Andrew Ring, MA, PhD

Postdoctoral Research Associate

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Education

2024	Doctor of Philosophy in Biology, Conc. in Cell, Molecular, Health and Disease Baylor University, Waco TX
2024	Masters of Arts in Biology Baylor University, Waco TX
2020	Bachelor of Science in Microbiology University of the Sciences in Philadelphia, Philadelphia PA

Professional Experience

2025 -	Postdoctoral Research Associate, University of Georgia, Athens GA
2020 – 2024	Graduate Research Assistant, Baylor University, Waco TX
2017 – 2020	Undergraduate Research Assistant, University of the Sciences, Philadelphia PA

Peer-Reviewed Publications

Ring A, Ismaeel A, Wechsler M, Fletcher E, Papoutsi E, Miserlis D, Koutakis P. MicroRNAs in peripheral artery disease: potential biomarkers and pathophysiological mechanisms. Ther Adv Cardiovasc Dis. 2022 Jan-Dec;16:17539447221096940. doi: 10.1177/17539447221096940. PMID: 35583375

Fletcher E, Miserlis D, Sorokolet K, Wilburn D, Bradley C, Papoutsi E, Wilkinson T, **Ring A**, Ferrer L, Haynatzki G, Smith RS, Bohannon WT, Koutakis P. Diet-induced obesity augments ischemic myopathy and functional decline in a murine model of peripheral artery disease. Transl Res. 2023 Oct;260:17-31. doi: 10.1016/j.trsl.2023.05.002. Epub 2023 May 21. PMID: 37220835.

Bradley CE, Fletcher E, Wilkinson T, **Ring A**, Ferrer L, Miserlis D, Pacher P, Koutakis P. Mitochondrial fatty acid beta-oxidation: a possible therapeutic target for skeletal muscle lipotoxicity in peripheral artery disease myopathy. EXCLI J. 2024 Apr 23;23:523-533. doi: 10.17179/excli2024-7004. PMID: 38741727

Wilburn D, Miserlis D, Fletcher E, Papoutsi E, Ismaeel A, Bradley C, **Ring A**, Wilkinson T, Smith RS, Ferrer L, Haynatzki G, Monteleone P, Banerjee S, Brisbois E, Bohannon WT, Koutakis P. Skeletal muscle desmin alterations following revascularization in peripheral artery disease claudicants. Sci Rep. 2024 Jun 1;14(1):12609. doi: 10.1038/s41598-024-63626-3. PMID: 38824194

Research Experience

Koutakis Lab – Baylor University

- August 2020 – November 2024
- Led multiomics project to understand the pathophysiology of myopathy in peripheral artery disease patients and identify gene candidates for therapeutics.
- Incorporated advanced, multivariate statistical methods to extract evidence for novel gene targets.
- Provided NGS analysis consultation for collaborators.
- Developed wet lab skills including fluorescence respirometry, qPCR, Western Blotting, DNA/RNA/Protein extraction, and cell culture.

Janetopoulos Lab – University of the Sciences

- February 2017 – May 2020
- Worked on multiple small projects independently, the primary focus was understanding the role of phosphoinositide signaling in cell polarity and migration, using the amoeba *Dictyostelium discoideum*.
- Performed live cell imaging experiments.
- Maintained mammalian and non-mammalian cell cultures.
- Synthesized and presented data at lab meetings and conferences.

Teaching Experience

Graduate Laboratory Coordinator

Introduction to Microbiology – Baylor University

- August 2023 – December 2024
- Worked with faculty to assess the effectiveness of laboratory courses and adjust individual labs to support student learning objectives.
- Supervised 6 teaching assistants to promote consistency between lab sections.
- Provided training for new teaching assistants.
- Managed resources to ensure effective lab preparation.

Graduate Teaching Assistant

Introduction to Microbiology – Baylor University

- August 2020 – May 2024
- Independently instructed microbiology laboratory for over 400 total non-STEM students across 4 years.
- Implemented evidence-based teaching strategies, with a focus on developing students' core biology competencies and supporting core concepts learned in the lecture course.
- Guided students through a semi-independent unknown organism identification project.

