

EDUCATION**University of Pittsburgh and Carnegie Mellon University**

Doctor of Philosophy (Ph.D.) in Molecular Biophysics and Structural Biology
Enrolled in joint program with permission to rotate in both institutions named.

Pittsburgh, PA
Aug 2024 – present

University of Michigan

Master of Science (M.S.) in Molecular, Cellular and Developmental Biology

Ann Arbor, MI
Aug 2021 – Apr 2023

Thesis: “Toward accessible bioinformatic tools for analyzing residue coevolution and sequence-fitness relationships in Fluc family proteins”

Honors: Rackham Merit Fellowship, full funding for two-year program (stipend: \$33,720 annually)

Brandeis University

Bachelor of Science (B.S.) in Biological Physics and Chemistry
Minor in Philosophy

Waltham, MA
Aug 2017 – May 2020

Honors: Ting Tsung and Wei-Fong Chao Endowed Scholarship, Undergraduate Departmental Representative Prize, Dean’s List

Bunker Hill Community College

Associate of Science (A.S.) in Biology

Boston, MA
Aug 2015 – May 2017

Honors: Pearl Anniversary Scholarship, Phi Theta Kappa (Alpha Kappa Mu chapter), Dean’s List

RESEARCH AND LABORATORY EXPERIENCE**Toronto Metropolitan University**

Visiting Research Scholar, Lab of Dr. Aidan Brown

Toronto, ON, Canada
Sep 2023 – Jul 2024

- Funded by a Fulbright U.S. Student Award, issued by the flagship educational exchange program of the U.S. government.
- Project: “Quantitative modeling of the performance and kinetics of chaperone-mediated glycoprotein folding”
- Conducted an independent research project in the Department of Physics to apply mathematical modeling, analytical theory, and Python to describe the kinetics of glycoprotein folding assisted by calnexin and calreticulin. Demonstrated using deterministic numerical integration of rate equations that this folding is a distinctive, Poisson-like process.

University of Michigan

Graduate Research Assistant, Lab of Dr. Randy Stockbridge

Ann Arbor, MI
Jul 2021 – Apr 2023

- Engineered novel computational tools in response to observed needs of wet-lab biochemists to evaluate mutational tolerance and membrane orientation bias in mutated variants of Fluc channel proteins, which are responsible for exporting excess fluoride ions from cells. Discussed in thesis the implications of this work in the context of Fluc evolutionary theory.
- Performed experimental tests of Fluc variant fitness (in *E. coli*) under fluoridated and non-fluoridated conditions.
- Key methods: Python and R (documented in thesis); PCR; Golden Gate cloning; cell culture; gel electrophoresis

Albany Molecular Research, Inc. (now Curia, Inc.)

Research Scientist I, Protein Expression and Purification

Buffalo, NY
Dec 2020 – Jul 2021

- Facilitated the development, production, and characterization of recombinant proteins and protein conjugates from bacterial, insect, and mammalian expression systems and through large-scale expression platforms.
- Key Methods: Column chromatography (ion exchange, size exclusion, affinity); FPLC; SDS-PAGE; bacterial transformation.
- Regularly presented data to team members, senior scientists, and company clients working in drug development.

Broad Institute of MIT and Harvard

Process Technician, Genomics Platform

Cambridge, MA
Aug 2020 – Dec 2020

- Optimized automated RNA extraction and RT-PCR workflows; performed human specimen handling, data classification and management according to standard operating procedures and Biosafety Level 2 (BSL-2) precautions for the institute’s nationally recognized COVID-19 testing laboratory. Commended for this effort with a special recognition award.

Brandeis Materials Research Science and Engineering Center

Research Assistant, Department of Physics at Brandeis University

Waltham, MA
Nov 2018 – Dec 2019

- Contributed to the design, fabrication, and optimization of a microfluidic device to meet challenging hardware specifications: screening from multiple user-defined chemical mixtures what conditions benefit protein crystallization.
- Key Methods: Photolithography and PDMS (polydimethylsiloxane) soft lithography, AutoCAD, optical profilometry.
- Funded in part by a competitive fellowship (National Science Foundation - Research Experience for Undergraduates) to continue work through the summer of 2019 and present in an institution-wide poster session and conference.

