

Eli Kritzer

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EDUCATION

Icahn School of Medicine at Mount Sinai
Ph.D. Candidate in Computational Neuroscience

New York, NY
2023 – Present

Tufts University
B.S. in Biology, *Thesis High Honors, magna cum laude*

Medford, MA
May 2023

RESEARCH EXPERIENCE

Mount Sinai, Department of Artificial Intelligence and Human Health

Ph.D. Candidate – Beckmann Laboratory Mar 2024 – Present

- Developed a fully automated, end-to-end pipeline integrating longitudinal modeling of disease progression with genome-wide association analysis of disease progression rates across multiple cohorts.
- Implemented and evaluated models of Alzheimer's disease progression, inferring disease timelines from longitudinal metabolomics and lipidomics data, validating against established biomarkers, and replicating results across independent cohorts.
- Conducted case-control transcriptomic analyses of human brain RNA-seq data in Alzheimer's disease.

Mount Sinai, Department of Neuroscience

Ph.D. Rotation Student – Yang & Tsankova Laboratories Sep 2023 – Mar 2024

- Optimized magnetic-activated cell sorting protocols to improve neural progenitor cell enrichment.
- Quantified therapeutic effects of candidate drugs on glioma growth in patient-derived brain tumor tissue.

Boston Children's Hospital, Harvard Medical School

Undergraduate Researcher – Umemori Laboratory Mar 2021 – May 2023

- Developed image-analysis workflows for unbiased synapse quantification by controlling for axon density.
- Designed, implemented, and optimized experimental pipelines for immunostaining and microscopy of brain tissue.
- Presented findings to interdisciplinary audiences and trained junior researchers in experimental protocols.

PUBLICATIONS

Akiko Terauchi, Patricia Yee, Erin M Johnson-Venkatesh, Mariel P Seiglie, Lisa Kim, Julia C Pitino, **Eli Kritzer**, Qiyu Zhang, Jie Zhou, Yulong Li, David D Ginty, Wei-Chung A Lee, Hisashi Umemori. The projection-specific signals that establish functionally segregated dopaminergic synapses. *Cell* (2023).

POSTERS & PRESENTATIONS

- Inferring a Timeline of Alzheimer's Disease, Mount Sinai AI Retreat (2025).
- Identifying the Genetics of Alzheimer's Disease Progression Rate, Society of Biological Psychiatry (SOBP) Annual Meeting (2026).

SKILLS

Programming: Python, R, Snakemake, Bash, Git, pandas, tidyverse, HPC (LSF), MATLAB

Bioinformatics: GWAS, longitudinal regression modeling, data wrangling, RNA-seq differential expression analysis, pathway enrichment, data preprocessing & quality control

Wet Lab: Prior experience in immunostaining, microscopy, and cell culture