**EDUCATION**

**2018 – 2021 Postdoctoral research fellow, Enhanced myonuclear alertness with prolonged satellite cell depletion**

*College of Medicine, Department of Physiology, University of Kentucky*

**2013 – 2017** **Ph.D., Kinesiology**

*School of Kinesiology, Auburn University*

*Dissertation*: The effects of leucine or different protein supplements on muscle hypertrophy after 12 weeks of resistance training in untrained men.

**2012 – 2013** **M.Ed., Exercise Physiology**

*School of Kinesiology, Auburn University*

**2002 – 2006**  **B.S., Animal and Dairy Sciences, Pre-Veterinary Medicine**

*Department of Animal Sciences, Auburn University*

**PROFESSIONAL EXPERIENCE**

**2021-current Assistant Clinical Professor**

*School of Kinesiology, Auburn University*

Overall Teaching Evaluation Score = 5.7/6.0

**Director, TigerFit Health & Fitness Laboratory**

*School of Kinesiology, Auburn University*

**Associate Director, Nutrabolt Applied and Molecular Physiology Laboratory**

*School of Kinesiology, Auburn University*

**Coordinator, Graduate and Undergraduate Internships**

*School of Kinesiology, Auburn University*

**Curriculum Chair, Exercise, Performance & Health Optimization**

*School of Kinesiology, Auburn University*

**2020 – 2021** **Postdoctoral research fellow**

*Department of Physiology, University of Kentucky*

Area of Focus: Skeletal muscle physiology

P.I.: John J. McCarthy, Ph.D.

**2018 – 2020** **Postdoctoral research scholar**

*Department of Physiology, University of Kentucky*

Area of Focus: Skeletal muscle physiology

P.I.: John J. McCarthy, Ph.D.

**2018 – 2021** **Postdoctoral** **research affiliate**

*Center for Muscle Biology, University of Kentucky*

Area of Focus: Rehabilitative sciences

Director: Charlotte A. Peterson, Ph.D.

**2018 Laboratory Research Assistant**

*School of Kinesiology, Auburn University*

Molecular and Applied Sciences Laboratory

Director: Michael D. Roberts, Ph.D.

**2014 – 2018** **Laboratory Coordinator**

*School of Kinesiology, Auburn University*

Molecular and Applied Sciences Laboratory

Director: Michael D. Roberts, Ph.D.

**2013 – 2017** **Graduate Research/Teaching Assistant**

*School of Kinesiology, Auburn University*

Overall Teaching Evaluation Score = 5.2/6.0

**PROFESSIONAL CERTIFICATIONS**

**2014** **Certified Strength and Conditioning Professional (CSCS)**

NSCA ID: 000372992

CSCS Certification ID: 7247896474

**TEACHING EXPERIENCE**

**School of Kinesiology**

*Auburn University, Auburn, Alabama*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *Course Number* | *Course Name* | *Year(s)* | *Level* | *Section(s)* | *Course Role* |
| PHED 1023 | Freshman Fit (hybrid) | 2013-2014 | Undergraduate | 8 | Instructor |
| KINE 3680 | Physiology of Exercise | 2014-2017; 2022-present | Undergraduate | 12 | Instructor |
| KINE 3873 | Legal and Illegal Supplements | 2014-2015 | Undergraduate | 2 | Instructor |
| KINE 4600 | Strength Development | 2014 | Undergraduate | 1 | Instructor |
| KINE 4630 | Strength and Conditioning Prep | 2014-present | Undergraduate | 8 | Instructor |
| KINE 4930 | Internship in PAH | 2021-present | Undergraduate | 5 | Instructor |
| KINE 4940 | Internship in FCP | 2021-present | Undergraduate | 5 | Instructor |
| KINE 4970 | Special Topics: Clinical Skills for the Health Professional | 2022 | Undergraduate | 1 | Instructor |
| KINE 5400 | Exercise Prescription for Normal and Special Populations | 2021 | Undergraduate | 1 | Instructor |
| KINE 5400\* | Exercise Assessment, Prescription & Programming | 2022-present | Undergraduate | 4 | Instructor |
| KINE 5500 | Clinical Exercise Testing | 2021 | Undergraduate | 1 | Instructor |
| KINE 5501 | Clinical Exercise Testing Lab | 2021 | Undergraduate | 1 | Instructor |
| KINE 5920\* | Internship in Kinesiology | 2023-present | Undergraduate | 2 | Instructor |
| KINE 6400 | Exercise Prescription for Normal and Special Populations | 2021 | Graduate | 1 | Instructor |
| KINE 6400\* | Exercise Assessment, Prescription & Programming | 2022-present | Graduate | 4 | Instructor |
| KINE 6600 | Physiological Basis of Training | 2022-present | Graduate | 2 | Instructor |
| KINE 6920\* | Internship in Kinesiology | 2023 | Graduate | 1 | Instructor |
| KINE 7630\* | Strength & Conditioning Prep | 2022-present | Graduate | 4 | Instructor |
| KINE 7820 | Internship in Kinesiology | 2021-present | Graduate | 5 | Instructor |
| KINE 7970 | Special Topics: Strength & Conditioning Preparation | 2022 | Graduate | 1 | Instructor |
| KINE 7970\* | Special Topics: Clinical Skills for the Health Professional | 2022 | Graduate | 1 | Instructor |

*\*-denotes new course*

**TEACHING DEVELOPMENT ACTIVITIES**

**2023 Generating The Future of Education with AI**, August 5 – 6

Virtual conference aimed at providing a platform for educators, administrators, AI experts, students, parents, and EdTech leaders to discuss the impact of AI on education.

**Building Diversity, Equity and Inclusion into your Teaching**,January 23

Hybrid workshop led by Dr. Tal Perez to help provide structure and support towards efforts focusing on making immediate and actionable changes to improve both DEI content and pedagogy in the classroom.

**2022 Building Diversity, Equity, and Inclusion into your Teaching: Hands-on workshop to help evaluate your pedagogy**, November 30

Hybrid workshop to increase faculty and graduate students’ desire to include greater awareness of DEI in all aspects of professional lives, including teaching.

**Why Critical Race Theory Matters**, February 21

Hybrid symposium that focused on how Critical Race Theory provides a way to look at how the law and other polices within institutions, like schools, function in ways to racially privilege some and discriminate against others.

