

Elias Herrera Hernandez

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EDUCATION

Cornell University, College of Engineering, Ithaca, New York May 2028

- *Bachelor of Science in Mechanical Engineering, GPA: 4.11/4.00*

McDowell High School, Erie, Pennsylvania June 2024

- **GPA: 4.0 UW | 4.48 W, 3rd in Graduating Class of ~550**

Relevant Coursework: Dynamics • Thermodynamics • Linear Algebra • Statics & Mechanics of Solids • Intro to Computer Science (Python) • Differential Equations • Electricity & Magnetism • Multivariable Calculus • Intro to Nanoscience • Intro to Special Relativity • AP Physics C: Mechanics • AP Statistics

EXPERIENCE

Epworth Automation, Engineering Intern, Erie, Pennsylvania May 2025 – Present

- Designing and testing custom parts for integration with the rest of the company's products, including upgrade & customization packages for robot & controller base models
- Redesigning the company's PEAT robot at a top system level to improve serviceability, simplify manufacturing, & expedite production
- Prototyping & production of digital interfaces & accessories facilitating in-shop access to ERP & assembly diagrams
- Optimizing transition of 1000+ part & assembly CAD files from Autodesk Fusion to Inventor
- Maintaining coherent relationships between Autodesk Inventor CAD File Paths & the company's proprietary ERP system to optimize part ordering, inventory upkeep, & work order generation
- Creating assembly diagrams of all company products & relevant subsystems to standardize & expedite production

Cornell Baja SAE Racing Project Team, Ithaca, New York October 2024 – Present

- Collaborating on student-led team to design, build, & test an off-road vehicle for competition in the Baja SAE series
- Contributing to mechanical design, fabrication, & performance optimization
- Improving vehicle performance through hands-on prototyping, testing, & troubleshooting
- *Drivetrain Subteam Member*
 - Designing driveshafts with new interface between shaft and gearbox to improve serviceability, mitigate seal drag, reduce rotational inertia by 5%, and decrease hardware consumption by 50%
 - Designing plunging cups to more closely comply with overall vehicle geometry, aiming to decrease wear on driveshaft at the extremes of suspension travel
- *New Member*
 - Designed new CV Joint & Rear Gearbox Guarding for the 2024-2025 competition vehicle

Pilot Muon Detection Particle Physics Lab Section, Student Researcher, Ithaca, New York August 2024 – December 2024

- Participated in a pilot curriculum engineering lab session using MIT's cosmic watch
- Researched effects of material and environmental variables on muon detection

SPECIALIZED SKILLS

Programs: Solidworks CAD & Visualize • ANSYS FEA & CFD • KISSsoft • Autodesk Fusion 360 & Inventor • Microsoft Office

Programming Languages: Python • Javascript • LaTeX • MATLAB

Technical: Manual Milling & Lathing • Composite Layups • Power Tools

Languages: English & Spanish (native/bilingual); German (intermediate); French (elementary)

LEADERSHIP AND COMMUNITY ENGAGEMENT

Engineering Peer Advisor for Cornell Engineering, Ithaca, New York April 2025 – Present

- Assist faculty in planning freshman Engineering Seminar class.
- Advise with course enrollment, study skills, co-curriculars, and academic/personal referrals

Guide for Cornell Outdoor Odyssey Pre-Orientation Program, Ithaca, New York October 2024 – Present

- Led a group of six incoming freshmen on a backpacking trip in the Adirondack High Peak Wilderness
- Completed certification in Advanced Wilderness First Aid, conflict resolution, and diversity/inclusion

Student Ambassador for Cornell University Big Red Ambassadors, Ithaca, New York September 2024 – Present

- Organizing campus tours, information sessions, and mentorship programs to support prospective students
- Planning and hosting Cornell Days, the largest admitted students event in the Ivy League

Teacher for SPLASH! at Cornell, Ithaca, New York September 2024 – Present

- Teaching wilderness skills classes as a member of an open learning program for students in grades 7-12 taking place once a semester on Cornell University's campus