

AARON DUBOIS

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Education

Swarthmore College | *B.S. in Engineering (Electrical Concentration); B.A. in Physics* - GPA: 3.95/4 May 2026

Relevant Coursework: Electrodynamics, Applied Electromagnetism, Linear Systems, Fluid Mechanics, Thermodynamics, Mechanics, Circuit Analysis, Differential Equations with Linear Algebra, Computer Engineering, Data Structures & Algorithms, Relativity

James Madison High School | GPA: 3.97/4 unweighted | National Merit Finalist May 2022

Engineering Experience

Smith Materials Lab | *Research Assistant* | Swarthmore, PA May 2024 - Present

- Led the design and creation of an airtight cooling chamber used for 3 month long battery experiments for under \$500. Commercial alternatives exceed \$10,000.
- The chamber design was effective; a second chamber is under construction. Preparing a methods paper that details the design.
- Performed three experiments (Mössbauer Spectroscopy, Electrical Impedance Spectroscopy, and Battery Cycling) to investigate battery performance under varying temperatures and conditions.
- Rapidly prototyped designs with CAD, CAM, CNC & Manual Machining, 3D Printing, Laser Cutting, & Soldering. Created plots of temperature stability and variation in the chamber.
- Presented designs, experiments, and results at 4 events. Two more presentations are planned including at the Material Research Society's Conference in Boston.

Pression, LLC | *Product Development Engineer Intern* | Coatesville, PA May 2023 - July 2023

- Programmed (in a C-like language) the main display of Pression's primary product, the Wave PRO, that controls external counterpulsation treatment and communicates with microcontrollers and sensors. My work is being used in clinical trials.
- Designed and prototyped peripheral components for the Wave PRO, including a hospital bed mount to secure tubing for compressed air during treatment and physical data interface ports.
- Supported the CEO with a pitch deck and drafted an application for a startup incubator on behalf of Pression.
- Authored original protocols and processes for software requirements, release, version control, and verification. Still in use.

Visit duboisprojects.github.io/projects/ for more experiences, projects, and visuals.

Leadership Experience & Campus Positions

Comma | *Co-Founder* | Swarthmore, PA Feb 2023 - Sep 2023

- Won 2nd place & \$1,000 at SwatTank 2023 for best startup pitch.
- Developed prototypes of user interfaces, a website, and many other start-up related materials.
- Established relationships with 8 libraries to provide physical books and beta test Comma's software.

Campus Positions | Swarthmore College

- Engineering Shop Technician - Help students navigate and use the shop; help maintain organization.
 - Drone Club Launch Director - Organize launching and usage of drones on campus.
 - Society of Physics Students Chapter Member - Organize trips to national labs and conferences. Participate in other events.
 - Certified Club Van Driver - Drive 10 person vans for clubs, research groups, and events I participate in.
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Skills & Outside Interests

Building | intermediate: Manual and CNC machinery, 3D Printing | basic: woodworking, soldering, laser cutting, welding

Design and Software | intermediate: CAD, CAM, microcontrollers, C++, C | basic: FEA, MATLAB, PCB design, Git, Python

Club & Intramural Sports | Club Soccer, Club Squash, Intramural Dodgeball Champion

Nature Activities, Hiking, Skiing, Water Related Activities, Trail and Road Running, Board Games