Introduction to Biology – Baylor University

- January 2021 – May 2021
- Independently instructed biology laboratory for 12 biology major students in one semester.
- Utilized a hybrid, in-class/online structure, while implementing small-group discussion-based lectures paired with laboratory experiments.
- Mentored students to develop skills such as reading scientific literature and analyzing data during in-class projects.

Undergraduate Teaching Assistant

Trends in Applied Microbiology - University of the Sciences

- January 2018 – May 2018
- Worked with faculty to design an inquiry-based laboratory course based on isolating bacteriophages from students' mouths.
- Acted in a peer-mentor capacity for students while taking the course.
- Managed day-to-day preparation of lab materials.

Research Lab Mentorship

Koutakis Lab – Baylor University

- Provided 1-on-1 training to 3 undergraduate students on wet lab techniques.
- Guided undergraduate students through the design of independent lab projects.
- Delivered weekly support on experimental design and scientific literature search.

Janetopoulos Lab – University of the Sciences

- Provided 1-on-1 instruction to 5 fellow undergraduate students on wet lab techniques.
- Mentored 10 high school students during summer research experiences.
    - Provided daily instruction and walkthroughs of wet lab techniques.
    - Worked 1-on-1 with students to help them design a small independent project.
    - Mentored students on college and career choices.

Awards, and Fellowships

Awards

Norman F. Ramsey Commencement Research Award – May 2020

- Award given to one graduating student for outstanding research as an undergraduate.
- $500 cash prize

Outstanding Poster Presentation, Expert Category, Usciences Research Festival – March 2019

- Award given to the top 3 poster presentations in the undergraduate expert category.
- $50 cash prize

Fellowships

NIH F31 Predoctoral Fellowship – Not Funded

- "Determining skeletal muscle transcriptomic heterogeneity using spatial transcriptomics in peripheral artery disease patients"
- While the fellowship was not funded, the research plans were stfollowed,owed and the data is included in my upcoming publication “Multi-omic analysis of peripheral artery disease patient gastrocnemius describes interstage pathophysiology.”

Baylor Graduate School Fellowship – May 2020

- Fellowship given to exceptional incoming graduate students in addition to teaching assistantship.
- $5,000 scholarship per year for 5 years

Melvin Firman Summer Research Fellowship – May 2018, May 2019

- Competitive summer undergraduate research fellowship with a written and oral application process.
- $8,000 stipend, $1,000 research grant

Presentations

Invited Lectures

“Cell Signaling in Physiology” – February 2023

- Guest lectured in BIO 3322 Human Physiology
- Lectured on molecular mechanisms of cell signaling including receptors and signal transduction pathways.

“Conversations on Undergraduate Student Research” – July 2020

- Invited to speak to high school students in the Ed Snider Youth Hockey and Education Program.
- Led conversations on my research and research opportunities for students.

Poster Presentations

"Transcriptomic Analysis of Peripheral Artery Disease Patient-Derived Myotubes Reveals Broad Gene Expression Changes and Alternative Splicing" – April 2022

- Presented at Experimental Biology 2022

"The Contractile Vacuole Localizes to the Rear of Migrating Dictyostelium and is Critical for cAMP Signal Relay" – August 2019

- Presented at the International Dictyostelium Conference 2019

"The Contractile Vacuole is Critical for Cell to Cell Signaling in the Amoeba

Dictyostelium" – March 2019

- Presented at Usciences Undergraduate Research Festival 2019

"Retrograde Localization of the Contractile Vacuole During Chemotaxis and Cellular

Streaming in Dictyostelium Discoideum" – November 2018

- Presented at Pennsylvania Muscle Institute Symposium 2018

"Characterization and Identification of an Oral Bacteriophage and Host in a Classroom

Laboratory Setting" – March 2018

- Presented at Usciences Undergraduate Research Festival 2018

Volunteer Experience

Fight Colorectal Cancer

- March 2017 - Present
- Attended Annual Meeting "Call on Congress" in Washington DC pre-pandemic.
- Met with Congress members/staffers to discuss colorectal cancer policy issues and R&D funding.
- Advocacy resulted in the passage of the "Removing Barriers to Colorectal Screening Act" in 12/2020.
- Mentored 3 new advocates to share their personal stories and advocate for Fight CRC's policy goals.