**Building Diversity, Equity, and Inclusion Into your Teaching**, January 19

Hybrid symposium that focused on making immediate, actionable changes to improve both DEI and pedagogy in classes.

**2021 What Do We Keep? Lessons Learned from Remote Teaching and Learning,** November 18

Virtual symposium that focused on discussing what has and has not worked with remote coursework throughout the pandemic. A highly interactive session that provided lots of resources for in-person and online teaching modalities.

**Text. Assignment. Delivery: Diversifying your Syllabus,** November 10

Virtual symposium that focused on promoting was to create an inclusive teaching environment through the initial steps to analyze your syllabi.

**Self-regulated Learning: A Discussion on Implementation to Improve Student Learning**, September 23

Virtual symposium that focused the cyclical process of student self-regulated learning and the positive effects related to student motivation levels and efforts.

**Diversity, Equity and Inclusion (DEI): Worldwide Alternatives to Physiology Education: Access and Inequity**, July 21

Virtual symposium that focused on identifying challenges and alternative approaches to mitigate inequity during non-contact encounters with people.

**Diversity, Equity and Inclusion (DEI): Creating an Inclusive Lab and Work Environment**, June 22

Virtual symposium that focused on promoting ways to create an inclusive lab and work environment through recruitment, selection, and retention. at all educational levels.

**Diversity, Equity and Inclusion (DEI): Implicit Bias and Stereotype Threat**, March 31

Virtual symposium that focused on overcoming how implicit bias affects hiring, promotion, mentorship and productivity in different areas of industry and academia.

**Engaging, Supporting, and Assessing Students in a Pandemic-challenged World**, March 16

Virtual symposium focused on education best practices, synchronous and/or asynchronous teaching, establishing inclusive classrooms and publishing.

**2020 Mentoring Matters**, September 21

Virtual symposium on issues surrounding mentorship and employing various strategies regarding the importance of being an effective mentor.

**A successful semester: Applying resilient and inclusive pedagogy to mitigate faculty and student stress**, August 20

Virtual symposium on employing pragmatic and concrete teaching strategies to promote student learning and help navigate through an uncertain and everchanging academic year.

**Week of Teaching Virtual Symposium**, April 27 – May 2 & July 27 – 31

Virtual symposia exploring perspectives and practices for teaching including topics on course design, equity/inclusion, engagement strategies, technology-enhanced learning, and media creation.

1. **Diversity, Equity, and Inclusion Symposium**, September 8

Symposium focused on issues surrounding diversity, equity, and inclusion in education.

**GRADUATE & UNDERGRADUATE STUDENT ADVISING & MENTORING**

**(*Listed from current to previous*)**

**School of Kinesiology**

*Auburn University, Auburn, Alabama*

|  |  |  |  |
| --- | --- | --- | --- |
| Carson Anderson | 2023-present | Graduate (Master’s) | Exercise, Performance & Health Opt. |
| Alyssa Annarelli | 2023-present | Graduate (Master’s) | Exercise Physiology |
| Alexander Berry | 2023-present | Graduate (Master’s) | Exercise Physiology |
| Anthony Burton | 2023-present | Graduate (Master’s) | Exercise, Performance & Health Opt. |
| Christine Callaham | 2023-present | Graduate (Master’s) | Exercise, Performance & Health Opt. |
| Stephen Cooper | 2023-present | Graduate (Master’s) | Exercise Physiology |
| Kamren Eriksen | 2023-present | Graduate (Master’s) | Exercise Physiology |
| Camryn Fritsch | 2023-present | Graduate (Master’s) | Exercise Physiology |
| Justin Hamlette | 2023-present | Graduate (Master’s) | Exercise, Performance & Health Opt. |
| Katherine Kneram | 2023-present | Graduate (Master’s) | Exercise Physiology |
| Dustyn Lewis | 2023-present | Graduate (Master’s) | Exercise Physiology |
| Daniel Martin | 2023-present | Graduate (Master’s) | Exercise Physiology |
| Emma Nester | 2023-present | Graduate (Master’s) | Exercise, Performance & Health Opt. |
| Cara Sczuroski | 2023-present | Graduate (Master’s) | Exercise Physiology |
| Julia Swinford | 2022-2023 | Graduate (Master’s) | Biomechanics (GTA; co-mentor) |
| Kile Aukerman | 2022-2023 | Graduate (Master’s) | Exercise Physiology |
| Emma Breeze | 2022-2023 | Graduate (Master’s) | Exercise Physiology |
| Mick Harris | 2022-present | Graduate (Master’s) | Exercise Physiology |
| Nicholas Kontos | 2022-2023 | Graduate (Master’s) | Exercise Physiology |
| Allen Loefstedt | 2022-2023 | Graduate (Master’s) | Exercise Physiology |
| Bailey Parrish | 2022-2023 | Graduate (Master’s) | Exercise Physiology |
| Daisy Platts | 2022-present | Graduate (Master’s) | Exercise Physiology |
| Sakina Rizvi | 2022-2023 | Graduate (Master’s) | Physical Activity & Health |
| Caleb Webster | 2022-present | Graduate (Master’s) | Exercise Physiology |
| Brandon Crifasi  Jonathan Housand | 2021-2023  2021-2023 | Graduate (Master’s)  Graduate (Master’s) | Exercise Physiology (co-mentor)  Exercise Physiology |
| Saori Ishiki | 2021-2023 | Graduate (Master’s) | Physical Activity & Health |
| Nicholas Swoger | 2021-2023 | Graduate (Master’s) | Exercise Physiology |
| Samuel Sears | 2021-present | Graduate (Master’s) | Exercise Physiology |
| Kilian Zierer | 2022 | Graduate (Master’s) | Physical Activity & Health |
| Shanelle Valentine | 2021 – 2022 | Graduate (Master’s) | Physical Activity & Health |
| Nyjel Green | 2021 – 2022 | Graduate (Master’s) | Exercise Physiology |
| Amber Leonard | 2021 – 2022 | Graduate (Master’s) | Physical Activity & Health |
| Madison Mattingly | 2021 – 2022 | Graduate (Master’s) | Exercise Physiology |
| Breanna Mueller | 2021 – 2022 | Graduate (Master’s) | Exercise Physiology |
| Katy Medford | 2021 – 2022 | Graduate (Master’s) | Exercise Physiology |
| Anthony Agyin-Birikorang | 2021 | Graduate (Master’s) | Physical Activity & Health |
| Shelby Osburn | 2016 – 2018 | Undergraduate | Exercise Physiology |
| Hudson Holmes | 2017 – 2017 | Undergraduate | Biology, Pre-Medicine |
| David Baumohl | 2015 – 2017 | Undergraduate | Biology, Pre-Medicine |
| Romil Patel | 2015 – 2017 | Undergraduate | Biology, Pre-Medicine |
| James Healy | 2014 – 2017 | Undergraduate | Biology, Pre-Medicine |

