Carly Rodriguez, B.S.
Predoctoral Associate

Tufts University & The Jackson Laboratory
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EDUCATION:

Ph.D. Tufts Graduate School of Biomedical Sciences — August 2023 - Present
Department of Neuroscience
PhD training program in Neurogenetics at JAX

B.S. Ursinus College — August 2019 – May 2023
Neuroscience
Minor in Spanish
Honors: Summa Cum Laude

RESEARCH EXPERIENCE:

Predoctoral Associate — May 2024 – Present
The Jackson Laboratory, Bar Harbor, ME
Advisor: Dr. Martin F. Pera

- Researching aging and stress response in pluripotent stem cell-derived neurons across genetic backgrounds
- Developing and conducting original thesis work novel to lab
- Techniques include high-content confocal microscopy on the Opera Phenix, immunocytochemistry, cortical neuron differentiation, data analysis in R studio, flow cytometry, digital PCR, and quantitative PCR
- Trained other trainees and employees at institution in cell culture basics and pluripotent stem cell maintenance and differentiation
- Mentored an undergraduate student through a 12-week summer program and academic year fellowship and am continuing to serve as a mentor for senior honors project

Undergraduate Researcher — January 2020 – May 2023
Ursinus College, Collegeville, PA
Advisor: Dr. Jennifer King

- Investigated inflammatory response of microglia to HIV Tat protein *in vitro*
- Spearheaded new project within the institution to isolate primary microglia from aged mice through independent honors research project
- Techniques include western blot, immunocytochemistry, cell culture maintenance, wide-field fluorescent imaging

- Trained new undergraduate students in the lab

Summer Research Intern June 2022 – August 2022
University of California Irvine, Irvine, CA
Advisor: Dr. Lisa Flanagan

- Examined the impact of endothelial cell contact in mediating neural stem cell types
- Techniques include immunocytochemistry, cell culture maintenance, confocal fluorescent imaging, and FIJI Image Analysis

PUBLICATIONS

- Gutierrez B, Liu TC, **Rodriguez C**, et al. *Human endothelial cells promote a human neural stem cell type B phenotype via Notch signaling. Nat Commun.* 2025 May 30;16(1):5031. doi: 10.1038/s41467-025-60194-6.

PRESENTATIONS

- *Talk:* "Isolation of primary microglia from adult mice to examine neuroinflammatory response in neurodegenerative disease modeling". Ursinus Celebration of Student Achievement, [2023]
- *Poster:* "Contact with human endothelial progenitor cells mediate a decrease in the proliferation of human neural stem and progenitor cells". UCI Summer Institute in Neuroscience Symposium, [2022]
- *Poster:* "Time-course analysis of HIV-1 Tat protein exposure on microglial phagocytic activity". Ursinus Celebration of Student Achievement, [2022]