Curriculum Vitae

Alex Claiborne, PhD
Postdoctoral Scholar
Human Performance Laboratory
Department of Kinesiology
East Carolina University, Greenville, NC
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EDUCATION

Doctor of Philosophy, Human Bioenergetics: Summer 2018 – Summer 2022
Cognate: Integrative Physiology
Ball State University, Muncie, Indiana
Dissertation: Skeletal muscle responses to 70 days bed rest with exercise
Advisor: Todd Trappe, PhD

Master of Science, Kinesiology & Health: Summer 2016 - Spring 2018
Concentration: Exercise & Health Science
Miami University, Oxford, Ohio
Thesis: Response of heart rate variability to exercise and altitude stress in humans
Advisor: Helaine Alessio, PhD

Bachelor of Science, Biology: Fall 2011 - Spring 2015
Chemistry minor
The University of North Carolina at Wilmington, Wilmington, NC

PROFESSIONAL APPOINTMENTS

Assistant Professor: August 2025 – current
Department of Kinesiology, Nutrition, and Health
Miami University, Oxford, OH

Postdoctoral Scholar: September 2022 – July 2025
East Carolina University Human Performance Laboratory, Greenville, NC
Advisor: Linda May, PhD

Doctoral Research Fellow: June 2018 – July 2022
Ball State University Human Performance Laboratory, Muncie, IN

Masters Graduate Assistant, Teaching & Research: May 2016 – May 2018
Miami University Dept. of Kinesiology & Health, Oxford, OH

Travel Abroad Assistantship: Summer 2017
Kathmandu & Annapurna Circuit, Nepal
Miami University, Oxford, OH

Clinical Exercise Physiology Internship: Fall 2015 – Spring 2016
Healthy Exercise & Lifestyle Program
Wake Forest University Health & Exercise Science, Winston Salem, NC

TEACHING EXPERIENCE

Full-time Lecture:
EXSC 293: Foundations of Exercise Physiology: Spring 2021
n = 21 students, average student evaluation score: 4.35/5
Ball State University School of Kinesiology

Laboratory Teaching Assistant
KNH 184: Introductory Motor Control & Learning: Fall 2016
KNH 382: Fitness Assessment & Exercise Prescription: Fall 2016 & Spring 2017
KNH 468: Exercise Physiology: Fall 2017
Miami University Education, Health & Society

Guest Lecture:
KINE 6208: Cardiopulmonary Physiology, Spring 2024
2 lectures, *n*=12 students
Topics: Ventilation & Perfusion; Control of Ventilation and Acid-Base Balance

KINE 3805: Physiology of Exercise, Spring 2023, Spring 2024, Spring 2025
6 lectures; *n*=37 students, with faculty peer evaluation
Topics: Adaptations to Aerobic and Anaerobic Training; Altitude, Hyperbaric Environments and Microgravity

PUBLICATIONS

-First Author, Published-

Claiborne A, Jevtovic F, Biagioni EM, Wisseman B, Roenker B, Rossa L, Ollmann C, Kern K, Steen D, McDonald S, Strom C, Newton E, Isler C, deVente J, Mouro S, Collier D, Kuehn D, Kelley GA, Maples J, O'Tierney Ginn P, Broskey NT, Houmard JA, May LE. Prenatal Exercise Modality and Resting Blood Lactate in Overweight and Obese Women. *Physiol Rep*. Accepted for Publication. 2025.

Claiborne A, Jevtovic F, Biagioni E, Wisseman B, Steen D, Kern K, Roenker B, Rossa L, Ollman C, deVente J, O'Tierney-Ginn PF, Kaneko-Tarui T, Kelley GA, Houmard JA, Broskey NT, May LE. Prenatal Exercise Regulates Influence of Parental Body Mass Index on Birth Outcomes. *Early Hum Dev* 208:106313, 2025. doi: 10.1016/j.earlhumdev.2025.106313.