**Department of Physiology**

*University of Kentucky, Lexington, Kentucky*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Taylor Valentino | 2018 – 2021 | | Graduate (Doctoral) | Physiology |
| Jensen Gho | 2019 – 2021 | | Graduate (Doctoral) | Physiology |
| Austin Wellette-Hunsucker | | 2021 | Graduate (Doctoral) | Physiology |
| Leslie Golden | | 2019 | Graduate (Doctoral) | Physiology |
| Amity Lumpp | | 2019 | Undergraduate | Kinesiology, Pre-Medicine |
| Samuel Langford | | 2019 | Undergraduate | Public Health, Pre-Medicine |
| Jennifer Wayland | | 2018 | Undergraduate | Physiology, Pre-Medicine |

**MASTER’S THESIS & DOCTORAL DISSERTATION ACTIVITY**

**(*Listed from current to previous*)**

**School of Kinesiology**

*Auburn University, Auburn, Alabama*

Zach Hutchinson (Robinson) 2023-present Doctoral Committee Member Kinesiology

Soolim Jeong (Robinson) 2023-present Doctoral Committee Member Kinesiology

Breanna Mueller (Kavazis) 2023-present Doctoral Committee Member Kinesiology

Tony Birikorang (Roberts) 2023-present Doctoral Committee Member Kinesiology

Max Michel (Roberts) 2023-present Doctoral Committee Member Kinesiology

Josh Godwin (Roberts) 2023-present Doctoral Committee Member Kinesiology

Braxton Linder (Robinson) 2023-present Doctoral Committee Member Kinesiology

Philip Agostinelli (Sefton) 2022-present Doctoral Committee Member Kinesiology

Bradley Ruple (Roberts) 2022-2023 Doctoral Committee Member Kinesiology

Darby Winkler (Wadsworth) 2022 Doctoral Committee Member Kinesiology

Olivia Altonji (Huggins) 2022 Doctoral University Reader Health Sciences

Casey Sexton (Roberts) 2021-2022 Doctoral Committee Member Kinesiology

Melissa Rumbley (Brown) 2021-2022 Doctoral Committee Member Kinesiology

**PROFESSIONAL SERVICE, AWARDS & HONORS**

*Professional Scholarly Service*

**2023-present** Guest Editor, Nutrients (ISSN 2072-6643)

*Special Issue: The Role of Macronutrients and Micronutrients in Skeletal Muscle Metabolism*

**2023-present** Guest Editor, Nutrients (ISSN 2072-6643)

*Special Issue: Quantitative Diet, Body Composition and Sports Performance of Players*

**2022-present** Editorial Board Member, Nutrients (ISSN 2072-6643)

*Sports Nutrition*

**2022-2023** Guest Editor, Frontiers in Nutrition (ISSN N/A)

*Special Issue: Supplement use in Sports Nutrition*

**2021-2022** Guest Editor, Nutrients (ISSN 2072-6643)

*Special Issue: Adipose Tissue Metabolism and Exercise in Health and Disease*

**2021-2022** Guest Editor, Nutrients (ISSN 2072-6643; IF: 6.706)

*Special Issue: Recent Perspectives on the Role of Dietary Protein for Resistance Exercise Training*

*AD HOC Journal Reviewer*

Nutrition

Nutrients

Muscle & Nerve

Physiological Reports

Frontiers in Physiology

Physiological Genomics

Experimental Physiology

British Journal of Nutrition

Journal of Applied Physiology

Frontiers in Sports and Active Living

Journal of Cachexia and Skeletal Muscle

Medicine & Science in Sports & Exercise

Journal of Strength & Conditioning Research

Applied Physiology, Nutrition, and Metabolism

Journal of International Sports Science Nutrition

*Professional Organization, Service & Memberships*

**2013-present** National Strength and Conditioning Association (NSCA)

**2019-present** American Physiological Society (APS)

**2020-present** National Center for Faculty Diversity & Development (NCFDD)

**2022-present** Triathlon Club Advisor, Auburn University

**2022-present** School of Kinesiology Faculty Senator, Auburn University

**2023-present** College of Education Diversity Committee, Auburn University

**2023-present** School of Kinesiology Graduate Student Advisory Committee, Auburn University

**2023-present** School of Kinesiology Clinical Faculty Search & Hiring Committee, Auburn University

**2023-present** School of Kinesiology DPT Faculty Search & Hiring Committee, Auburn University

**2022-present** Three Minute Thesis (3MT) Judging Panel Member, Auburn University

**2022** School of Kinesiology Graduate Curriculum Committee, Auburn University

**2022** School of Kinesiology Graduate Admissions Task Force, Auburn University

**2021** Core Facilities Committee, Department of Physiology, University of Kentucky

**2020 – 2021** COVID-19 Research Response Team, University of Kentucky

**2020 – 2021** National Postdoctoral Association (NPA)

**2019 – 2021** Postdoctoral Representative, Department of Physiology, University of Kentucky

**2018 – 2021** Center for Muscle Biology, College of Health Sciences, University of Kentucky

**2018 – 2021** Society of Postdoctoral Scholars, University of Kentucky

**2015 – 2017** Kappa Omicron Nu Honor Society

**2015 – 2017** Gamma Beta Phi Honor Society

**2015 – 2017** National Society of Leadership and Success

**2014 – 2017** Delta Epsilon Iota Honor Society

**2013 – 2017** American College of Sports Medicine: Southeast Chapter

**2013 – 2017** American College of Sports Medicine (ACSM)

*Academic Awards & Honors*

**2020** American Physiological Society Postdoctoral Fellowship Program

Cell & Molecular Physiology Section Winner (APS Top 12 Overall)

