William A. Clarkson, B.S.
Department of Exercise Science
Arnold School of Public Health
University of South Carolina
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Education

Master of Science, Exercise Science, Expected December 2022
Arnold School of Public Health
University of South Carolina, Columbia, SC
Current GPA: 3.5

Bachelor of Science, Exercise Science, May 2018
Arnold School of Public Health
University of South Carolina, Columbia, SC
Emphasis: Scientific Foundations
Magna Cum Laude
With Leadership Distinction in Research

Professional Experience

Graduate Research Assistant, Foundations of Lipids and Exercise Laboratory, Department of Exercise Science, Arnold School of Public Health, University of South Carolina, Columbia, SC January 2021 – present

- Research team member of NIH R01 project titled Molecular Basis of Exercise-Induced Changes in HDL Function. Perform the processing and handling of blood plasma samples from four large clinical exercise trials (N~1250), including the isolation and collection of HDL aliquots for proteomics, metabolomics, and lipidomics, and complex molecular assays.
- Leading project investigating the association of metabolic health and weight status with cholesterol efflux capacity and NMR lipoprotein profile cross-sectionally and after a 7-9 year of follow-up in ~2000 individuals from the Dallas Heart Study.
- Junior reviewer for journal manuscript publication and conference abstracts.
- Supervised and trained undergraduate and graduate assistants in the FPLC-SEC method of isolation of HDL-C, HDL-C faction aliquoting, aliquot processing for further proteomic, metabolomic, and lipidomic analysis, and sample storage.

Research Specialist, University of South Carolina, Department of Exercise Science, Columbia, SC September 2020 – January 2021

- Research team member of NIH R01 project titled Molecular Basis of Exercise-Induced Changes in HDL Function. Perform the processing and handling of blood plasma samples from four large clinical exercise trials (N~1250), including the

isolation and collection of HDL aliquots for proteomics, metabolomics, and lipidomics, and complex molecular assays.

Supplemental Instruction Leader, University of South Carolina, Student Success Center, Columbia, SC January 2017-May 2018

- Supported more than 250 students over the course of three semesters in Business Calculus and College Algebra by designing three weekly 50-minute review/tutoring sessions based on group collaborative learning.

Honors and Awards

University of South Carolina Department of Exercise Science Outstanding Student of the Year, 2018

Second Place Undergraduate Poster Presentation, Discover USC, 2018

University of South Carolina Achievement Scholarship, Fall 2017 – Spring 2018

Research

Manuscripts

In Preparation

1. **Clarkson WA**, Barber JL, Ayala EJ, Schwartz CS, Mcuillicuddy F, Saldahna S, Akinmolayemi A, Neelan I, Rohatgi A, Sarzynski MA. Association of metabolic health and weight status with cholesterol efflux capacity and NMR lipoprotein profile. (Target Journal: *Circulation*)

Presentations

In Preparation

2. **Clarkson WA**, Barber JL, Robbins JM, Rao P, Mi M, Dev PK, Ghosh S, Clish C, Katz DH, Gerszten RE, Bouchard C, Sarzynski MA. Associations Between Changes in Plasma Proteins and Body Composition Traits in Response to Endurance Training. Poster Presentation at SEACSM meeting Feb 2022 and National ACSM meeting June 2022.

1. **Clarkson WA**, Barber JL, Armstrong B, Wang Y, McGillicuddy FC, Saldanha S, Akinmolayemi O, Neeland IJ, Rohatgi A, Sarzynski MA. Combined Metabolic Health and Obesity Status is Associated with Markers of High-Density Lipoprotein Metabolism: Dallas Heart Study. Poster presentation at American Heart Association: EPI | Lifestyle, Chicago, IL, March 2022.

Completed

4. Jones A, Barber JL, Ayala EJ, Schwartz CS, **Clarkson WA**, Skinner JS, Bouchard C, Sarzynski MA. Cardiorespiratory fitness at baseline and in response to training across metabolic health and weight phenotypes. Poster Presentation at SEACSM virtual meeting Feb 2021 and National ACSM virtual meeting May 2021.

3. Barber JL, Ruiz-Ramie JJ, **Clarkson WA**, Olivier M, Bouchard C, Rohatgi A, Sarzynski MA. Association of Exercise-Induced Changes in Cholesterol Efflux

Capacity with Changes in the HDL Proteome. Oral Presentation at The HDL Workshop, Boston, MA, May 17, 2019.

2. Barber JL, Ruiz-Ramie JJ, **Clarkson WA**, Olivier M, Bouchard C, Rohatgi A, Sarzynski MA. Association of Exercise-Induced Changes in Cholesterol Efflux Capacity with Changes in the HDL Proteome. Poster presentation at American Heart Association Vascular Discovery: From Genes to Medicine, Boston, MA, May 15, 2019.

1. Ayala EJ*, **Clarkson WA***, Ruiz-Ramie JJ, Barber JL, Sarzynski, MA. HDL Anti-Inflammatory and Anti-Oxidative Responses to Endurance Exercise Training. Poster presentation at Discover USC, April 25, 2018. *equal authorship

Research Support/Grant Funding

Completed

UofSC Office of Undergraduate Research January 2018 – May 2018
Magellan Scholar Research Award
Title: HDL Anti-Inflammatory and Anti-Oxidative Responses to Endurance Exercise Training
Budget: $3,000
Role: Co-PI (Ayala)
Aims: To determine if exercise training improves the cardioprotective functions of high-density lipoprotein (HDL) particles. Specifically, to determine the effects of aerobic exercise training on the ability of HDL to protect against LDL oxidation and inhibit VCAM-1 expression.
Methods: The anti-oxidative properties of HDL were assessed using a high throughput, cell-free, kinetic assay (Amplex Red) to measure lipid peroxidation within a sample. HDL anti-inflammatory functionality was measured using a cell-based assay in which RT-qPCR was used to determine the level of VCAM-1 expression in human umbilical vein endothelial cells stimulated with TNF-α.

Undergraduate Mentorship

Honors College, University of South Carolina
Katherine Kerwin (Honors College), January 2021-Present
Riley Reasons (Honors College), January 2021- Present

Professional Service

Ad hoc reviewer:
Journal of the American Heart Association

Skills and Certifications

SAS statistical analysis, Microsoft office (word, excel, powerpoint)
Laboratory skills: basic lab skills, Bradford assay, BCA protein quantification assay, isolation of lipoproteins (e.g., HDL and LDL) via FPLC
Bloodborne Pathogens, Hazardous Waste, Biosafety Level 2 for labs, and basic laboratory safety training