Aman Prasanna

Raleigh, North Carolina 27606 (479) 544-3909 abprasan@ncsu.edu linkedin.com/in/aman-prasanna

Education

North Carolina State University **08/2022 - 05/2026**

Bachelors of Science in Biomedical Engineering *Raleigh, North Carolina*

- **GPA:** 3.8
- **Awards:** Dean's List (3x),REU Funds for Spring 2023, Summer 2023, Fall 2023, Spring 2024, and Summer 2024
- **Clubs:** Helping Hands

Relevant Coursework

- Computer Methods in Biomedical Engineering
- Materials Science and Biomaterials
- Organic Chemistry
- Cellular and Molecular Biology
- Chemical and Molecular Science
- Computing Environments
- Biomedical Electronics
- Biomedical Engineering Design and Manufacturing 1
- Introduction to Biomedical Mechanics

Experience

North Carolina State University **09/2022 - Present**

Undergraduate Research Assistant (Keung Lab) *Raleigh, North Carolina*

- Co-Author on "Geometric Confinement as a Method to Assemble Polarized Neural Tissue" - under development
- Spent 100+ hours within the lab and biohood, applying experimental procedures such as micro-fabrication, organoid generation, and stem cell culturing
- Engaged in over 25 informative presentations to my mentor and the Keung Research Group
- Utilized AutoCad to draft 2D engineering drawings of micro wells to be printed as a mold for an SU-8 substrate

Ignite Professional Studies **08/2021 - 05/2022**

EMT and ER Training *Bentonville, Arkansas*

- Completed 36 clinical hours and shadowed on 10+ EMT calls including cardiac arrests, drug overdoses, and injury assistance
- 24 clinical hours shadowing nurses and assisted in catheter implementation and receiving patient information
- Performed 50+ venipunctures to receive my Phlebotomy certification

Research Projects

Geometric Confinement As a Method To Assemble Polarized Neural Tissue **01/2023 - Present**

- Designed a variety of shapes resembling the gyri and sulci of the Cerebral Cortex using AutoCad, with sizes as small as 10 microns wide
- Collaborated with a company to obtain a photomask design, then utilized Microfabrication techniques to create a Silicon Wafer for experimentation
- Employed Agarose Casting methods to seed organoids onto the Silicon Wafer, investigating optimal confinement conditions for achieving uniform neuron assembly
- Intend to integrate the designed shapes into future organoid procedures as an enhanced model for drug analysis and testing
- Ongoing work includes completing separate agarose castings for additional shapes and planning to analyze neural tissue through Immunostaining to identify the most effective confinement conditions for uniform neuron assembly

LOVAMAP (Local Void Analysis using Medial Axis by Particle configuration) **04/2024 - Present**

- Project coordinated under Dr.Lindsay Riley through the Segura Lab at Duke University
- Developed multiple Python scripts for automated data extraction and analysis using unique descriptors
- Streamlined workflow and improved data accessibility through automation

VoyagerPy **05/2024 - Present**

- Project coordinated under Dr.Lambda Moses and Joseph Rich through the Pachter Lab at Caltech
- Translated vignettes from Voyager R to Python and ran compatibility tests to ensure similar outputs between programming languages

Chromatin-interacting elements mining project **05/2024 - Present**

- Project coordinated under Dr.Siddartha Jena
- Project aim is to utilize existing protein structure databases to mine for putative chromatin-interacting elements within the CBS region

- Automated the identification and clustering of CBS region proteins using Python, leveraging MMseqs2 for initial clustering and FoldSeek for all-by-all structural alignments to reveal similar structures with differing sequences from a viral protein structure database

Time-course Gene Expression Project **05/2024-Present**

- Project coordinated under Dr.Biplabendu Das
- Project aim is to utilize published RNA-Sequencing datasets to identify orthologous genes across species in order to build gene co-expression networks
- These gene co-expression networks can then be annotated and compared across different species

Extracurriculars

Helping Hands Club **09/2022 - Present**

Research and Design Team *North Carolina State University*

- Assisted in creating an AutoCad Design for two prosthetic hands for siblings Skyler/Gage
- Collaborated with other BME students to determine measurements and scaling before printing the prosthetics
- 50+ hours spent drafting timelines, modifying prototype designs, and assembling prototype after printing

Technical Skills

Languages/Tools: AutoCAD, Solidworks, MATLAB, Arduino, Python, R
Lab Skills: Microscopy, Pipetting, Organoid Dissociation, Agarose Casting, Passaging, Coating VTN Plates, Cell Counting, Micro-fabrication, Cell Culture, Organoid Generation, Cryosectioning
Certifications: EMT certified, Phlebotomy certified, Matlab