**2019** American Physiological Society Postdoctoral Fellowship Program

Cell & Molecular Physiology Section Winner (APS Top 12 Overall)

**2017**  Auburn University’s Outstanding Doctoral Student Award

School of Kinesiology Outstanding Graduate Student Award

Kochan Fund for Excellence Graduate Award

American Kinesiology Association Doctoral Scholar Award

**2015** 1st Place Research Presentation Award at the UAB 3rd Annual UCEM Symposium

2nd Place Doctoral Research Award for ACSM: Southeast Chapter

**2014** US ARMY Ranger Training Brigade Certificate of Appreciation

American Kinesiology Association Master’s Scholar Award

Honor Roll Annual Scholarship

**PROFESSIONAL DEVELOPMENT ACTIVITIES**

**2022 Importance of Mentorship at All Career Levels APS DEI Series**,October 20

Webinar highlighting how to find good mentors, creating a supportive network and setting expectations for the mentoring relationship.

**Tools of the Trade – National Institutes of Health**, February 24

Webinar series offered by Hanover Research helping researchers identify and navigate grant writing, submission, and proper organization grant submission relevance for the National Institutes of Health.

**2020** ***UNIT*ed In racial *E*quity (UNITE) Research Initiative**

Training on stimulating and fostering impactful and sustainable research in 1) racial disparities, health equity, social and racial justice and 2) research focused on establishing best practices to inform policies and procedures to recruit and retain diverse faculty, staff, and students.

**Did They Really Just Say That?! Responding to Bias at Work**

Training on employing actionable skills to facilitate educational conversations in response to comments/actions that involve gender identity, racism, sexism, etc. and

having a more inclusive environment to help with recruitment and retention of underrepresented groups in academic.

**Writing and Reviewing for Advances in Physiology Education**

Training on employing techniques and strategies for writing and reviewing papers related to physiology education and how educators have adapted their teaching during a pandemic.

**2019** **Good Research Practices and Data Reproducibility**

Research training centered on recommendations for employing best research practices to support rigor and transparency in scientific research, per the National Institutes of Health requirements.

**SCIENTIFIC DEVELOPMENT ACTIVITIES**

**2021 Science of Aging – Aging and Skeletal Muscle Plasticity**, September 29

Sue Bodine, PhD, discussed how the loss of skeletal muscle mass is the result of a variety of disparate conditions and affects everyone as a result of aging.

**Science of Aging – Quality, Quantity and Timing: Regulating Healthspan and Lifespan with Diet**, July 7

Dudley Lamming, PhD, of the University of Wisconsin-Madison, discussed how diets can affect metabolic health and longevity.

**Science of Aging – Aging and Bone Health**, June 22

Joy Wu, MD, PhD of Stanford University discussed the pathophysiology of bone loss with aging.

**Science of Aging – The Challenges of Sarcopenia: Definition, Underlying Mechanisms, Interventions and Outcomes**, May 19

Drs. Charlotte Peterson and Jack Guralinik provided an in-depth overview of the underlying mechanisms of sarcopenia with potential therapeutic interventions and outcomes.

**GRANTS, FELLOWSHIPS, GIFTS & FUNDING**

**School of Kinesiology**

*Auburn University, Auburn, Alabama*

**2022-present Project Title:** Peanut-Rich Diet to Improve Metabolic Health in Women

**Principal Investigator(s):** Drew Fruge, Michael Roberts, April Smith, Andreas Kavazis **Role in Project:** Co-Investigator **Effort:** 8% **Credit:** 5% **Institution/University:** Auburn University **Source of Funding:** The Peanut Institute Foundation **Duration of Project:** 7/2023 – 6/2025

**Total Award:** $747,639 ***(Not Funded)* Grant Number:** 0821-23P

**Project Title:** Two Aim Study Examining the Absorption of Vitamin C and Iron

**Principal Investigator(s):** Michael Roberts **Role in Project:** Co-Investigator

**Effort:** 1% **Credit:** 49% **Institution/University:** Auburn University

**Source of Funding:** Megafood **Duration of Project:** 7/2023 – 6/2025

**Total Award:** $157,639 ***(Funded)* Grant Number:** 0797-23P

**Project Title:** Extramural Grant: Effects of Two Different Nutritional Supplements on Nutrient Absorption in Caco-2 Cells

**Principal Investigator(s):** Michael Roberts **Role in Project:** Co-Investigator

**Effort:** 0.1% **Credit:** 50% **Institution/University:** Auburn University

**Source of Funding:** Compound Solutions **Duration of Project:** 8/2022 – 7/2023

**Total Award:** $55,000 ***(Funded)*** **Grant Number:** 242911

**Project Title:** The Effects of Extracorporeal Magnetic Innervation (ExMI) on Myostatin and Vastus Lateralis Muscle

**Principal Investigator(s):** Michael D. Roberts, Ph.D.; Darren Beck, Ph.D.

**Role in Project:** Co-Investigator **Effort:** 0.1% **Credit:** 25%

**Source of Funding:** Edward Via College of Osteopathic Medicine

**Duration of Project:** 10/2022 – 7/2023 **Total Award:** $33,500 ***(Funded)***

**Grant Number:** ED22-055

**Project Title:** Examination of how different types of on-shift exercise impact ability to respond to emergency calls

**Principal Investigator(s):** JoEllen Sefton **Role in Project:** Co-Investigator

**Effort:** 0.1% **Credit:** 25% **Source of Funding:** Department of Homeland Security **Duration of Project:** 7/2022 – 6/2024

**Total Award:** $286,863 ***(Not Funded)*** **Grant Number:** ED22-030

**Project Title:** The Effect of Different Acute Training Modalities on Occupational Firefighting Performance

**Principal Investigator(s):** Philip Agostinelli **Role in Project:** Co-Investigator

**Effort:** 0.1% **Credit:** 25% **Source of Funding:** National Strength and Conditioning Association  **Duration of Project:** 8/2022 – 5/2023