RESEARCH AND LABORATORY EXPERIENCE (cont.)

University of Massachusetts – Boston

Boston, MA

Research Assistant, Department of Biology

Jun 2017 – Aug 2017

- Optimized purification and characterization procedures for polyphenol oxidase isozymes from barley and Asiatic pennywort.
- **Key Methods:** Buffer preparation; centrifugation; native PAGE; activity staining; ion exchange chromatography; UV spec.
- Funded through a competitive fellowship (National Institutes of Health - Bridges to the Baccalaureate Program). Presented work in a showcase at the end of the program.

TEACHING, SERVICE, AND LEADERSHIP

University of Michigan

Ann Arbor, MI

Graduate Student Instructor

Jan 2022 – Apr 2022, Aug 2022 – Dec 2022

- Responsible for the programming of three discussion/recitation sections for a large-lecture course in biochemistry (MCDB 310 – Introductory Biochemistry) during the Winter 2022 and Fall 2022 terms.
- Graded and provided detailed feedback to a range of assignments and assessments including quizzes and short answer tasks; promoted positive student outcomes through the establishment of a supportive learning environment and culture receptive to student needs. Provided one-on-one support and counsel to students through regularly held office hours.

SACNAS (Brandeis University Chapter)

Waltham, MA

Alumni Representative

May 2020 – Apr 2021

- Served to connect students with SACNAS (Society for the Advancement of Chicanos/Hispanics and Native Americans in Science) following a period of continued involvement with the organization as an undergraduate student.

Brandeis University

Waltham, MA

Conference Organizer and Technical Assistant

Jan 2020 – May 2020

- Served on the organizing committee for WeSSLLI 2020 (Web Summer School for Logic, Language, and Information), a linguistics conference emergent from two previously separate events in response to the COVID-19 pandemic and made possible through the collaboration of organizers from North America and Europe. Mentioned in program documentation.

Brandeis University

Waltham, MA

Lead Undergraduate Departmental Representative

Aug 2019 – May 2020

- Selected to represent the interests of students in the university's Division of Science through a leadership position to act as a liaison between faculty, staff, and undergraduates. Exchanged forward-thinking ideas with academic administration.

RECENT PROFESSIONAL DEVELOPMENT

Selected Participant – Graduate Student Mentorship Initiative, Cientifico Latino

Aug 2023 – Jan 2024

- Selected by competitive application to benefit from mentorship, advising, and other resources for applying to Ph.D. programs in STEM disciplines. Program sponsored in part by the Simons Foundation.

U-M Graduate Teacher Certificate – University of Michigan

May 2023

- Achieved a greater understanding and skillset for better teaching at the college level; participated in workshops and sessions on topics pertinent to classroom climate, student engagement, and instructional strategies. Composed a teaching statement and a mock syllabus for a course in undergraduate biochemistry.

Professional Development Certificate in Diversity, Equity, and Inclusion – University of Michigan

May 2023

- Completed basic training workshops in DEI (diversity, equity, inclusion) and an individualized assessment of cultural competency, administered by Rackham Graduate School; gained knowledge of DEI-related concepts and definitions.

OTHER EMPLOYMENT

Partners In Health

Boston, MA

Contact Tracer and Case Investigator

Apr 2020 – Jul 2020

BookLink (NewsLink of Boston, LLC.)

Boston, MA

Bookseller

Sep 2015 – Sep 2019

Citizens Bank

Boston, MA

Teller

May 2014 – Aug 2014

ADDITIONAL HONORS AND AWARDS

- Selected Participant – Global Community Bio Summit 2.0, MIT Media Lab *Oct 2018*
- Citation, Massachusetts House of Representatives *Sep 2018*
- First Place – 2014 Brain Bee Challenge, Max Planck Florida Institute for Neuroscience *Mar 2014*