David M. Johnson

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Education

Cornell University, *B.S. in Engineering Physics* May 2026

Physics: Quantum Mechanics II; Mathematical Physics II; E&M III; Fusion Energy; Statistical Mechanics
Computing: OOP & Data Structures; Electronic Circuits & Digital Logic

Professional and Project Experience

PUFFIN Pulsed Power Laboratory, Cornell University *Jan 2025 – May 2026*
Undergraduate Researcher

- Modeled magnetic reconnection within a plasma using an HPC and full magnetohydrodynamics code
- Created publication-ready figures using custom file reader, conda environemnt, and plotting scripts
- Compared results to existing experimental literature to generate ideas for future experiments

Plasma Physics Group, Imperial College London *Jun 2025 – Aug 2025*
Undergraduate Researcher

- Investigated Sheared-Flow Stabilized Z-Pinches using a radial wire array with an axial target wire
- Tuned precise initial conditions and wrote magnetic boundary conditions, including for cylindrical geometry
- Developed a flexible framework for adding inductance to electrodes to change current division

Laboratory of Plasma Studies, Cornell University *Oct 2023 – Jan 2025 (Full Time: Summer 2024)*
Undergraduate Researcher

- Simulated the plasma formed by an exploding gas puff using a snowplow model (non-linear ODE)
- Fabricated gas-release mechanism based on the simulation results with mill, lathe, and other machine tools
- Designed, built, and calibrated magnetic diagnostics, like Rogowski coils and B-dot probes
- Built an 18-inch Helmholtz Coil; wrote capacitor bank safety manual; calibrated current monitor

General Dynamics Electric Boat, New London, CT *Jun 2023 – Aug 2023*
Design & Engineering Intern

- Identified a design timeline issue that was elevated to a VP of the company with 20,000+ employees
- Composed a detailed letter describing the inefficiency and was given a return offer to help solve the issue
- Learned valuable lessons in engineering management, systems design, and identifying progress blockers

Leadership & Extracurricular Experience

Cornell Outdoor Education — Instructor
Sept 2022 – Present Teaching climbing/canoeing/backpacking, training new staff.
Physics Learning Strategies Center — Tutor
Aug 2024 – May 2025 Tutored 15+ physics courses, explained complex concepts clearly.

Skills, Certifications, & Awards

Languages: Python, Java, Fortran, LaTeX, SQL, Tableau, HTML, CSS
Softwares/Tools: FEA (ANSYS), CAD (NX, Fusion, AutoCAD), HPC, SSH
Other: OOP, Data Structures, Scientific Computing, Clean Room, Technical Writing
Certifications: DoD SECRET Clearance, Wilderness First Responder (WFR)
Awards/Grants: Dean's List (All Semesters); Cornell Engineering International Summer Reserach Grant (2025), Caltech Summer Undergraduate Research Fellowship (2025, declined)