**Total Award:** $13,180 ***(Not Funded)*** **Grant Number:** ED22-024

**2022-pesent Source of Funding:** Blue Cross Blue Shield

**Total Amount Procured**: $25,000

**Department of Physiology**

*University of Kentucky, Lexington, Kentucky*

**2020** **Funding Agency:** American Physiological Society Postdoctoral Fellowship

**Project Title:** Prolonged satellite cell depletion alters the myonuclear transcriptome

**Role:** Principal Investigator **Effort:** 100% **Credit**: 100%

**Duration of Project:** 11/2020 – 10/2021

**Total Award:** $50,000 ***(Funded)***

**2020** **Funding Agency:** National Institutes of Health F32 NRSA Postdoctoral Fellowship

**Project Title:** Enhanced myonuclear alertness with prolonged satellite cell depletion

**Amount requested:** $202,062 **Effort:** 100% **Credit**: 100%

**Role:** Principal Investigator

**Comments:** Not scored

**2019** **Funding Agency:** American Physiological Society Postdoctoral Fellowship

**Project Title:** The role of satellite cells in juvenile skeletal muscle hypertrophy

**Amount requested:** $50,000 **Effort:** 100% **Credit**: 100%

**Role:** Principal Investigator

**Comments:** Made Top 12 (not funded)

**SPONSORED RESEARCH PROJECTS**

**2018 - 2021 Project Title:** Exercise-Induced Skeletal Muscle Exosomes Promote Adipocyte Lipolysis

**Principal Investigator(s):** John J. McCarthy, Charlotte A. Peterson

**Role in Project:** Postdoctoral Scholar **Effort:** 50% **Credit**: 0.1%

**Institution/University:** University of Kentucky

**Source of Funding:** National Institutes of Health

**Duration of Project:** 9/2018 – 7/2023 **Total Award:** $2,328,863

**Grant Number:** 5R01DK119619-02

**2018 - 2021 Project Title:** Novel Roles for Satellite Cells in Adult Skeletal Muscle Adaptation

**Principal Investigator(s):** John J. McCarthy, Ph.D. & Charlotte A. Peterson, Ph.D.

**Role in Project:** Postdoctoral Scholar **Effort:** 50% **Credit**: 0.1%

**Institution/University:** University of Kentucky

**Source of Funding:** National Institutes of Health

**Duration of Project:** 9/2010 – 6/2021 **Total Award:** $3,022,203

**Grant Number:** 5R01AR060701-10

**PUBLICATIONS**

***Peer-reviewed research articles (listed from newest to oldest)***

Ismaeel A, Goh J, **Mobley CB**, Murach KA, Rando TA, Peterson CA, Wen Y, McCarthy JJ. Division-independent differentiation of muscle stem cells during a growth stimulus. Comments: Accepted to **Stem Cells** in November 2023.

Roberts MD, Ruple BA, Godwin JS, McIntosh MC, Chen SY, Kontos NJ, Agyin-Birikorang A, Michel JM, Plotkin DL, Mattingly M, **Mobley CB**, Ziegenfuss TN, Fruge AD, Kavazis AN. A novel deep proteomic approach in human skeletal muscle unveils distinct molecular signatures affected by aging and resistance training. Comments: Accepted to **Aging** in November 2023.

Mattingly ML, Ruple BA, Kontos NJ, Sexton CL, McIntosh MC, Godwin JS, Smith MA, Phillips SM, **Mobley CB**, Vechetti I, Van CG, Roberts MD. Resistance training in humans and mechanical overload in rodents does not elevate muscle protein lactylation. **Front. Physiol**. 14:1281702.

doi: 10.3389/fphys.2023.1281702. PMID: 37841321

Michel JM, Godwin JS, Plotkin DL, Mesquita PH, McIntosh MC, Ruple BA, Libardi CA, **Mobley CB**, Kavazis AN, Roberts MD. Proteolytic mechanisms associated with a gain and loss of leg muscle mass with resistance training followed by high-intensity interval training. **Exp Physiol**. 2023 Aug 17. doi: 10.1113/EP091286. PMID: 37589512

Mesquita PHC, Godwin JS, Ruple BA, Sexton CL, McIntosh MC, Mueller BJ, Osburn SC, **Mobley CB**, Libardi CA, Young KC, Gladden BC, Roberts MD, Kavazis AN. Resistance training diminishes mitochondrial adaptations to subsequent endurance training. **J Physiol**. 2023 Jul 20. doi: 10.1113/JP284822. Online ahead of print. PMID: 37470322

McIntosh MM, Sexton CL, Godwin JS, Ruple BA, Michel JM, Plotkin DL, Ziegenfuss TN, Lopez HL, Smith R, Dwaraka VB, Sharples AP, Dalbo VJ, **Mobley CB**, Vann CG, Roberts MD. Different resistance exercise loading paradigms similarly affect skeletal muscle gene expression patterns of myostatin-related targets and mTORC1 signaling markers. **Cells** 2023, 12(6), 898; https://doi.org/10.3390/cells12060898. PMID: 36980239 PMCID: PMC10047349

Godwin JS, Sexton CL, Kontos NJ, Ruple BA, Willoughby D, Young K, **Mobley CB\***, Roberts M**\***. Extracellular matrix content and remodeling markers do not differ between higher and

lower responders to resistance training. **J Appl Physiol** (1985). 2023 Feb 9. doi: 10.1152/japplphysiol.00596.2022. PMID: 36759158 (**\*-denotes co-corresponding authorship**)

Sexton CL, Godwin JS, McIntosh MC, Ruple BA, Osburn SC, Hollingsworth BR, Kontos NJ, Agostinelli PJ, Kavazis AN, Ziegenfuss TN, Lopez HL, Smith R, Young KC, Dwaraka VB, Fruge AD, **Mobley CB**, Sharples AP, Roberts MD. Skeletal muscle DNA methylation and mRNA responses to a bout of higher versus lower load resistance exercise in previously trained men. **Cells** 2023, Jan 9; 12(2), 263. doi: 10.3390/cells12020263. PMID: 36672198 PMCID: PMC9856538