Claiborne A, Wisseman B, Kern K, Steen D, Jevtovic F, McDonald S, Strom C, Newton E, Isler C, deVente J, Mouro S, Whiteside J, Muhammad J, Collier D, Kuehn D, Kelley GA, May LE. Exercise During Pregnancy FITT-V: Birth Outcomes in Pregnancies at Risk of Hypertensive Disorders of Pregnancy. *AJOG Global Reports* 5(2):e100472, 2025. doi: 10.1016/j.xagr.2025.100472.

Claiborne A, Jevtovic F, Zheng D, Strom C, Wisseman B, McDonald S, Newton E, Mouro S, deVente J, Houmard JA, Broskey NT, May LE. Prenatal Exercise Modulates One-Month Infant Body Fat & Cellular Adipogenesis. *Physiol Rep* 12(23):e70145, 2024. doi: 10.14814/phy2.70145.

Claiborne A, Wisseman B, Kern K, Steen D, Jevtovic F, McDonald S, Strom C, Newton E, Isler C, deVente J, Mouro S, Collier D, Kuehn D, Kelley GA, May LE. Exercise During Pregnancy Dose: Influence on Preterm Birth Outcomes. *EJOGRB* 300, 2024. doi: 10.1016/j.ejogrb.2024.07.017.

Claiborne A, Wisseman B, Kern K, Steen D, Jevtovic F, McDonald S, Strom C, Newton E, Isler C, deVente J, Mouro S, Collier D, Kuehn D, Kelley GA, May LE. Exercise During Pregnancy FITT-V: Association with Birth Outcomes. *Birth Defects Res* 116(4):e2340, 2024. doi: 10.1002/bdr2.2340.

Claiborne A, Williams A, Jolly C, Isler C, Newton E, May L, George S. Methods for analyzing infant heart rate variability: A preliminary study. *Birth Defects Res* 115(10):998-1006, 2023. doi: 10.1002/bdr2.2177.

Claiborne A, Jevtovic F, May LE. A Narrative Review of Exercise Dose During Pregnancy. *Birth Defects Res* 115(17):1581-1597, 2023. doi: 10.1002/bdr2.2249.

Claiborne A, McDonald S, Jevtovic F, Strickland D, Newton E, Isler C, Steed RD, Sarno L, Kelley GA, Kuehn D, Fang X, May LE. Maternal Exercise Type and Fetal Echocardiographic Measures. *J Clin Cardiol Interv* 6(4), 2023. doi: 10.31579/2641-0419/324.

Claiborne A, Alessio H*, Slattery E, Hughes M, Barth E, Cox RH. Heart rate variability reflects similar cardiac autonomic function in explosive and aerobically trained athletes. *IJERPH* 18(20), 2021. doi: 10.3390/ijerph182010669.

-First Author, Under Review or In Preparation-

Claiborne A, deRoia G, Whitaker K, Suminski R, Patterson F, Wisseman B, Kern K, Steen D, McDonald S, Strom C, Newton E, Isler C, deVente J, Mouro S, Collier D, Kuehn D, Kelley GA, May L. Effect of Exercise During Pregnancy on Maternal Sleep. *JCEP*. Under Review. 2025.

Claiborne A, Wisseman B, Strom C, Bauer CT, Jevtovic F, Vahdati A, Pant A, McDonald SM, Isler C, Newton E, Kuehn D, Kelley GA, May LE. Aerobic Exercise During Pregnancy and 1-Month Infant Fat Distribution via MRI. *Early Hum Dev.* In Preparation.

Claiborne A, Trappe S, Trappe T. The Importance of Exercise in the Microgravity Environment. Implications for Skeletal Muscle. *Comprehensive Physiology*. In Preparation.

-Co-Author, Published-

Sanchez S, Kern K, **Claiborne A**, Wisseman B, Steen B, Roenker B, Lilley A, Strom CJ, Newton E, deVente JE, Mouro S, Collier D, Kuehn D, DuBose K, Kelley GA, Gross McMillan A, Castro J, Paricio V, May LE. Impact of supervised-concurrent exercise during pregnancy on infant neuromotor skills: A post-hoc analysis stratified by maternal BMI. *Sports Medicine – Open* 20;11(1):78, 2025. doi: 10.1186/s40798-025-00886-x

Kern K, **Claiborne A**, Jevtovic F, Wisseman B, Steen D, Strom C, Lilley A, Newton E, Isler C, deVente J, Mouro S, Collier D, Dubose KD, Gross McMillan A, May LE. Maternal Exercise Mode and 1-month Infant Neuromotor Outcomes. *Infant Behav Devel* 29:80:102069, 2025. doi: 10.1016/j.infbeh.2025.102069.

