Annie Ikemoto

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EDUCATION

Memorial Sloan Kettering Cancer Center, New York, NY *Expected 2029*
Doctor of Philosophy, Cancer Engineering

Northeastern University, Boston, MA *March 2024*
Master of Science, Bioengineering

Northeastern University, Boston, MA *May 2022*
Bachelor of Science, Bioengineering
Concentration: Cell and Tissue Engineering

ACADEMIC RESEARCH EXPERIENCE

Daniel Heller Lab, Memorial Sloan Kettering Cancer Center *July 2025 - present*
Ph.D. Student

- Developed a PROTAC nanoparticle for breast cancer brain metastases. Ran protein characterization and cell cytotoxicity experiments
- Presented scientific findings at lab meetings and professional conferences

Jeffrey Ruberti Lab, Northeastern University *January 2022 - June 2022*
Undergraduate Researcher

- Used CRISPR/Cas9 to overexpress genes associated with collagen synthesis
- Developed an amino acid based, colorimetric assay to quantify collagen concentration and measure protein expression efficiency

Jon Clardy Lab, Harvard Medical School *January 2021 - July 2021*
Research Assistant

- Grew hit-producing gut microbes anaerobically, extracted and purified the active substance(s), and structurally characterized active substance(s) via relevant analytical methods
- Conducted cross-species screens on a library of gut bacteria to analyze toxins that modulate community dynamics

Philip Larese-Casanova Lab, Northeastern University *October 2018 - March 2020*
Undergraduate Researcher

- Analyzed the rates of dissolution of plastic nanoparticles via photodegradation and the rate of degradation of quantum dots when exposed to organic ligand solutions
- Ran experiments independently and presented work at virtual research symposiums

PROFESSIONAL RESEARCH EXPERIENCE AND EMPLOYMENT

Stanley B. Prusiner Lab, University of California, San Francisco *September 2022 – July 2024*
Staff Research Associate III

- Engineered induced pluripotent stem cell (iPSC) organoids and 3D assembloid models to model the blood brain barrier and evaluate drugs targeting neurodegenerative diseases
- Independently acquired data through confocal microscopy and characterized protein expression and intercellular dynamics

Repertoire Immune Medicines, Boston, MA *July 2021 – December 2021*
Protein Engineering and Molecular Sciences R&D Co-Op

- Collaboratively worked on protein design, production, purification, and analysis with a team of scientists focused on generating novel proteins for immune-based medications
- Conducted protein quality control procedures, operated analytical instrumentation, and maintained sample registration/inventory
- Independently ran protein-protein fusion, catalysis reactions to develop a new protocol that can be implemented to company's established protein generation procedures

J-Star Research Inc., South Plainfield, NJ *July 2020 – December 2020*
Synthetic Chemist Co-Op

- Performed reaction optimization of small molecule synthesis by setting up and running chemical reactions, working up the reactions, and purifying the products by chromatography and crystallization
- Followed up on the progress of reactions and characterized products using analytical tools
- Collaborated with Catalysis and Quality Control departments on two projects for pharmaceutical therapies

SELECTED LEADERSHIP AND VOLUNTEER EXPERIENCE

Afterschool STEM Mentoring Program, New York Academy of Sciences *October 2024 – present*

- Mentoring young students (2^{nd}-4^{th} grade) on the engineering process and teaching 10 week-long courses on building boats and bridges

High School Summer Internship Program Volunteer, University of San Francisco *June 2023 – May 2024*

- Mentored high school students on scientific lab techniques (pipetting, making solutions, preparing dilutions)
- Volunteered as a teacher in the Classroom Partnership program and taught biology classes to high school students during the 2024 school year

"Think Like A Scientist!", Sigma Xi Scientific Research Honor Society *January 2020 – May 2023*

- Managed and coordinated a STEM outreach group that aims to promote STEM diversity and education through mentoring young kids in the local Boston community (Roxbury)
- Lead activity sessions on a variety of STEM related activities (chemistry, biology, physics, engineering)

ACADEMIC HONORS AND AWARDS

Annual Biomedical Research Conference for Minoritized Scientists (ABRCMS) Travel Award *2023*

- Awarded a full travel award (includes registration fee, airfare, and housing) to attend and present a poster at the 2023 ABRCMS conference

Post-baccalaureate Research Opportunity to Promote Equity in Learning (PROPEL) Scholar *2022 - 2024*

- Awarded to students from underrepresented groups in biomedical research working at UCSF

Northeastern University Dean's List *2018 - 2023*

- Awarded to students achieving a semester GPA of 3.5 or higher (won every semester)
- Graduated Summa Cum Laude

Northeastern University Internal Awards

- PEAK: Bridge-Builder, PEAK: Ascent
- Honors Early Research Award

NIH/NIDDK Short-Term Research Experience Program Award *2020*

- A summer research grant supported by the NIH/NIDDK

National Hispanic Merit Scholar *2018*

- Awarded by College Board to Hispanic students who are in the top 1% of scorers on the PSAT

TECHNICAL SKILLS

- **Stem Cell Research:** iPSC maintenance, Stem cell differentiation, Organoid formation, Cryo-sectioning (Cryostat), Confocal microscopy, Cell Sorting (SONY Cell Sorter)
- **Protein purification**: FPLC (AKTA) - IMAC, SEC purification
- **Protein characterization**: SDS-PAGE, Western Blot, Fluorescence-Assay development, Flow Cytometry
- **Analytical and Organic chemistry:** HPLC, LCMS, GCMS, NMR, Organic synthesis, Crystallization
- **Molecular biology:** Bacterial and mammalian cell culture, DNA transfection, PCR
- **Data analysis:** R Programming, ImageJ, C++, MATLAB, Solidworks, AutoCAD