Borowik AK, Davidyan A, Peelor III, FF, Voloviceva E, Doidge S, Bubank MP, **Mobley CB**, McCarthy JJ, Dupont-Versteegden EE, Miller BF. Skeletal muscle nuclei in mice are not post-mitotic. **Function** (Oxf). 2022 Nov 22;4(1):zqac059. doi: 10.1093/function/zqac059. eCollection 2023. PMID: 36569816 PMCID: PMC9772608

Keeble AR, Brightwell CR, Latham CM, Thomas NT, **Mobley CB**, Murach KA, Johnson DL, Noehren B., Fry CS. Depressed protein synthesis and anabolic signaling potentiate ACL tear resultant quadriceps atrophy. **Am J Sports Med**. 2022 Dec 7;3635465221135769. doi: 10.1177/03635465221135769. PMID: 36475881 PMCID: PMC9813974

Osburn S, Mesquita P, Neal F, Rumbley M, Holmes M, Ruple B, **Mobley CB**, Brown M, McCullough D, Kavazis A, Roberts M. Long-term voluntary wheel running effects on markers of Long Interspersed Nuclear Element-1 in skeletal muscle, liver, and brain tissue of female rats. **Am J Physiol Cell Physiol**. 2022 Sep 1;323(3):C907-C919. doi: 10.1152/ajpcell.00234.2022. Epub 2022 Aug 8. PMID: 35938680

Dungan CD, Figueiredo VC, Wen Y, VonLehmden GL, Zdunek CJ, Thomas NT, **Mobley CB**, Murach KA, Brightwell CR, Long DE, Fry CS, Kern PA, McCarthy JJ, Peterson CA. Senolytic treatment rescues blunted muscle hypertrophy in old mice. **Geroscience**. 2022 Mar 24. doi: 10.1007/s11357-022-00542-2. PMID: 35325353

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*Articles in review*

Ruple BA, Mattingly ML, Godwin JS, McIntosh MC, Kontos NJ, Agyin-Birikorang A, Michel JM, Plotkin DL, Shao-Yung C, Zeigenfuss TN, Fruge AD, Gladden BL, Robinson AT, **Mobley CB**, Mackey AL, Roberts MD. The effects of resistance training on denervated myofibers, senescent cells, and associated protein markers in middle-aged adults. Comments: submitted to **GeroScience** in July 2023.

*Articles in preparation*

Godwin J, Plotkin D, McIntosh MC, Sexton CL, Smith MA, Ruple BA, Michel JM, Candow DG, Forbes SC, Fruge AD, Young KC, **Mobley CB**, Libardi CA, Roberts M. Sarcolemmal membrane-associated proteome adaptations following 10 weeks of resistance training in previously untrained younger female adults. Comments: preliminary draft written and will be submitted for review to **J Appl Physiol** in December 2023.

**Mobley CB**, Casagrande VF, Valentino TR, Vechetti Jr IJ, Wen Y, Aliminov A, Brightwell C, Fry C, McCarthy JJ. Loss of ribosomal protein L3-like in skeletal muscle affects the hypertrophic growth response in rodents. To be submitted for review to **Am J Physiol Cell** in December 2023.

**Mobley CB**, Dungan CD, Valentino TR, Vechetti Jr IJ, Peterson CA, McCarthy JJ. Myonuclei do not contribute to the regenerative capacity of skeletal muscle. To be submitted to **Am J Physiol Cell** in December 2023.

**Mobley CB**, Vechetti Jr. IJ, Valentino TR, Wen Y, McCarthy JJ. Robust gene expression using a skeletal muscle-specific transgenic mouse. To be submitted to **Skel Muscl** in December 2023.

# INVITED LECTURES

**2023 Practical Health and Wellness Education for Police Officers and the Development of a New Fitness Test**

Warrior Research Summit, Auburn Hotel, Auburn, AL. September 28.

**Nutrition for Elite Performance in Tactical Athletes.**

City of Auburn Police Department (4 briefings), Auburn, AL. March 6 – 7.

**2021 Early Detection of Satellite Cell-Derived Myonuclei During Mechanical Overload.**

Center for Muscle Biology, College of Health Sciences, University of Kentucky, Lexington, KY. April 18.

**Resident Myonuclei Do Not Contribute to Skeletal Muscle Regeneration.**

Center for Muscle Biology, College of Health Sciences, University of Kentucky, Lexington, KY. March 4.

**2020 Direct Differentiation of Satellite Cells in Skeletal Muscle During Hypertrophy.** Center for Muscle Biology, College of Health Sciences, University of Kentucky, Lexington, KY. June 19.

**Using the Pax7- and HSA-GFP Mice to Study the Dynamics of Satellite Cell Fusion.** Center for Muscle Biology, College of Health Sciences, University of Kentucky, Lexington, KY. February 28.

**2019 Characterizing a Transgenic Mouse to Study Skeletal Muscle Hypertrophy.**

Center for Muscle Biology, College of Health Sciences, University of Kentucky, Lexington, KY. November 15.

**Myogenic Differentiation of Satellite Cell-Derived Myonuclei During Hypertrophy.** Center for Muscle Biology, College of Health Sciences, University of Kentucky, Lexington, KY. November 7.

**Characterizing a Transgenic Mouse to Study Skeletal Muscle Hypertrophy.**

Center for Muscle Biology, College of Health Sciences, University of Kentucky, Lexington, KY. November 1.

**Do Resident Myonuclei Contribute to Regeneration in Skeletal Muscle?**

Center for Muscle Biology, College of Health Sciences, University of Kentucky, Lexington, KY. September 6.

**Innovative Ways to Incorporate Transgenic Mice into Skeletal Muscle Research.** Center for Muscle Biology, College of Health Sciences, University of Kentucky, Lexington, KY. May 31.

**Dose Response of Doxycycline Mediates a High-, Mid-, and Low Gene Expression Profile in Satellite Cells.**

Department of Physiology, College of Medicine, University of Kentucky, Lexington, KY. February 21.

**Early Satellite Cell Fusion During Skeletal Muscle Hypertrophy.**

Center for Muscle Biology, College of Health Sciences, University of Kentucky, Lexington, KY. February 18.

**Managing a Transgenic Mouse Colony.**

Department of Physiology, College of Medicine, University of Kentucky, Lexington, KY. February 7.