Jevtovic F, **Claiborne A**, deVente J, Mouro S, Houmard J, Broskey N, May L. Maternal resistance exercise increases infant energy expenditure. *Am J Physiol Endocrinol Metab*. 2024. Doi:10.1152/ajpendo.00414.2024.

Jevtovic F, **Claiborne A**, Biagioni E, Collier D, deVente J, Mouro S, Kaneko-Tarui T, O'Tierney Ginn P, Goodyear L, Houmard J, Broskey N, May L. Paternal obesity decreases infant MSC mitochondrial functional capacity. *Am J Physiol Endocrinol Metab.* 2024. doi: 10.1152/ajpendo.00239.2024.

Jevtovic F, Collier DN, deVente J, Mouro S, **Claiborne A**, Wisseman B, Steen D, Kern K, Broskey N, May LE. Maternal exercise increases infant resting energy expenditure: Preliminary results. *Int J Obes*. 2024. doi: 10.1038/s41366-024-01560-0.

Whiton TK, Wisseman B, Strom C, McDonald S, **Claiborne A**, Newton E, Isler C, deVente J, Kelley GA, Babatunde OT, May LE. The Influence of Exercise and BMI on Food Choices During Pregnancy. *AEHS* 2024. doi:10.1016/j.aehs.2024.09.001.

Jevtovic F, Zheng D, **Claiborne A**, Biagioni EM, Wisseman BL, Krassovskaia PM, Collier DN, Isler C, DeVente JE, Neufer PD, Houmard JA, May LE. Effects of maternal exercise on infant mesenchymal stem cell mitochondrial function, insulin action, and body composition in infancy. *Physiol Rep* 2024. doi:10.14814/phy2.16028.

Trappe T, Minchev K, Perkins R, Lavin K, Jemiolo B, Ratchford S, **Claiborne A**, Lee G, Finch WH, Ryder J, Ploutz-Snyder L, Trappe S. NASA SPRINT exercise program efficacy for vastus lateralis and soleus skeletal muscle health during 70 days of simulated microgravity. *J Appl Physiol* 2023. doi: 10.1152/japplphysiol.00489.2023.

May LE, McDonald S, Stewart C, Newton E, Isler C, Steed D, Sarno LA, Kelley GA, Chasan-Taber L, Kuehn D, Allman BR, Strom C, **Claiborne A**, Fang X. Influence of Supervised Maternal Aerobic Exercise During Pregnancy

on One-Month Old Neonatal Cardiac Function and Outflow: A Pilot Study. *Med Sci Sports Exerc.* 2023. doi: 10.1249/MSS.0000000000003227.

Jevtovic F, Lopez CA, Zheng D, Cortright RN, Biagioni E, **Claiborne A**, Isler C, DeVente JE, Houmard JA, May LE, Broskey NT. Differences in substrate metabolism between African American and Caucasian infants: evidence from mesenchymal stem cells. *J Appl Physiol* 134(5):1312-1320, 2023. doi: 10.1152/japplphysiol.00737.2022.

Jevtovic F, Zheng D, Houmard JA, Kern K, **Claiborne A**, Lopez CA, Broskey NT, Isler C, DeVente J, Newton E, May LE. Infant myogenically differentiated MSC insulin sensitivity is associated with infant adiposity at 1 and 6 months of age. *Obesity.* 2023. doi: 10.1002/oby.23829.

Fountain WA, Naruse M, Finch WH, **Claiborne A**, Trappe SW, Trappe TA. Influence of aspirin on aging skeletal muscle: Insights from a cross-sectional cohort of septuagenarians. *Physiol Rep.* 2023. doi: 10.14814/phy2.15669.

