KIANI J.C. JACOBS

Columbia, SC • kianij@email.sc.edu • (857) 318-1588 • LinkedIn URL

EDUCATION

University of South Carolina, Columbia, SC — Expected May 2028
Doctor of Philosophy: Exercise Science
Advisor: Dr. Mark Sarzynski

Simmons University, Boston, MA — May 2023
Bachelor of Science *(summa cum laude):* Major in Exercise Science, Minor in Healthcare Management
Thesis: Influence of Neuromuscular Electrical Stimulation during Physical Therapy Rehabilitation on Recovery after Medial Patellofemoral Ligament Reconstruction
Advisor: Dr. Michael Welch

Bunker Hill Community College, Boston, MA — May 2021
Associate in Science (high honors): Major in Biological Sciences: Medical Professions Option
Honors Project: Review Paper on Breast Cancer and the BRCA Gene
Advisor: Professor Jennifer O'Donnell

RESEARCH EXPERIENCES

University of South Carolina, Columbia, SC — August 2024 – Current
Graduate Research Assistant
PI & Mentor: Dr. Mark Sarzynski

- Investigate the influence of exercise training on the glycomes and GlycanAge and their associations with cardiometabolic health
- Examine the effects of exercise interventions on attenuating or reversing age-related increases in short- and long-term cardiovascular disease risk across the cardiometabolic health spectrum
- Identify molecular signatures of cardiometabolic risk profiles of healthy adults using plasma proteomics and metabolomics

Lawrence Berkeley National Laboratory, Berkeley, CA — August 2023 – June 2024
Research Scholar, University of California Berkeley Research and Mentoring for Post-Baccalaureates (RaMP) Program
PI: Dr. Adam Deutschbauer
Advisor: Dr. Valentine Trotter

- Investigated the fitness of radioresistant and antibiotic-resistant human skin microbes (*Acinetobacter radioresistens* and *Deinococcus grandis*) by sequencing bar-coded transposons
- Executed fitness assays on microbes to determine optimal growth conditions (salinity, temperature, humidity, etc.)
- Performed gDNA extractions and PCR on microbes and analyzed sequences using ApE, BLAST, and KBase software
- Generated a library of mutant microbes via bacterial conjugation using transposon vectors

Harvard Medical School, Boston, MA — October 2021 – June 2023
Undergraduate Research Assistant
PI: Dr. David Ginty
Advisor: Dr. Charalampia Koutsioumpa

- Investigated the morphological and molecular changes of mechanosensory neurons during murine skin maturation in glabrous and hairy skin under the direction of a PhD candidate
- Visualized neurons using ZEN software, cryosectioning, immunolabeling, microscopy, and histology techniques
- Managed genetically diverse mouse colonies and genotyped them using PCR

techniques
• Analyzed and quantified the morphological features of sensory neurons using Fiji software
• Co-authored a peer-reviewed article presenting our findings

Harvard Institutes of Medicine, Boston, MA June 2021 – August 2021
Student Intern, Dana Farber/Harvard Cancer Center Summer Program to Advance Research Careers (SPARC)
PI: Dr. Sandra McAllister
Advisor: Dr. Milos Spasic
• Investigated the immunological response and structural development of aged and young murine triple-negative breast cancer tumors before and after chemotherapy treatment
• Analyzed cell-specific (CD8+ T-cells and αSMA) characteristics using microscopy and Fiji software under the supervision of a postdoctoral researcher
• Attended biomedical seminars and workshops about health concerns and ongoing cancer research
• Read and presented published cancer research papers and review articles at journal clubs

University of Massachusetts Boston, Boston, MA March 2021 – May 2021
Student Intern, Bridges to Baccalaureate Research Training Program
PI & Advisor: Dr. Alexia Pollack
• Designed and executed an independent reaction time experiment and presented experimental findings to peers
• Interpreted scientific literature on biological topics and demonstrated an understanding of scientific topics
• Attended scientific workshops, debates, and webinars virtually

OTHER EXPERIENCES

Bay State Physical Therapy, Cambridge, MA September 2022 – June 2023
Rehabilitation Aide
• Assisted Physical Therapists by designing and implementing rehabilitation training interventions for patients
• Maintained a high level of customer service while helping patients follow therapeutic exercise sequencing and providing exercise cues for form when needed
• Helped patients with healthcare logistics for prescribed plan of care through patient account management

PEER-REVIEWED PUBLICATIONS

1. Koutsioumpa C, Santiago C, **Jacobs K**, Lehnert BP, Barrera V, Hutchinson JN, Schmelyun D, Lehoczky JA, Paul DL, & Ginty DD. (2023). Skin-type-dependent development of murine mechanosensory neurons. *Developmental cell*, 58(20):2032-2047.e6. PMID: 37607547. https://doi.org/10.1016/j.devcel.2023.07.020

PRESENTATIONS

Abstracts / Scientific Conferences

3. **Jacobs KJC**, Trotter VV, & Deutschbauer AMD. Genetic Characterization of *Acinetobacter radioresistens* and *Deinococcus sp. - SK125* in the Context of the Skin Microbiome. Poster Presentation at American Society for Microbiology Microbe, June 2024, Atlanta, GA.

