

# Richi Mozumder

Student Researcher | Biophysics & Astrophysics

## Contact:

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## EDUCATION

### Stuyvesant High School, NY

September 2023 - June 2027 | 4.0 (UW)

Relevant Coursework: AP Biology (5), AP Chemistry (5), AP Precalc Honors, Drafting/CAD (99 avg.), Computer Science Foundations (99 avg.), AP European History, APUSH, AP Lang, Cancer Research (100 avg.)

## RESEARCH & ACADEMIC EXPERIENCE

### Science Honors Program, Columbia University — Student

Sept 2024 - PRESENT

Completed advanced coursework in Relativistic Astrophysics, Number Theory, and Organic Chemistry.

Applied multivariable calculus and fluid dynamics to model stellar structures and supernova dynamics.

### NASA GeneLab for High Schools, Remote — Student Intern

June 2025 - December 2025

Performed computational analysis on the OSD-771 spaceflight dataset, modeling systemic impacts of microgravity.

Co-authored a 15-page research proposal and poster; advanced as one of Top 2 teams out of 47 to be sponsored at the ASGSR national conference.

### Science Regeneron Research Club, Stuy HS — Student Researcher

January 2024 - June 2025

Executed molecular biology protocols: PCR, DNA extraction, and titrations.

Designed experiments measuring bacterial response to heat and light; collected and statistically analyzed CO<sub>2</sub> data to model system responses.

### Biology Department, Stuy HS — Lab Intern

September 2024 - June 2025

Prepared chemical solutions, performed titrations, and supported 200+ students weekly in microscopy and enzymatic assays.

### Cybersecurity Course, Datacion x University Settlement — Student

July 2025 - August 2025

Applied computational problem-solving to identify vulnerabilities in complex networks using Kali Linux.

## LEADERSHIP & ORGANIZATIONS

### Stuy Cultural Preservation Society, Stuy HS — President

January 2024 - PRESENT

Revived a 9-year inactive club, growing membership through cultural initiatives and newsletter launch.

## SKILLS

### Programming &

### Computational Analysis:

Python (Jupyter), Racket, NetLogo, Java (beginner)

### CAD & Modeling:

OnShape (foundational proficiency)

### Labs & Research:

Molecular biology protocols, chemical titrations, microscopy

## AWARDS

Science Olympiad ('25 YUSO Invitational): 8th Astronomy, 7th Geological Mapping

HOSA: ('24-'25) 2nd Medical Terminology, 4th Biology (school)

Varsity Bowling: Rookie of the Year '23-'24; 3rd Borough Championships & Coach's Award '24-'25; 2nd Borough Championships '25-'26

## LANGUAGES

English (native), Spanish (intermediate), Bangla (conversational)

## OTHER EXPERIENCE

Bowling Varsity Player | Fall 2023 – Present

Red Cross Volunteer | Spring 2024

Managed budgets, coordinated logistics, and led events fostering student engagement.

**Metis Project, NY — *Math Admin & Board Member in Training***

September 2023 - PRESENT

Oversaw operations of 190+ tutors; developed workflows for lesson planning and student support.

Volunteered as a math tutor, emphasizing hands-on problem-solving skills.

SYEP Intern | Summer 2024

Spectator Web Department  
Member | Spring 2025 –  
Present

HOSA Med Term Co-Leader |  
Fall 2025 – Present

HSC Co-President (former  
Events Coordinator) | Fall 2025  
– Present