Fountain WA, Naruse M, **Claiborne A**, Trappe S, Trappe TA. Controlling inflammation improves aging skeletal muscle health. *Exerc Sport Sci Rev* 51(2): 51-56, 2023. Doi: 10.1249/JES.0000000000000313.

Naruse M, Fountain WA, **Claiborne A**, Finch WH, Trappe S, Trappe TA. Muscle group-specific skeletal muscle aging: a 5-year longitudinal study in septuagenarians. *J Appl Physiol* 134(4):915-922, 2023. doi: 10.1152/japplyphysiol.00769.2022.

Fountain W, Naruse M, **Claiborne A**, Stroh A, Gries K, Jones A, Minchev K, Lester B, Raue U, Trappe S, Trappe T. Low-dose aspirin and COX inhibition in human skeletal muscle. *J Appl Physiol* 129(6): 1477-1482, 2020. doi: 10.1152/japplphysiol.00512.2020.

Naruse M, Fountain W, **Claiborne A**, Chambers T, Jones A, Stroh A, Montenegro C, Lynch C, Minchev K, Trappe S, Trappe T. Influence of low-dose aspirin, resistance exercise, and sex on human skeletal muscle PGE_2/COX pathway activity. *Physiol Rep*. 2021 9(5): e14790, 2021. doi: 10.14814/phy2.14790.

-*Co-Author, Under Review or In Preparation*-

Jevtovic F, Wisseman B, Jahan F, **Claiborne A**, Collier DN, deVente JE, Mouro S, Zeczycki T, Szumilewicz A, Goodyear LJ, May LE. Maternal exercise alters placental proteome in an exercise mode-specific manner. *AJP Endo*. Under Review. 2025.

Jevtovic F, Wisseman B, Jahan F, **Claiborne A**, Collier DN, deVente JE, Mouro S, Zeczycki T, Goodyear LJ, May LE. Effects of maternal exercise modes on infant cord blood proteome. *AJP Endo*. Under Review. 2025.

Sitzberger C, Wacker-Gußmann A, Oberhoffer-Fritz R, Lobmaier SM, Strom C, McDonald SM, **Claiborne A**, May LE. Supervised and unsupervised physical activity programs in pregnancy– is there a benefit for both? *Sports Medicine - Open*. Under Review. 2025

Biagioni EM, **Claiborne A**, Wisseman BL, Whiton TK, Strom C, McDonald SM, Mouro S, deVente J, Newton E, Kelley GA, Sastre LR, Babatunde OT, May LE. Evaluation of Dietary Intake Patterns Among Pregnant Women Enrolled in A Randomized Controlled Exercise Trial. *Nutrients.* Under Review. 2024.

Zhang D, Wisseman B, **Claiborne A**, Steen D, Kern K, Roenker B, Strom C, McDonald SM, deVente J, Mouro S, Newton E, Kuehn D, Kelley GA, May LE. Influence of Exercise Types During Pregnancy on Gestational Weight and Body Fat Gain – A Randomized Controlled Trial. *Journal of Pregnancy*. Under Review. 2024.

Zhang D, Wisseman B, **Claiborne A**, Steen D, Kern K, Roenker B, Strom C, McDonald SM, deVente J, Mouro S, Newton E, Kuehn D, Kelley GA, May LE. Exercise During Pregnancy Improves Ponderal Index in Neonates Born to Health Weight Participants – A Randomized Controlled Trial. *Journal of Pregnancy.* In Preparation.

INVITED LECTURES

Claiborne A. How does maternal exercise during pregnancy influence offspring health? Research Presentation. Miami University. January 2025.

Strom C, Wisseman B, Claiborne A, May L. Prevention Through Intervention. The Growing Science of Maternal Exercise and How It Improves the Health of Mother and Baby. International Community of Scholars in Kinesiology Symposium. Western Kentucky University (Online). October 2024.

Claiborne A. Exercise During Pregnancy: Dose-Response for Infant Health. Early Career Symposium. Colorado University Anschutz Medical Campus. May 2023.