**Robust Gene Expression Using a Skeletal Muscle Specific Transgenic Mouse.**

Department of Physiology, College of Medicine, University of Kentucky, Lexington, KY. January 9.

**Tracking Satellite Cells with the Pax7-rtTA x H2B-GFP Transgenic Mouse.**

Department of Physiology, College of Medicine, University of Kentucky, Lexington, KY. January 7.

**Lifelong Satellite Cell Depletion Affects Running Capacity in Mice.**

Department of Physiology, College of Medicine, University of Kentucky, Lexington, KY. January 4.

**2018 Determining Homozygosity in Transgenic Mice: Finding our Homies.**

Department of Physiology, College of Medicine, University of Kentucky, Lexington, KY. January 28.

**Milk-derived exosomes and bovine miRNAs on skeletal muscle hypertrophy.** Department of Physiology, College of Medicine, University of Kentucky, Lexington, KY. August 18.

**Whey protein: More than just leucine.** Skeletal Muscle Forum, College of Health Sciences, University of Kentucky, Lexington, KY. February 14.

**2017 Inducible overexpression of p21Cip1 in myotubes promotes increases in protein synthesis and myotube hypertrophy.** Conference: 64th Annual American College of Sports Medicine Meeting. Denver, CO. June 2.

**2015** **Nutrition: The practical application for the regular exerciser.** Conference: Southeastern Chapter of the American College of Sports Medicine Meeting. Jacksonville, FL. February 15.

**2013 – 2014** **Protein supplementation for elite performance.** U.S. Army Ranger's briefing (3 briefings), Fort Benning, GA. October – April.

# CONFERENCE PRESENTATIONS

*National Conference Proceedings*

**2022** McIntosh MC, Sexton CL, Godwin JS, Ruple BA, Osburn SC, Hollingsworth BR, Agostinelli PJ, Kavazis AN, Ziegenfuss TN, Lopez HL, Smith R, Young KC, Dwaraka VB, **Mobley CB**, Sharples AP, Roberts MD. Effects of different types of resistance exercise failure training on the methylation status of genes that drive skeletal muscle hypertrophy. Experimental Biology. Philadelphia, PA. April 2-5.

Sexton CL, Godwin JS, Ruple BA, McIntosh MC, Osburn SC, Hollingsworth BR, Agostinelli PJ, Kavazis AN, Ziegenfuss TN, Lopez HL, Smith R, Young KC, Dwaraka VB, **Mobley CB**, Sharples AP, Roberts MD. Global DNA methylation status in relation to resistance training with high vs. low loads to failure. Experimental Biology. Philadelphia, PA. April 2-5.

Godwin JS, Ruple BA, Sexton CL, Smith MA, Frugé AD, Young KC, **Mobley CB**, Roberts MD. Extracellular matrix content and remodeling does not differ between high-responders and lower-responders to resistance training. Experimental Biology. Philadelphia, PA. April 2-5.

**2020** Valentino TR, Vechetti Jr IJ, **Mobley CB**, Goh JZ, McCarthy JJ. The gut microbiome is required for skeletal muscle adaptation to exercise. Miami Winter Symposium 2020. Molecular Mechanisms Linking the Microbiome and Human Health. Miami, FL. January 26 – 29.

**2019** Butterfield TA, Kruithof E, **Mobley CB**, McCarthy JJ. Inducible depletion of titin kinase in adult skeletal muscle impairs passive tension-induced sarcomerogenesis. 43rd Annual Meeting of the American Society of Biomechanics. Calgary, Alberta, Canada. July 31 – August 4.

Moore JH, Haun CT, Grandprey EL, Joubert KP, Vann CG, Mumford PW, Romero MA, Osburn SC, **Mobley CB**, Moon JR, Roberts MD, Young KC. A comparison of techniques for estimating and detecting changes in skeletal muscle cross-sectional area. 66th Annual American College of Sports Medicine Meeting. Orlando, FL. May 28 – June 1.

Grandprey EL, Joubert KP, Haun CT, Vann CG, Roberson PA, Mumford PW, Romero MA, Osburn SC, **Mobley CB**, Moon JR, Roberts MD, Young KC. Agreement between dual-energy x-ray absorptiometry and a new standing bioimpedance spectroscopy device for detecting changes in fat-free tissue. 66th Annual American College of Sports Medicine Meeting. Orlando, FL. May 28 – June 1.

**2016 Mobley CB**, Mumford P, Pascoe D, Miller M, Roberts M. Whey protein-derived exosomes increase protein synthesis in C2C12 myotubes. 13th Annual International Sports Science of Nutrition Meeting. Clearwater, FL. June 9 – 11.

**Mobley CB**, Mumford P, Kephart W, Haun C, Holland A, Osburn S, Beck D, Martin J, Young K, Kavazis A, Lowery R, Wilson J, Roberts M. Effects of aging on markers of ribosome biogenesis in fast- and slow-twitch skeletal muscle in rodents aged 3 to 24 months. 100th Annual Experimental Biology Meeting. San Diego, CA, April 2 – 6.

**2015 Mobley CB**, Holland A, Kephart W, Lowery R, Mumford P, McCloskey A, Shake J, Mesquita P, Wilson J, Roberts M. The anabolic skeletal muscle response to acute resistance exercise is not impaired in rats fed a ketogenic diet. 12th Annual International Sports Science Nutrition Conference. Austin, TX, June 11 – 13.

**Mobley CB**, Kephart W, Fox C, Santucci V, Beck D, Yarrow J, McCarthy J, Kirby T, Borst S, Roberts M, Martin J. Differential effects of testosterone and trenbolone on skeletal muscle markers of ribosome biogenesis. 99th Annual Experimental Biology Meeting. Boston, MA. March 28 – April 1.

**2014 Mobley CB**, Fox C, Thompson M, Healy J, Young K, Wachs T, Moon J, Kim M, Pascoe D, Roberts M. Differential effects of L-leucine and whey protein on post-exercise skeletal muscle protein synthesis. 8th American College of Sports Medicine: Integrative Biology of Exercise Conference. Miami, FL. September 17 – 21.