2. Koutsioumpa C, Santiago C, **Jacobs K**, & Ginty D. BMP Signaling Differentially Influences Glabrous Ending Morphogenesis. Poster Presentation at American Academy of Neurology Annual Meeting, April 2024, Denver, CO. https://doi.org/10.1212/WNL.0000000000205522

1. Koutsioumpa C, Santiago C, **Jacobs K**, Lehnert B, & Ginty D. Skin-dependent morphological and molecular maturation of specialized mechanosensory neurons. Poster

Presentation at American Academy of Neurology Annual Meeting, April 2023, Boston, MA. https://doi.org/10.1212/WNL.0000000000203780

Other Presentations

6. **Jacobs KJC**, Trotter VV, & Deutschbauer AMD. Genetic Characterization of *Acinetobacter radioresistens* and *Deinococcus sp. - SK125* in the Context of the Skin Microbiome. Oral Presentation at RaMP Symposium, June 2024, Berkeley, CA.
5. **Jacobs K**. Influence of Neuromuscular Electrical Stimulation during Physical Therapy Rehabilitation on Recovery after Medial Patellofemoral Ligament Reconstruction. Poster Presentation at Simmons University STEM Symposium, April 2023, Boston, MA.
4. **Jacobs K**, Koutsioumpa C, & Ginty D. Development of Glabrous and Hairy Skin Neurons. Oral Presentation at Simmons University Senior Scholar Award Showcase, April 2023, Boston, MA.
3. **Jacobs K**, Koutsioumpa C, & Ginty D. Development of Glabrous and Hairy Skin Neurons. Oral Presentation at Ginty Lab Research Assistant Symposium, August 2022, Boston, MA.
2. **Jacobs K**. Invited Panelist for SPARC Virtual Alumni Panel, June 2022, Virtual.
1. **Jacobs K,** Spasic M, & McAllister S. Age as a Factor in the Development and Progression of Breast Cancer in Women. Oral Presentation for SPARC and U54 REC Virtual Scientific Presentations, August 2021, Virtual.

Under Review

7. **Jacobs KJC**, Leszczynski EC, Barber JL, Rao P, Mi M, Dev PK, Ghosh S, Clish CB, Bouchard C, Robbins JM, Gerszten RE, Sarzynski MA. Plasma proteomic signature of BMI reveals heterogeneous cardiometabolic risk profiles within and across standard BMI classifications. Presentation at AHA Epi/Lifestyle Scientific Sessions, March 2025, New Orleans, LA.
6. Herzig M, Dev PK, **Jacobs KJC**, Leszczynski EC, Barber JL, Rao P, Mi M, Ghosh S, Clish CB, Bouchard C, Gerszten RE, Robbins JM, Sarzynski MA. Plasma proteomic signatures of organ aging are not responsive to exercise training: HERITAGE Family Study. Presentation at AHA Epi/Lifestyle Scientific Sessions, March 2025, New Orleans, LA.
5. Leszczynski EC, Barber JL, Rao P, **Jacobs KJC**, Mi M, Dev PK, Schwartz CS, Ghosh S, Bouchard C, Clish CB, Robbins JM, Gerszten RE, Sarzynski MA. Sex Differences in the Plasma Metabolome Before and After Exercise Training. Presentation at AHA Epi/Lifestyle Scientific Sessions, March 2025, New Orleans, LA.
4. Dev PK, Leszczynski EC, **Jacobs KJC**, Barber JL, Schwartz CS, Mi M, Rao P, Spinale FG, Ross LM, Robbins JM, Gerszten RE, Kraus WE, Sarzynski MA. Proteomic signature of high and low VO2peak response to exercise training in chronic heart failure. Presentation at Southeast ACSM Conference, February 2025, Greenville, SC.
3. **Jacobs KJC**, Leszczynski EC, Pitre MJ, Schwartz CS, Dev PK, Valakos MG, Rao P, Mi M, Ghosh S, Robbins JM, Gerszten RE, Bouchard C, Sarzynski MA. Exercise training attenuates age-related increases in 10- and 30-year CVD risk: HERITAGE Family Study. Presentation at 2025 Southeast ACSM Conference, February 2025, Greenville, SC.
2. Pitre MJ, Leszczynski EC, **Jacobs KJC**, Dev PK, Schwartz CS, Ross LM, Kraus WE, Sarzynski MA. The effects of exercise training on 10-year ASCVD predicted risk across the STRRIDE exercise interventions. Presentation at Southeast ACSM Conference, February 2025, Greenville, SC.
1. Valakos MG, Leszczynski EC, **Jacobs KJC**, Barber JL, Rao P, Mi M, Dev PK, Ghosh S, Clish CB, Bouchard C, Robbins JM, Gerszten RE, Sarzynski MA. Metabolomic signature of

Lp(a) is related to cardiometabolic profile and exercise responsiveness in healthy adults. Presentation at Southeast ACSM Conference, February 2025, Greenville, SC.