Claiborne A. Influence of 70 Days Bed Rest and the NASA SPRINT Exercise Countermeasures Program on Skeletal Muscle Health. East Carolina University. August 2022.

Claiborne A. Influence of 70 Days Bed Rest and the NASA SPRINT Exercise Countermeasures Program on Skeletal Muscle Health. Marquette University. July 2022.

CONFERENCE PRESENTATIONS

-Presenter-

Claiborne A, Jevtovic F, Zheng D, Strom C, Wisseman B, Kern K, Steen D, Newton E, Mouro S, deVente J, Houmard JA, Broskey NT, May L. Exercise During Pregnancy Modulates Infant Body Fat and Cellular Adipogenesis. 2025 National American College of Sports Medicine Conference. *Poster*.

Claiborne A, Jevtovic F, Zheng D, Biagioni E, Wisseman B, Krassovskaia P, Collier D, deVente J, Neufer D, Houmard J, May L. Maternal Exercise Improves Infant Mesenchymal Stem Cell Lipid Storage and Oxidation, and Decreases Infant Adiposity. 2024 American Physiological Society Summit. *Poster*. doi: 10.1152/physiol. 2024.39.S1.2440

Claiborne A, Jevtovic F, Wisseman B, Kern K, Steen D, Isler C, DeVente J, May LE. Volume of Exercise During Pregnancy Influences Offspring Health Biomarkers. 2023 National American College of Sports Medicine Conference. *Oral Presentation.*

Claiborne A. Exercise During Pregnancy: Dose-Response for Infant Health. 2023 East Carolina University Research & Creative Achievement Week. *Oral Presentation.*

Claiborne A. Exercise During Pregnancy: Dose-Response for Infant Health. 2023 East Carolina University Kinesiology (KINE) Research Day. *Oral Presentation.*

Claiborne A, Trappe S, Trappe T. Human Skeletal Muscle Responses to Microgravity
2020 Integrative Physiology of Exercise Conference. *Poster*.

Claiborne A, Walsh M, Alessio H, Slattery E, McMath A. Heart Rate Variability Response to Altitude Exposure in College-Aged Students in Nepal. 2018 National American College of Sports Medicine Conference. *Poster*.

Wallace A, **Claiborne A**, Brady E, Liu S, Walsh M. Comparison of force quantities n barefoot vs. shod running. 2018 Mid-South Movement Science Conference. *Oral Presentation*.

Claiborne A, Wallace A, Walsh M. Body position for optimal Wingate performance in trained cyclists. 2018 Mid-South Movement Science Conference. *Oral Presentation*.

Claiborne A, Alessio H, Slattery E, Nilsson E, Cox R, Barth E. Comparison of Heart Rate Variability in Intercollegiate Explosive Power vs. Sustained Power and Endurance Athletes. 2017 National American College of Sports Medicine Conference. *Poster*. *Med Sci Sports Ex 49:720-721*

-Co-Author-

Claiborne A, May L, De Roia G, Whitaker K, Suminski R, Patterson F, Wisseman B, Kern K, Steen D, McDonald S, Strom C, deVente J, Mouro S, Collier D, Kelley G. Exercise During Pregnancy Influences Maternal Sleep Quantity and Quality. 2025 Canadian Society for Exercise Physiology Conference. *Poster*.

Evans D, Biagioni E, **Claiborne A**, May L. Effects of Gestational Diabetes Mellitus Treatment on Placenta Triglycerides and Efficiency. 2025 East Carolina University Research & Creative Achievement Week. *Poster*.

Biagioni EM, **Claiborne A**, Wisseman BL, Whiton TK, Strom C, McDonald S, Mouro S, deVente J, Newton E, Kelley GA, Sastre LR, Babatunde OT, May LE. Changes in Body Composition During Pregnancy Correspond to Macronutrient Distribution of Maternal Diet. 2024 Annual Meeting of the Development Origins of Health and Disease Society. *Poster*.

