? *Advances in Physiology Education*, 40(3), 359-364.

Romero SA, Hocker AD, **Mangum JE**, Luttrell MJ, Turnbull DW, Struck AJ, & Halliwill JR (2016). Evidence of a broad histamine footprint on the human exercise transcriptome. *The Journal of physiology*.

Hardee JP, **Mangum JE**, Gao S, Sato S, Hetzler KL, Puppa MJ, & Carson JA (2016). Eccentric contraction-induced myofiber growth in tumor-bearing mice. *Journal of Applied Physiology*, 120(1), 29-37.

Mangum JE, Hardee JP, Fix DK, Puppa MJ, Elkes J, Altomare D, Bykhovskaya Y, Campagna DR, Schmidt PJ, Sendamarai AK, Lidov HG, Barlow SC, Fischel-Ghodsian N, Fleming MD, Carson JA & Patton JR (2016). Pseudouridine synthase 1 deficient mice, a model for Mitochondrial Myopathy with Sideroblastic Anemia, exhibit muscle morphology and physiology alterations. *Scientific reports*, 6.

CONFERENCE PRESENTATIONS (Poster Presentations and Invited Talks)

Mangum JE, Sieck DC, Ely ME, Larson EA, Minson CT, and Halliwill JR. Effect of Increased Skeletal Muscle Temperature on Intramuscular Histamine Concentrations. *Experimental Biology – 2018* (Poster and Talk)

Mangum JE, Luttrell MJ, Peck MC, Sieck DC, Ely MR, Abdala P, Halliwill JR. Skeletal muscle temperature during moderate intensity single leg dynamic knee extension exercise. NW and National ACSM – 2016 (Poster and Talk)

Mangum, JE., Hardee, JP., Puppa, ML., & Carson, JA. The effect of cachectic myofiber metabolic properties on the resistance exercise-induced hypertrophy response. *Experimental Biology – 2014* (Poster)

AWARDS AND ACADEMIC ACHIEVEMENTS

Eugene and Clarissa Evonuk Memorial Graduate Fellowship - \$7,500 – Spring 2018

Human Physiology Graduate Teaching Award - University of Oregon – 2019

Presidents Cup Award – Best Graduate Student Presentation – \$2000 - Northwest ACSM 2016

Golden Key International Honor Society, 2012 - present

Dean's Honor List – University of South Carolina 2007-2009

SERVICE

Interview Committee Member for Medical Student Interviews – IUSM (2020, 2021)

Search Committee Member for Director of Research – IUSM (2020)

EDITORIAL

Selected Reviewer – *Journal of Applied Physiology, Experimental Physiology*

MENTORSHIP

Sabrina Raquel-Angel – Winter 2020 – Honors Thesis – “Exercise Induced Acidosis and Histamine Release in Skeletal Muscle”

Mairin Peck – Summer 2015 – Honors Thesis - “Temperature Changes in Human Skeletal Muscle During Single Leg Dynamic Knee Exercise”

David Gallacher – Fall 2014 – Supervision of lab work

Diana Dragnea – Spring 2014 – Supervision of lab work

Amber Engel – Spring 2013 - Thesis Project - “The Effect of Cancer Cachexia on Grip Strength and Ladder Climbing in Female Mice”

PROFESSIONAL AFFILIATIONS & CERTIFICATIONS

Professional Member – Central Group on Educational Affairs (AAMC)

Professional Member – Association of American Medical Colleges

Professional Member - Human Anatomy and Physiology Society

Professional Member - American College of Sports Medicine

Professional Member - American Physiological Society

Graduate Teaching Initiative – Advanced Certificate (University of Oregon)

CPR, First Aid, and AED certifications

Academy of Teaching Scholars – Tier One Certification – IUSM (In Progress)