

# Ryan Cooley

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## Education

### Tufts University

Medford, MA

B.S. IN CHEMICAL PHYSICS

Expected Graduation June 2027

GPA: 3.89/4.00, Dean's List (All Semesters)

Relevant Coursework: Calculus I-III, Linear Algebra, Physics 11-13, General Chemistry, Organic Chemistry, Physical Chemistry, Introduction to Computer Science

## Skills

**Programming and Tools:** Python (PCEP Certified), C++, Git | **Molecular Simulations:** OpenMM, VMD | **Astronomical Data Tools:** CIAO, DS9 | **Document Preparation:** LaTeX | **Web Technologies:** HTML | **Linux Tools and Security:** OverTheWire Bandit

## Research Experience

### Ding Lab at Tufts University

Medford, MA

UNDERGRADUATE RESEARCH ASSISTANT

May 2024 - Present

- Participate in weekly discussions of scientific papers (linear algebra, coupling analysis, “bundled water”)
- Simulate water (TIP3P vs. bundled) in OpenMM/Python; process output with NumPy to validate force constants
- Collaborate with postdoc and PI on coarse-grained force field development and adapt to evolving project goals

### Harvard-Smithsonian Center for Astrophysics

Cambridge, MA

ASTROPHYSICS INTERN

June 2022 - August 2023

- Created astronomical images from Chandra data using CIAO and DS9 under the mentorship of Dr. Felipe Andrade-Santos
- Learned to use LaTeX for scientific paper creation and publication

### Dexter Southfield

Brookline, MA

PRESENTER ON INFORMATION RETRIEVAL

September 2022 - December 2022

- Researched information retrieval principles and presented findings to math and science faculty at Dexter Southfield

## Professional Experience

### Chestnut Hill Realty

West Roxbury, MA

ADMINISTRATIVE ASSISTANT

May 2024 - August 2024

- Managed office tasks, organized property tours, and handled calls with prospective and current tenants
- Coordinated maintenance requests enhancing tenant satisfaction

### CVS

Wellesley, MA

RETAIL STORE ASSOCIATE

December 2020 - March 2023

- Stocked inventory, trained new hires, and helped customers have a positive experience

## Extracurricular Activity

### Students for the Exploration and Development of Space (SEDS)

Tufts University

CUBESAT COMMUNICATIONS & GROUND STATION LEAD

November 2023 - Present

- Spearhead ground station communications research and planning for the CubeSat project, mastering uplink/downlink protocols and mission operations
- Assist with orbital mechanics in MATLAB; use “42” for spacecraft simulations and MASTER for space debris analysis
- Explore data analysis approaches and contribute to team proposals on mission performance

### American Chemical Society

Tufts University

MEMBER

September 2023 - Present

### Society of Physics Students

Tufts University

MEMBER

September 2023 - Present

### Club Squash

Tufts University

MEMBER

September 2023 - Present

## Honors & Awards

### Sigma Pi Sigma (Physics & Astronomy Honor Society)

Tufts University

INDUCTED MEMBER

April 2025 - Present

- Recognized for exceptional academic performance and leadership in physics