May L, McDonald S, **Claiborne A**, Strickland D, Newton E, Isler C, Steed RD, Sarno L, Kelley G, Chasan-Taber, Keuhn D, Allman-Tucker BR, Strom C, Fang X. Influence of Maternal Exercise Types During Pregnancy on Fetal Cardiac Measures. 2023 National American College of Sports Medicine Conference. *Oral Presentation*.

Wisseman B, Steen D, Jevtovic F, Kern K, **Claiborne A**, Isler C, DeVente J, Babatunde T, May L. The Influence of Exercise and Body Mass Index on Food Choices During Pregnancy. 2023 National American College of Sports Medicine Conference. *Poster*.

Yendamuri SP, Biagioni EM, **Claiborne A**, Rowe JC, Broskey NT. Impact of *in utero* Metformin exposure on Infant Stem Cell Lipid Storage. 2023 Brody Medical School Summer Biomedical Research Program. *Poster.*

Fountain W, Naruse M, **Claiborne A**, Stroh A, Gries K, Jones A, Minchev K, Lester B, Raue U, Trappe S, Trappe T. Low Dose Aspirin and PGE2/COX Pathway Inhibition in Human Skeletal Muscle: Influence of Aerobic Exercise. 2020 Integrative Physiology of Exercise Conference. *Poster*.

Naruse M, Fountain W, **Claiborne A**, Chambers T, Jones A, Stroh A, Montenegro C, Lynch C, Minchev K, Trappe S, Trappe T. Low Dose Aspirin and PGE2/COX Pathway Inhibition in Human Skeletal Muscle: Influence of Resistance Exercise and Sex. 2020 Integrative Physiology of Exercise Conference. *Poster*.

Chavez Martinez C, Chambers T, Minchev K, Stroh A, Fountain W, Jones A, **Claiborne A**, Lynch C, Lester B, Naruse M, Montenegro C, Finch H, Trappe T, Trappe S. Acute Cardiovascular, Hormonal, and Metabolic Responses to Aerobic Exercise. 2020 Integrative Physiology of Exercise Conference. *Poster*.

Chambers T, Naruse M, Minchev K, Lynch C, Lester B, Stroh A, Fountain W, Montenegro C, **Claiborne A**, Kuszmaul D, Chavez Martinez C, Jones A, Finch H, Trappe T, Trappe S. Acute Hormonal and Metabolic Responses to Whole-Body Resistance Exercise. 2020 Integrative Physiology of Exercise Conference. *Poster*.

Kuszmaul D, Chambers T, Naruse M, Lynch C, Stroh A, Fountain W, Montenegro C, **Claiborne A**, Chavez Martinez C, Jones A, Trappe T, Trappe S. Acute Cardiovascular

Response to Whole-Body Resistance Exercise. 2020 Integrative Physiology of Exercise Conference. *Poster*.

Alessio H, **Claiborne A**, Walsh M, Slattery E, McMath A. Comparison of Heart Rate Variability Response to Altitude between Himalayan Guides and College Students.
2017 Midwest Regional American College of Sports Medicine Conference. *Poster*.

McHenry M, **Claiborne A**, Iglesia E, Slattery E, Barth E, Alessio H, Cox R. Correlation between Heart Rate Variability and Biomarkers of Health in Varsity Athletes. 2017 Midwest Regional American College of Sports Medicine Conference. *Poster*.

FUNDING

-Funded Support-

Thrasher Research Fund Early Career Award (PI: Claiborne) $26,750 2024-2026
Prenatal Exercise Dose and Infant Adiposity (PEDIA). The aim of this project is to determine the beneficial effects of higher prenatal exercise duration and volume on adipogenesis in offspring mesenchymal stem cells (MSCs) and how cellular findings translate to infant body fat % and skinfold measurements.

Summer Biomedical Research Program (PI: Claiborne) $800 Summer 2024
Advanced Maternal Age and Infant Cellular Adiposity. The aim of this project is to determine the influence of advanced maternal age (>35 years) on triglyceride storage in infant mesenchymal stem cells (MSCs) collected from umbilical cord at delivery. Funds provided by ECU Brody School of Medicine.

