

Charlie Walters
charliekwalters@gmail.com

Education

The Johns Hopkins University School of Medicine – Baltimore, MD Expected 2026
PhD, Neuroscience

University of California, Berkeley – Berkeley, CA 2017
BA, Molecular and Cell Biology

Experience

Hussain Shuler Lab, Johns Hopkins University – Baltimore, MD 2019–present
Graduate Researcher

- Develop and implement a multi-year research project investigating the brain's representation of time during decision-making. Develop hypotheses based on review of the scientific literature and theoretical modeling. Design and implement novel behavioral and neural experiments.
- Create technology for neuroscience experiments, ranging from automated behavioral apparatuses running custom software to 3D-printed electrode implants for neural recording.
- Develop a data pipeline in Python to organize, preprocess, and analyze thousands of collected neural, behavioral, and video data records. Analyze high-dimensional neural and behavioral data using statistical modeling and reinforcement learning frameworks.
- Mentor and train junior PhD students in conceptual, technical, and presentation skills.

Foster Lab, University of California, Berkeley – Berkeley, CA 2017–2019
Lab Manager and Technician

- Designed and constructed novel 3D-printed 256-channel microelectrode arrays for neural data acquisition, increasing prior channel count by 33%, improving neural data yield, and allowing for wireless recording. Customized array designs according to the needs of diverse research projects across the lab, contributing to three published research articles to date.
- Managed chemical & biosafety, compliance, and purchasing for the lab.

Kaufer Lab, University of California, Berkeley – Berkeley, CA 2016–2017
Undergraduate Researcher

- Collected quantitative histological data and designed a data quality assurance process.

Awards

Distinguished Graduate Student Fellow (\$80,000 award supporting thesis research) 2022
Kavli Neuroscience Discovery Institute

Skills

Experimental Design, Data Analysis, Statistics, Data Visualization, Python
Solidworks (CAD), Raspberry Pi and Arduino Development, Scientific Writing and Editing