Alexia Telios
126 Charles St Apt 3, Cambridge, MA 02141
Email: atelios@brandeis.edu
Phone: 832.755.0013

EDUCATION

Brandeis University — **Waltham, MA**
Doctor of Philosophy, Chemistry — *Aug 2025- Present*
The University of Texas at Austin — **Austin, TX**
Bachelors of Sciences & Arts, Biochemistry, French minor — *Aug 2019- May 2022*

RESEARCH EXPERIENCE

Brandeis University — **Waltham, MA**
Biochemistry Department with Dr. Hyunjun Yang — *January 2026- Present*
Graduate Student

- Working on protein design relevant to neurodegenerative diseases

Massachusetts Institute of Technology — **Cambridge, MA**
Chemistry Department with Dr. Bradley Pentelute — *May 2024- July 2025*
Research Specialist

- Working with an industry collaborator on rational design of a natural based peptide binder to a metalloprotease target. Synthesizing peptides with manual flow peptide synthesis and automated flow peptide synthesis. Working on peptide modifications including zinc-binding warheads, peptide stapling using ring closing metathesis, and lipidation.
- Collaborating with the Wittrup lab at MIT in investigating the structure-function relationship of a knottin peptide, specifically on the conformational states of a critical proline residue. Synthesized and folded knottin constructs with substituted non-canonical proline analogs using automated flow peptide synthesis for future NMR studies.

Broad Institute of MIT and Harvard — **Cambridge, MA**
Infectious Diseases & Microbiology Program with Dr. Ramnik Xavier — *July 2022- May 2024*
Research Associate I: Gut Microbiome Group
Research Associate I: Human Genetics and Microbiome Core, MGH

- Developed peptide-MHC-II multimers to study the effect of self-binding T cells in autoimmunity.
- Used mass spectrometry to research the metabolism of sterols by unculturable anaerobic gut microbiota to develop a framework for the identification of functional enzymes by microbes.
- Collaborated with Dr. Jon Clardy in high-throughput screening of bioactive microbial small molecules for binding to G-protein coupled receptor and induction of IL-10 to study anti-inflammatory effects, and induction of TNFa to to study pro-inflammatory effects. Found cardiolipin-like structure that induces activity of TNFa.
- Collaborated with clinical studies through the Human Genetics and Microbiome Core (CSIBD) at MGH to facilitate 16S rRNA gene sequencing, transcriptomics, and immune protein profiling for the host and microbiota in IBD and GI-related diseases.

University of Texas at Austin — **Austin, TX**
Chemistry Department with Dr. Eric Anslyn and Dr. Diana Zamora-Olivares — *Jan 2020-May 2022*
Undergraduate Research Associate

- Conducted research on profiling compounds in various wine varietals and grapes/grape leaves from Texas vineyards using LCMS and created a library of these metabolites, leading to the production of a manuscript.
- Worked on developing analytical sensing methods such as differential sensing, an assay composed of array sensors with a metal-indicator and peptide ensemble that results in unique colorimetric fingerprints for target

analytes. Used solid-phase peptide synthesis to produce these ensembles specifically for tannins.

College of Pharmacy with Dr. Kevin Dalby *August 2019-July 2020*

Undergraduate Research Associate

- Conducted research on the MAPK pathway (JNK/ERK) by measuring activation and inhibition with purified protein and activity in A549 cell lysates to be compared to data produced by a differential sensing assay for efficient high-throughput screening of kinase activity.
- Performed experiments focused on cell passaging, PCR mutagenesis, and enzyme kinetics (using radiometric kinase assays).

University of Texas Medical Branch **Galveston, TX**

Department of Microbiology & Immunology with Dr. Ashok Chopra *March 2018-Sept 2018*

Biomedical Research Program Scholar

- Conducted research on the use of host-directed non antibiotic therapeutics for drug resistant pathogen infections.
- Researched the antibacterial properties of oleandrin, a cardiac glycoside from the Nerium Oleander plant, in murine macrophage cells with Salmonella Typhimurium infection.

WORK EXPERIENCE

Ascension Seton Hospital **Austin, TX**

Pharmacy *January 2020- June 2022*

Pharmacy Technician

- Compounded IV medications, chemotherapies, and biotherapies
- Ensured proper stock and maintenance of the pyxis-omnicells
- Verified medications and consulted with insurance to process proper claims

University of Texas at Austin **Austin, TX**

College of Natural Sciences, CNS Honors Program *Aug 2020- May 2022*

Teaching Assistant

- Assisted in teaching the first-year honors seminar class, Originality in the Arts & Sciences. This included teaching first-year honors students in crafting a grant for original research projects and writing a short thesis on research within the arts & humanities space.
- Assisted in teaching and mentoring students in the Freshman Research Initiative program in the Supramolecular Sensors group, which included teaching students in general chemistry, organic chemistry, and analytical chemistry theories and lab techniques.

COMMUNITY SERVICE

Outreach Events & Broader Impact

Volunteer, Harvard Square Homeless Shelter - aided in running the shelter, including cooking to provide meals and cleaning the space for individuals living in the shelter *2023-Present*

Volunteer, People's Community Clinic (The Happy Kitchen)- Providing nutrition classes for medically uninsured and underserved Central Texans *2020-2022*

SKILLS & TECHNIQUES

Chemistry: Solid-phase peptide synthesis (SPPS), peptide chemistry, Quadrupole Time-of-Flight (Q-Tof) mass spectrometry, small molecule HPLC, Ultra-performance liquid Chromatography (UPLC), Reverse-phase HPLC (RP-HPLC), Liquid chromatography, Infrared Spectroscopy (IR), NMR.

Biology: High performance size-exclusion Chromatography (HP-SEC), Size-exclusion chromatography with multi-angle light scattering (SEC-MALS), Affinity Chromatography, Chemoproteomics, ELISA, Protein Purification at a large scale, Western Blot, Microbial & Mammalian Cell culture, High-throughput small molecule screens, Drug metabolism, Enzyme kinetics, Antibody staining, Flow cytometry, Isolation and purification of DNA and RNA, Cloning & Expression Vectors.