

Education

University of Wisconsin - Madison

Madison, WI | Expected Graduation: *June 2024*

2nd Year Graduate Student in Krishanu Saha's Lab

*-Biomaterials and Tissue Engineering Track
-GPA: 3.76/4.00*

-Relevant Coursework: General Virology, Stem Cell Bioengineering, Engineering Extracellular Matrices, Systems Biology: Mammalian Signaling Networks, Core Techniques in Protein & Genetic Engineering, Responsibility Conduct of Research, Microscopy of Life, Statistical Methods for Bioscience

Amherst College

Amherst, MA | *August 2015-May 2019*

Bachelor of Arts: Chemistry

*-Thesis: Determining Native-State Dynamics of MitoNEET using Hydrogen Exchange Mass Spectroscopy.
-GPA: 3.57/4.00, Cum Laude Honors*

-Relevant Coursework: Molecules, Genes & Cells Biology Class, Biochemistry, Quantum Chemistry & Spectroscopy

Dartmouth College

Hanover, NH | *August 2017-June 2018*

Engineering Exchange Program

-GPA: 3.63/4.00

-Relevant Coursework: Systems, Biotechnology & Biochemical Engineering, Distributed System & Fields, Science of Materials, Intro to Engineering, Intro to Thermodynamics, Science & Technology Writing

Relevant Experience

University of Wisconsin - Madison - Department of Biomedical Engineering

Graduate Research Assistant in Krishanu Saha's Lab

Madison, WI | *September 2019-Present*

- Reprogrammed blood cells into induced pluripotent stem cells (iPSCs) using nonintegrating plasmids and expanded iPSC culture to generate iPSC bank
- Trained another first year on procedures to reprogram and expand iPSC culture
- Worked with lab techniques including next generation sequencing, epifluorescence microscope, cell culture, and bacterial work
- Currently working on developing a method to control/eliminate CRISPR/Cas9 following efficient gene editing
- Conducting LAMP Assays for SARS-CoV-2 (COVID-19) surveillance and monitoring of UW Campus employees
- Peer reviewed papers for lab members prior to publication

BioMarin Pharmaceutical Inc.

Biophysical Characterization Intern

Novato, CA | *June 2019-September 2019*

- Characterized viral vector using various techniques
- Developed method to characterize viral vector using anion exchange columns on high-performance liquid chromatograph as well as the UNCLE, which is a stability screening platform
- Presented work at team research meetings and to other interns

Amherst College - Department of Chemistry - Thesis

Undergraduate Thesis

Amherst, MA | *August 2018-May 2019*

- Characterized mitoNEET using gel electrophoresis, UV-Vis, and fluorescence
- Determined the native-state dynamics of protein using hydrogen exchange mass spectrometry
- Wrote thesis based on the topic with Cum Laude Honors
- Presented poster at the Biophysical Society Annual Meeting & American Chemical Society Research Symposium
- Interviewed with The Amherst Student Newspaper for Thoughts on Theses

BioMarin Pharmaceutical Inc.

Pre-Formulations Intern

Novato, CA | *June 2018-September 2018*

- Characterized a rare, orphan disease protein using various techniques
- Developed methods for biochemical and biophysical characterization of the protein included use of high-performance liquid chromatography (HPLC), UV-Vis, circular dichroism (CD), fluorescence, static light scattering, and dynamic light scattering

-Presented poster for the work done on the protein of interest at the end of the summer

Amherst College – Department of Chemistry – Summer Undergraduate Research Fellowship

Sarles Fellow/Albree Fellow

Amherst, MA | January 2017-September 2017

- Develop method to monitor chlorophyll degradation using fluorometer and a multiplate reader
- Created videos demonstrating how to use the ISS K2 fluorimeter and Multi-Mode Microplate Reader
- Prepared materials for the SURF Poster Session & wrote 2 papers based on topics related to chlorophyll (not published)

Leadership & Community Involvement

Chronic Health Allies Mentorship Program (CHAMP)

Founding Member/Head of Recruitment

Madison, WI | August 2020-Present

- Recruit graduate students in different departments (primarily STEM)
- Liaison between Cell Manufacturing and Technologies group to plan outreach activity with undergraduates with disabilities.
- Implement formal training for graduate students who want to mentor students with disabilities

Biomedical Engineering 1st Year Mentoring

Committee Member

Madison, WI | August 2020-Present

- Design various guides for new mentors to learn how to mentor
- Plan team building activities for mentor-mentee community

National Science Foundation Engineering Research Center on Cell Manufacturing and Technologies (CMaT)

Research for Undergraduate Experience (REU) Mentor

Madison, WI | June 2020-August 2020

- Demonstrated how to read and analyze scientific paper to mentee
- Analyzed single-cell RNA sequencing data from mouse brain with mentee using R Studio
- Guided student in how to write a grant proposal and personal statement for the National Science Foundation

Discovery Volunteer

Activity Leader/Discovery Lab Management Assistant

Madison, WI | October 2019

- During Wisconsin Science Festival, taught community members and children of various ages (3-22) about climate change through an interactive game
- Facilitated experiments for elementary and middle school students
- Maintained stock equipment for experiments