-Support Under Review-

NIH Loan Repayment Program (PI: Claiborne) $26,130 2026-2028
Relationship of Lactate with Cardiometabolic Risk in Pregnant Women (M-LAC). It is the overall aim of this study to test whether exercise during pregnancy reduces circulating blood lactate concentration, and whether this occurrence benefits offspring, by improving birth outcomes or reducing offspring blood lactate.

-Unfunded Support-

American Heart Association (PI: Claiborne) $156,640 2025 - 2027
Relationship of Lactate with Cardiometabolic Risk in Pregnant Women and Offspring. It is the overall aim of this study to test whether exercise during pregnancy reduces circulating blood lactate concentration, and whether this occurrence benefits offspring, by improving birth outcomes or reducing offspring blood lactate.

NIH K99 Career Development Award (PI: Claiborne) $986,760 2025 – 2027
Metabolic Outcomes of Maternal Exercise (MOM-E). The aim of this project is to determine the beneficial effects of prenatal exercise on the relationship between maternal and offspring whole-body metabolic rate and cellular respiration in a cohort of pregnant women with obesity.

Gerber Research Foundation (PI: Claiborne, May) $350,000 2023 - 2026
The Role of Prenatal Exercise Intensity, Duration, Volume and Type in Infant Health Outcomes. The aim of this project was to specify dose effects of prenatal exercise on infant body morphometrics and markers of metabolic health in the first year of life.

NIH F32 Postdoctoral Fellowship (PI: Claiborne) $210,372 2024 – 2027
Prenatal Exercise Dose and Infant Adiposity (PEDIA). The aim of this project is to determine the beneficial effects of higher prenatal exercise duration and volume on adipogenesis in offspring mesenchymal stem cells (MSCs) and how cellular findings translate to infant body fat % and skinfold measurements.

Thrasher Research Fund (PI: Claiborne, May, Collier, deVente) $510,000 2023 - 2026
The Role of Prenatal Exercise Dose on Preventing Childhood Obesity. The aim of this study is to improve child health outcomes to drive advances in obstetric and pediatric clinical practice.

American Heart Association (PI: Claiborne) $144,580 2024-2026
Prenatal Exercise Dose and Infant Adiposity (PEDIA). The aim of this project is to determine the beneficial effects of higher prenatal exercise duration and volume on adipogenesis in offspring mesenchymal stem cells (MSCs) and how cellular findings translate to infant body fat % and skinfold measurements.

American College of Sports Medicine (PI: Claiborne) $10,000 2024-2025
Prenatal Exercise Dose and Infant Adiposity (PEDIA). The aim of this project is to determine the beneficial effects of higher prenatal exercise duration and volume on adipogenesis in offspring mesenchymal stem cells (MSCs) and how cellular findings translate to infant body fat % and skinfold measurements.

NIH F32 Postdoctoral Fellowship (PI: Claiborne) $215,064 2024 – 2027
Prenatal Exercise Dose and Infant Adiposity 2 (PEDIA 2). The aim of this project is to determine the beneficial effects of higher prenatal exercise duration and volume on respiration and adipogenesis in offspring mesenchymal stem cells (MSCs) and how cellular findings translate to infant whole-body metabolic rate and adiposity.

NIH Loan Repayment Program (PI: Claiborne) $26,130 2024-2026
Repayment of incurred student loan debt to be completed during years 2 & 3 of postdoctoral work.

HONORS AND AWARDS

WILEY Top Cited Article. Claiborne A, Jevtovic F, May LE. A Narrative Review of Exercise Dose During Pregnancy. *Birth Defects Research* 115(17):1581-1597, 2023. doi: 10.1002/bdr2.2249. Article among top 10 most-cited papers published by the journal in 2023.

ECU Kinesiology Travel Award. $500 for travel-related expenses to present seminar and oral presentation at Colorado University Anschutz Medical Campus and ACSM National Meeting, Denver, CO, USA in May of 2023.

Miami University Graduate Student Travel Award. Funds for travel-related expenses to perform research on heart rate variability as an indicator of the acute autonomic stress response seen in high altitude exposure. Miami University (Ohio), 2017.