GRANTS & SCHOLARSHIPS

University of South Carolina Presidential Fellowship

- The most prestigious doctoral award at the University of South Carolina.
- Nominated by the Exercise Science graduate director based on significant accomplishments, leadership capabilities, special interests, exceptional creativity, and commitment to improving the lives of others.
- $10,000 per year over 4 years covering tuition and fees (2024 – 2028)

National Institutes of Health (NIH) T32 Pre-doctoral Training Fellowship, Behavioral-Biomedical Interface Program (5T32GM081740)

- Research training grant from the National Institute of General Medical Sciences to enhance graduate training in biomedical sciences.
- An interdisciplinary research training program geared towards incorporating biomedical and translation sciences into behavioral science research.
- $40,000+ per year over 2 years covering a 12-month stipend, tuition, fees, health insurance, and travel (2024-2026); summer stipend for 2 additional years

National Science Foundation (NSF) RaMP Scholar Award, Bay Area RaMP Program (2216550)

- A training grant aiming to provide full-time research experience and mentorship for postbaccalaureates in biological sciences.
- A research program in microbiome sciences with a mission to diversify the workforce in the field through training.
- $58,000 for 10 months covering research expenses, stipends, training fees, health insurance, and travel (2023 - 2024)

Oscar A. Wells Scholarship

- A scholarship from the The Most Worshipful Prince Hall Grand Lodge of Massachusetts for advanced undergraduate students who exhibit great character and scholarship.
- $1,000 for 1 year covering tuition, fees, and other educational costs (2022 - 2023)

Simmons University Community College Excellence Scholarship (SUCCESS)

- A scholarship for community college transfer students who have completed an associate's degree.
- $20,000 per year over 2 years covering tuition and fees (2021 - 2023)

Phi Theta Kappa International Honor Society Scholarship

- A scholarship for transfer students who are members of the Phi Theta Kappa Honor Society.
- $2,000 per year over 2 years covering tuition and fees (2021 - 2023)

Sheila Gamble Cook Scholarship

- A scholarship from the MassEdCO Education and Career Planning Center for students who are committed to serving others and have leadership qualities, aspirations for higher learning, and a strong work ethic.
- $1,000 for 1 year covering tuition and fees (2021 - 2022)

ACHIEVEMENTS AND RECOGNITIONS

U.S. Fulbright Program Open Study/Research Award Semi-Finalist (2023)
Simmons University Senior Scholar Award Nominee & Recipient (2023)
Simmons University Alumnae Award for Academic Achievement Nominee (2022)
Simmons University Leadership in Community-Based Learning Award (2022)

Simmons University Dean's List (2022-2023)
Simmons University Award for Excellence: Exercise Physiology Journal Article (2022)
Caribbean Secondary Education Certificate Gold Awardee (2020)
Level 1 Scholar of NSF Louis Stokes Alliances for Minority Participation Program (2020)
Bunker Hill Community College Merit & Dean's List (2019 – 2021)
Rotary Club of Antigua Sundown Interactor of the Year Award (2019)

PROFESSIONAL AFFILIATIONS

American Physiology Society Member (since 2024)
National Society of Leadership and Success Nominee & Member (since 2022)
Phi Theta Kappa Honors Society Member (since 2020)
Bunker Hill Community College Commonwealth Honors Program Member (2020 - 2021)

MEDIA COVERAGE

3. Libby, A. (2024, May 9). Finding Community at Simmons as a Transfer Commuter Student | Simmons University. https://www.simmons.edu/news/finding-community-simmons-transfer-commuter-student
2. Brownlee, C. (2023, August 23). How Neurons Grow Comfortable in Their Own Skin | Harvard Medical School. https://hms.harvard.edu/news/how-neurons-grow-comfortable-their-own-skin
1. (2023, April 14). Undergraduate Recipients of 2023 Senior Scholar Award | Simmons University. https://www.simmons.edu/news/undergraduate-recipients-2023-senior-scholar-award

VOLUNTEER WORK

Fenway High School, Boston, MA (2023), Undergraduate Mentor
Rogerson House, Boston, MA (2022), Communications Manager & Engagement Team Member
Five Fifths, Boston, MA (2020-2021), Social Media Manager
Mount St John Medical Center, Antigua (2018), Physiotherapy Assistant
St John Hospice, Antigua (2018), Hospice Support

EXTRACURRICULAR ACTIVITIES

Panache Steel Orchestra Steel Pan Player (2023-2024)
Simmons University African Caribbean Student Union SGA Representative (2022-2023)
Simmons University Exercise Science Liaison Co-Secretary (2022-2023)
Branches Steel Orchestra Steel Pan Player (2021-2023)
Bunker Hill Community College Volleyball Team Member (2020-2021)
Antigua Girls' High School Interact Club Member & President (2016-2019)

OTHER SKILLS and TRAINING

Basic Life Support & First Aid
Carl ZIESS Microscopy
Flow Cytometry
R & SAS Programming Languages (basic proficiency)