QuestBridge & First Generation and/or Low-Income Students Group

Mentor

Amherst, MA | September 2016-September 2019

- Provide new students that are first generation and low-income advice for navigating Amherst College
- Guided students in determining how they can make their life at Amherst College easy and efficient
- Participated in the QuestBridge challenge with Mentee and won 1st place

Projects

2018 Spring Term Design Challenge

Intro to Engineering (ENGS 21) at Dartmouth College

Hanover, NH | March 2018-June 2018

- Designed a mechanical tool for musicians to simultaneously turn sheet music while playing instruments
- Worked on patenting invention

Sterling Engine Project

Thermodynamics (ENGS 25) at Dartmouth College

Hanover, NH | March 2018-June 2018

- Manufactured and assembled a Sterling Engine from brass and aluminum parts in machine shop
- Won 2nd in creating an engine in Maximum Efficiency category and 3rd in maximum power development

Composite Materials Research Project

Science of Materials (ENGS 24) at Dartmouth College

Hanover, NH | January 2018-March 2018

- Constructed material from epoxy resin with pure fiberglass, pure carbon fiber, and alternating fibers
- Tested mechanical properties of the various composite materials made using the Instron (tests included open-hole tensile and three-point deflection)
- Analyzed vertical and horizontal break points of composites using scanning electron microscopy (SEM)

Awards & Honors

The Amherst College Fellowship for Biomedical Engineering – Award based on academic merit given to Amherst College graduate students past their first year of study

The Lloyd I. Rosenblum Memorial Fellowship – Award based on academic merit given to Amherst College student pursuing biology-related field in the first year of graduate studies.

American Institute of Chemists Award – Give to outstanding seniors majoring in chemistry (May 2019)

Latin Honors Cum Laude – May 2019

Questbridge Scholar – Given to high-achieving, low-income students (2015-2019)

Elks Scholar – Most Valuable Student – Given to students involved in leadership and community service (2015-2019)

ENGS 25 Sterling Engine Awards – 2nd Place in Maximum Efficiency, 3rd Place in Maximum Power Development (2018)

Sarles Fellow: Fund provided support for research in the sciences during the summer (2017)

Albree Fellow: Provided support for SURF fellowship during the summer (2017)

Gregory S. Call Fellow – Grant for summer research program (2016)

Gregory S. Call Academic Intern – Funding for research during the fall semester (2016-2017)

Conferences Attended

Wisconsin Institute of Discovery Symposium (August 2020)

Genome Engineering: CRISPR Frontiers Virtual Conference (August 2020)

International Society for Stem Cell Research Conference (June 2020)

Somatic Cell Genome Editing Consortium Meeting (June 2020)

Stem Cell & Regenerative Medicine Center Conference (September 2019)

American Chemical Society, Connecticut Valley Section - Undergraduate Research Symposium (April 2019)

Poster: *Determining Native-State Dynamics of MitoNEET using Hydrogen Exchange Mass Spectroscopy.*

Biophysical Society Annual Meeting (March 2019)

Poster: *Determining Native-State Dynamics of MitoNEET using Hydrogen Exchange Mass Spectroscopy.*

The Scripps Research Institute DiVERGE Program (January 2019)

Worcester Polytechnic Institute Next-in-Bio Conference (November 2018)

Poster: *Determining Native-State Dynamics of MitoNEET using Hydrogen Exchange Mass Spectroscopy.*

Amherst College's Summer Undergraduate Research Fellowship Poster Session (Sept 2017, Sept 2018)

Poster: *Chlorophyll Clocks.*

Skills and Abilities

Instrumentation & Technologies: HPLC, UV-Vis, Fluorimeter, UNcle (stability screening platform), CD, Instron, SEM, Mass Spectrometer, Qubit, Thermocycler

Software: MatLab, R-Studio, Mathematica, LaTeX, GraphPad Prism

Processes & Techniques: PCR, Protein Synthesis/Purification, Agarose Gel Electrophoresis, Cloning & Transformation of Genes, ELISA Assays, Western Blotting, Cell Culture, iPSC culture, DNA Extraction and Quantification, RNA Extraction and Quantification, Quantitative Reverse Transcriptase Polymerase Chain Reaction (qRT-PCR), Loop-mediated Isothermal Amplification (LAMP) Assay

Communication: Scientific writing and editing

Other Extracurriculars

Graduate: Graduate Women in Science (GWIS). Biomedical Engineering Graduate Student Association (BME GSA). Multicultural Graduate Network. Brilliant And Diverse Graduate Research Scholars (BADGRS). Wisconsin Stem Cell Roundtable (WiSCR). Queer and Trans Engineers (QTE). Queer Grads (QGrads). Global Health Innovation Club (GHIC)

Undergraduate: Freshmen Representative in Association of Amherst Students (Student Government), Committee Member in Powerhouse Committee, Board Member for Hooked on Aquaponics, Video Producer for Eco-Reps, Amherst College News, Committee Member on Campus Activities Board, Olio Yearbook, South Asian Students Association, Vela Scholars, Society of Women Engineering, Committee Member on the Community Standards Review Board, Founder of FilmIT!