**Mobley CB**, Fox C, Pascoe C, Healy J, Ferguson B, Lowery R, Lockwood C, Stout J, Jäger R, Kavazis A, Wilson J, Roberts M. Phosphatidic acid feeding increases muscle protein synthesis and select mTORC1 pathway signaling mediators in rodent skeletal muscle. 11th Annual International Sports Science of Nutrition Meeting. Clearwater, FL. June 21 – 22.

**Mobley CB**, Fox C, Wilson J, Pascoe D, Amin R, Dalbo V, Wilson J, Roberts M. Effects of purported anabolic nutrients on myostatin-induced skeletal muscle atrophy in C2C12 myotubes. 61st Annual American College of Sports Medicine Meeting. Orlando, FL. May 27 – 31.

**Mobley CB**, Fox C, Ferguson B, Pascoe C, Healy J, Lockwood C. Roberts M. Differential effects of whey protein concentrate and hydrolyzed whey/egg protein blends on postprandial markers of insulin signaling and skeletal muscle anabolism in rats. 98th Annual Experimental Biology Meeting. San Diego, CA. April 28.

# *Regional Conference Proceedings*

**2018** **Mobley CB**, Haun CT, Roberson PA, Mumford PW, Kephart WC, Romero MA, Osburn SC, Vann CG, Young KC, Beck DT, Lockwood CM, Roberts MD. Biomarkers associated with type II muscle fiber hypertrophy response following 12-weeks of resistance training in young, untrained males. Southeastern Chapter of the American College of Sports Medicine Meeting. Chattanooga, TN. February 14 – 17.

**2017 Mobley CB**, Haun CT, Roberson PA, Mumford PW, Kephart WC, Romero MA, Osburn SC, Vann CG, Young KC, Beck DT, Lockwood CM, Roberts MD. Biomarkers associated with type II muscle fiber hypertrophy response following 12-weeks of resistance training in young, untrained males. 5th Annual UAB Center for Exercise Medicine Symposium. Birmingham, AL. September 22.

**2016 Mobley CB**, Mumford PW, Kephart WC, Haun CT, Holland AM, Osburn SC, Beck DT, Martin JS, Young KC, Kavazis AN, Lowery RP, Wilson JM, Roberts MD. Associations of fast- and slow-twitch muscle fiber size and markers of skeletal muscle hypertrophy in young, middle age, and older rodents. 4th Annual UAB Center for Exercise Medicine Symposium. Birmingham, AL. September 22.

**Mobley CB**, Mumford P, Pascoe D, Miller M, Roberts M. Anabolic effects of whey protein persist beyond essential amino acid content in myotubes. Southeastern Chapter of the American College of Sports Medicine Meeting. Greenville, SC. February 18 – 20.

**2015 Mobley CB**, Mumford P, Pascoe D, Pustovyy O, Miller M, Lockwood C, Roberts M. Anabolic effects of whey protein- and milk-derived exosomes on skeletal muscle. 3rd Annual UAB Center for Exercise Medicine Symposium. Birmingham, AL. September 25. *1st place Research Presentation Award*.

**Mobley CB**, Kirby T, Fox C, Ballmann C, Quindry J, McCarthy J, Roberts M. Inducible overexpression of p21Cip1 in myotubes promotes an increase in protein synthesis and myotube hypertrophy. Southeastern Chapter of the American College of Sports Medicine Meeting. Jacksonville, FL. February 13 – 15. *2nd place Doctoral Student Research Presentation Award*.

**2014 Mobley CB**, Fox C, Thompson M, Healy J, Young K, Wachs T, Moon J, Kim M, Pascoe D, Roberts M. Differential effects of L-leucine and whey protein on post-exercise skeletal muscle protein synthesis. 2nd Annual UAB Center for Exercise Medicine Symposium. Birmingham, AL. September 26.

**Mobley CB**, Toedebush R, Heese A, Zhu C, Cruthirds C, Lockwood C, Booth F, Roberts M. Effects of an anti-inflammatory supplement on liver health markers following Western Diet feeding in rats. Accepted for presentation at Southeastern Chapter of the American College of Sports Medicine Meeting, Greenville, SC. February 13 – 15.

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Description automatically generated <https://scholar.google.com/citations?user=HRgjw5gAAAAJ&hl=en>

My NCBI: <https://www.ncbi.nlm.nih.gov/myncbi/1FAUAhaRl5ZYdQ/bibliography/public/>

# LABORATORY TECHNIQUES & TRAINING

* Body composition assessment (BIA, BIS, DEXA, Skinfolds)
* Indirect calorimetry (exercise tests, resting energy expenditure)
* Maximal exercise tests (1RM, IMTP, VO2max)
* Submaximal exercise tests
* Phlebotomy (venipuncture)
* Percutaneous human skeletal muscle biopsy
* Enzyme-linked immunosorbent assay (ELISA) for serum or plasma analyses
* Extracellular vesicle isolation, characterization, and analysis from cells, bodily fluids, and dietary food sources
* Skeletal muscle nuclei (myonuclei) isolation and analysis
* Single myofiber isolation and analysis
* Immunohistochemistry (IHC) for protein expression and localization in muscle cross-section and single myofiber.
* Flow cytometry and fluorescence activated-cell sorting (FACS)
* Immunoblotting (Western Blotting) for protein expression
* Reverse-Transcriptase and quantitative polymerase chain reaction (RT/q-PCR) for gene expression.
* Click Chemistry detection method using azides and alkynes as specific binding moieties for molecular targets.
* DNA, RNA, Protein isolation for biochemical analyses
* Ribosome isolation, purification, and quantification
* MyoVision and ZEN imaging software analysis
* Progressive wheel running in murine models
* Synergist ablation surgery (functional overload for rapid muscle growth)
* Animal husbandry and rodent colony management
* Transgenic mice husbandry
* Inducible gene expression in transgenic mice
* Genotyping of transgenic mice
* Isolation of skeletal muscle stem cells
* Electrical stimulation of skeletal muscle stem cells
* Cell culture methodologies:
  + Human primary muscle stem cells (satellite cells),
  + Murine primary muscle stem cells (satellite cells),
  + Human umbilical vein cells (HUVEC),
  + C2C12 myoblasts and derived myotubes,
  + CaCo-2 intestinal cells,
  + HepG2 liver cells,
  + Plasmid transfection,
  + Viral DNA transfection,
  + DNA cloning.

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