Avram Dreyer

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Education

Cornell University, BS in Mechanical Engineering – Ithaca, NY **Aug 2025 – May 2029**

- **GPA: 4.06/4.3;** ASME, Cornell Astronomical Society, Amateur Radio Club, Cornell Maker Club
- ***Relevant Coursework:*** Statics, Differential Equations, Intro to Computing, Intro to Lasers and Photonics

Bergen County Technical High School, Diploma in Engineering – Teterboro, NJ **Sept 2020 – June 2025**

- **GPA: 3.99/4.0;** National Honor Society, High Honor Roll, Departmental Award for Physics

Projects

Satellite Thermal Heatsink – Houston, TX **Sept 2024 – Apr 2025**

- Collaborated to design and build a novel thermal management system for a 1U CubeSat satellite.
- Designed in Fusion360 and performed a thermal analysis with ANSYS Mechanical.
- Selected as one of five finalist teams in the nation for the NASA HUNCH space hardware design competition.
- Presented at Johnson Space Center to NASA engineers for potential implementation in flight hardware.

Technical Experience

Mechanical Subteam Member, **Cornell Autonomous Sailboat Team** – Ithaca, NY **Feb 2026 – present**

- Member of a 48-student Project Team designing and building an autonomous sailboat for the IRSR competition.
- Focused on the design and fabrication of the boat's custom reinforced mylar sails and rigging system.
- Used Solidworks and composite materials to design a prototype solid sail for use on a future trans-Atlantic boat.

Sailing Instructor and STEM Educator, **Camp Wigwam For Boys** – Waterford, ME **June 2025 – Aug 2025**

- Taught sailing and other water sports to campers ages 8-16 at a summer camp in Maine.
- Ran a model rocketry workshop, teaching campers to design, build, and launch their own custom model rockets.
- Contributed to the successful construction and launch of a high-powered I-motor rocket at the end of the summer.

Research Experience

Undergraduate Researcher, **ZT Group, Cornell University** – Ithaca, NY **Mar 2026 – present**

- Research group studying nanoscale thermal transport techniques to improve heat management in microelectronics.
- Studied the use of microscopic liquid crystal thermal switches to provide integrated on-chip thermal control.

Research Intern, **Parziale Group, Stevens Institute of Technology** – Hoboken, NJ **Sept 2024 – June 2025**

- Research group studying hypersonic fluid flow and turbulence at airspeeds above five times the speed of sound.
- Used a custom Mach 6 wind tunnel to study turbulence and heating behavior of aircraft at extremely high speeds.
- Contributed to graduate-level fluid dynamics research for the US Navy Office of Naval Research (ONR).

Skills and Technologies

Skills: Soldering, Digital Electronics, Numerical Simulation, 3D Design, Rapid Prototyping, Data Analysis

Technologies: Python, Solidworks, Autodesk Fusion 360, Autodesk Inventor, MATLAB, ANSYS Mechanical, Arduino