LABORATORY EXPERIENCE

Mesenchymal Stem Cell Culture
Initiate stem cell line from sectioned umbilical cord tissue. Store and culture in undifferentiated and differentiated (skeletal muscle & adipose) states.

Radioactive Isotope Tracer Metabolism
Apply ^{14}C-labelled radioisotope labelled glucose and fatty acid substrate solutions to cultured cells and assess metabolism using a CO_2 scrub mechanism.

Biospecimens
Mesenchymal stem cells: initial culture & differentiation into muscle, adipose tissue
Placenta: tissue dissection & processing
Blood: *venous & umbilical cord*, phlebotomy & processing; gravid and non-gravid adults
Skeletal muscle: percutaneous Bergström needle biopsy suction, pressure, processing
Adipose: subcutaneous abdominal adipose biopsy preparation & cleaning

Biochemistry
Skeletal muscle enzyme activity assays via spectrophotometry and fluorometry, ex vivo skeletal muscle incubation, pipetting, skeletal muscle sectioning & immunohistochemistry & CSA, single muscle fiber physiology, SDS PAGE

Indirect Calorimetry Testing
Metabolic cart operation & aerobic exercise testing
Development of standard operating & troubleshooting procedures
Conducting metabolic tests on adults in rest and exercise condition; infants at rest

Exercise Prescription & Tracking
Cycle ergometer (Lode, Monarch) & treadmill (Woodway) testing & maintenance
Interventionist for endurance & resistance exercise training
Standard operating procedures developed to record cycle power from training sessions
Strength testing (Isometric knee extension & handgrip)
ECG & heart rate monitor operation & assessment, exercise and resting blood pressure

Body Composition

Assessment of body fat using: skinfold calipers, Bod Pod, DXA, Bioelectrical Impedance on gravid and non-gravid adults, as well as infants in the first year of age.

Molecular Transducers of Physical Activity Consortium (MoTrPAC)
Involvement as member of one team in a multiple-site study investigating the physiology of acute & chronic exercise responses among highly trained, sedentary, & exercise-trained sedentary participants.

Laboratory Safety & Operations
CITI, BLS & biohazard chemical hygiene
Radio-isotope qualified handler
Ordering & Tracking

OTHER EXPERIENCE

Data Storage, Sharing & Analysis
Microsoft Excel: Organizing large datasets for sharing with other researchers, and analysis.
REDCap: Upload and download of clinical trial data sets for organization into spreadsheets for analysis.
Statistical Computing: Experience with SPSS and JMP Pro 17 for mean comparisons, correlation & regression

LEADERSHIP & SERVICE

Search Committees:
Clinical Research Associate, *n* = 1
Human Performance Laboratory, Department of Kinesiology, East Carolina University, Greenville, NC

Clinical Research Coordinator, *n* = 3
Human Performance Laboratory, Department of Kinesiology, East Carolina University, Greenville, NC

Postdoctoral Scholar, *n* = 1
Human Performance Laboratory, Department of Kinesiology, East Carolina University, Greenville, NC

Student Mentorship:
Deniya Evans, Honors College, East Carolina University 2024-2025
Mariella Florimonte, Brody School of Medicine Summer Biomedical Research Program, ECU 2024
SriPallavi Yendamuri, Research Assistant, East Carolina University 2024 & Undergraduate, ECU 2023
Makyla Mcleod, Honors College, East Carolina University 2023-2024
Makayla Mcleod, Honors College, East Carolina University 2023-2024

Manuscript Peer Review:
Journal of Strength & Conditioning Research
Medicine & Science in Sports & Exercise
International Journal of Obesity
Postgraduate Medicine
SAGE Open Nursing
Scandinavian Journal of Medicine & Science in Sport

Professional Memberships:
American College of Sports Medicine: 2016 – present
American Physiological Society: 2020 – present

Leadership:
Secretary, Postdoctoral Association, East Carolina University 2023 – 2024
Council member, East Carolina Velo Cycling Club 2023 – present
Treasurer, Cycling Club, Miami University 2016 – 2018
President, Cycling Club, University of North Carolina Wilmington 2014 – 2015