

Kevin Sanchez, Ph.D.

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MULTI-OMIC EPIDEMIOLOGY, ENVIRONMENTAL HEALTH

Researcher with over seven years of experience using environmental microbes, pollutants, and compounds to modulate inflammation. I intend to utilize the expertise I have gained to pursue a career focused on evaluating the impacts of environmental exposures on human health.

SELECTED SKILLS & TECHNIQUES

- Parametric and non-parametric statistical analysis (e.g., ANOVAs; survival analysis; linear, logistic, and multivariate regression)
- Data analysis and visualization
- High performance computing
- Multi-omics data integration
- Graphic design for publications
- Data presentation via slide decks
- Project management (e.g., experimental design, budgets, prioritization)

Software: R, SAS, SQL, Adobe Illustrator, GraphPad Prism, LaTeX, Microsoft Office

SELECTED EXPERIENCE

Postdoctoral Research Fellow Jan 2024 – Present
Brigham and Women's Hospital — Boston, MA

- Leveraged data from various study cohorts, such as the Nurses' Health Study, to address the gap in understanding of the biological processes mediating the increased risk of cardiovascular diseases (e.g., stroke) in women
- Analyzed metabolomic and proteomic data from study cohort participants' bloods in SAS, SQL, and R to identify novel biomarkers and pathways promoting cardiovascular disease development

Graduate Research Assistant Aug 2018 – May 2023
The University of Texas at Austin — Austin, TX

- Developed, planned, and executed experiments assessing the impacts of environmental microbes and polychlorinated biphenyls (PCBs) on neuroimmune function and behavior
- Analyzed single nucleus RNA sequencing data in R to identify sex differences in brain aging by determining differentially expressed genes and enriched pathways
- Investigated the neuroprotective role of estrogens in regulating neuroinflammation and behavior in rodent models of surgical menopause
- Assessed toxicological parameters in rodents following drug administration, in tissues during necropsy, and via *ex vivo* immune stimulation of neuroimmune cells

Undergraduate Research Assistant May 2016 – May 2018
Florida State University — Tallahassee, FL

- Extracted brain tumor data from databases like the Catalog of Somatic Mutations in Cancer (COSMIC) and the Pediatric Cancer Genome Project (PCGP)
- Analyzed extracted data in R to identify driver genes and aberrant signaling pathways in prevalent pediatric cancers like medulloblastoma and atypical teratoid/rhabdoid tumors

EDUCATION

Ph.D. in Pharmacology and Toxicology Aug 2018 – May 2023
The University of Texas at Austin — Austin, TX

B.S. in Chemistry and B.S. in Exercise Physiology Aug 2014 – May 2018
Florida State University — Tallahassee, FL

SUPPLEMENTARY COURSEWORK

Environmental Health Risk: Analysis and Applications Harvard T.H. Chan School of Public Health	Feb 2023
Measuring Disease in Epidemiology Imperial College London	Jul 2022
Advanced Comprehensive Toxicology American College of Toxicology	Aug 2020

SELECTED PEER-REVIEWED PUBLICATIONS (4 OF 7)

1. **K Sanchez**, S Wu, R Kakkar, JS Darling, CS Harper, LK Fonken. (2023). Ovariectomy in adult mice primes hippocampal microglia to exacerbate behavioral sickness responses. *Brain, Behavior, and Immunity — Health*, 30, 100638.
2. LM Ince, JS Darling, **K Sanchez**, KS Bell, JK Melbourne, LK Davis, K Nixon, AD Gaudet, LK Fonken. (2023). Sex differences in microglia function in aged rats underlie vulnerability to cognitive decline. *Brain, Behavior, and Immunity*, 114, 438-452.
3. **K Sanchez**, JS Darling, R Kakkar, S Wu, A Zentay, CA Lowry, LK Fonken. (2022). *Mycobacterium vaccae* immunization in rats ameliorates age-associated microglial activation in the hippocampus. *Scientific Reports*, 12, 2165.
4. CJ Robbins, MJ Bou-Dargham, **K Sanchez**, MC Rosen, QX Sang. (2018). Decoding somatic driver gene mutations and affected signaling pathways in human medulloblastoma subgroups. *Journal of Cancer*, 9, 4596-4610.

SELECTED AWARDS, HONORS, & GRANTS (8 OF 17)

- Scientist Mentoring and Diversity Program for Biotechnology (SMDP) Scholar 2023
- Johnson & Johnson Endowed Graduate Fellowship in Pharmacy 2022
- Poster Presentation Winner, 4th Annual Center for Molecular Carcinogenesis and Toxicology Symposium 2022
- F31 NRSA Fellowship (F31AG072867) 2022
- Society for Neuroscience Trainee Professional Development Award 2021
- Three Minute Poster Presentation Winner, 17th Annual Louis C. Littlefield Celebrating Pharmacy Research Excellence Day 2021
- Undergraduate Research Award, Florida State University 2018
- Outstanding Chemistry Teaching Assistant Award, Florida State University 2016

SELECTED PROFESSIONAL PRESENTATIONS (3 OF 11)

Invited Oral Presentations

K Sanchez. Impact of estrogen loss on neuroimmune function and behavior. *4th Annual Center for Molecular Carcinogenesis and Toxicology Symposium, Austin, TX, 2022.*

Published Abstracts and Poster Presentations (Undergraduate Student Mentees Underlined)

K Sanchez, LM Ince, R Kakkar, LK Davis, JS Darling, SL Wu, A Zentay, CA Lowry, LK Fonken. *Mycobacterium vaccae* immunization in aged rats promotes a homeostatic microglial phenotype. *Society for Neuroscience, San Diego, CA, 2022.*

K Sanchez, JS Darling, R Kakkar, SL Wu, CS Harper, LK Fonken. Ovariectomy in mice primes microglia to exacerbate neuroinflammation and subsequent behavioral deficits. *4th Annual Center for Molecular Carcinogenesis and Toxicology Symposium, Austin, TX, 2022.* ***Poster award winner**