

Henry Russell

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EDUCATION

Davidson College

B.S. in Physics, Concentration in Computer Science and Mathematics

Davidson, NC

Expected May 2026

- **GPA:** 3.78

- **Relevant Coursework:** Electronics, Electricity & Magnetism, Classical Mechanics, Data Structures, Computer Organization, Computational Physics, Calc III, Linear Algebra, Astrophysics, Modern Physics, Quantum Physics

Bond University

Study Abroad Student

Gold Coast, QLD

Sep – Dec 2024

Asheville School

High School Diploma, Cum Laude Society

Asheville, NC

May 2022

ENGINEERING PROJECTS

Davidson College

Baja SAE– Team Lead, Suspension

Davidson, NC

May 2025 – Present

- Lead suspension design and fabrication for Davidson’s 50+ member Baja SAE team, using Fusion 360, SolidWorks, and welding techniques to create and test custom components
- Coordinate garage hours and sub-team meetings, managing timelines, delegating tasks, and mentoring newer members to keep projects aligned and competition-ready
- Partner with local manufacturers to produce custom parts, compiling detailed bills of materials and negotiating sponsorships to reduce costs and secure machining support

Solar Boat Project– Project Lead

Jan – May 2025

- Secured \$26k sponsorship from Yamaha Motor Corporation through an extensive outreach campaign to fund the conversion of a pontoon boat into a fully electric, solar-powered vessel
- Designed and managed an independent engineering study, leading a cross-functional team through electrical system design, carpentry, and CAD modeling to prototype sustainable marine technology for widespread recreational use
- Presented project findings at the Davidson College’s Verna Miller Case Symposium, showcasing technical results and sustainable design impact to faculty, peers, and industry sponsors

Tiny House Project– Engineering Team Member

Jan – May 2024

- Collaborated on the design and construction of an off-grid, sustainable tiny house, applying electrical, carpentry, and systems engineering skills to develop a functional living space
- Contributed to project planning and problem-solving efforts balancing cost, energy efficiency, & material constraints

RESEARCH

Institute for Basic Science Center for Climate Physics

Geophysical Research Intern, Laboratory of Daniel Cleary, Phd

Busan, South Korea

June – Aug 2024

- Awarded Davidson College’s \$6k Southeast Asia Research Grant to design and build a speleothem incubator in Fusion 360 for controlled climate experiments
- Produced engineering drawings interpretable across language barriers to coordinate with foreign fabrication shops
- Operated advanced lab equipment, including a speleothem mill and mass spectrometer, to support climate studies

Davidson College Physics Department

Magnetomotive Ultrasound Research, Laboratory of Ben Levy, Phd

Davidson, NC

Jan – May 2024

- Collaborated with faculty and peers to develop a contrast agent for magnetomotive ultrasound, applying finite element analysis with COMSOL Multiphysics to model system behavior
- Presented findings at the NCS-AAPT Meeting (3/24) and Davidson College’s Verna Miller Case Symposium (5/24), demonstrating technical results and physics research

OTHER RELEVANT EXPERIENCE

Davidson College

Makerspace Lead Technician

Davidson, NC

Aug 2023 – Present

- Operate and maintain 3D printers, CNC machines, laser cutters, and electronics tools using Adobe Illustrator, Ultimaker Cura, LightBurn, and CutStudio; ensure calibration, safety, and reliability of all systems

- Mentor students and support class projects through CAD modeling, prototyping, and circuit/PCB design while assisting faculty and visiting teams with interdisciplinary builds
- Manage and train a team of technicians, develop workflows and safety protocols, and represent the makerspace by giving tours and presenting to the Technology & Innovation department

Physics Embedded Tutor

Aug – May 2025

- Supported labs, graded coursework, and held office hours outside of class, breaking down complex physics concepts into approachable lessons that improved comprehension and performance for 30+ students per semester
- Collaborated with professors to reinforce key concepts, provide targeted tutoring, and track student progress

WORK EXPERIENCE

Campus Swap

Davidson, NC

Founder

Oct 2025 – Present

- Awarded a \$1k Try-It grant from Davidson’s Hurt Hub Center for Entrepreneurship to build a student move-out and consignment service that reduces waste and provides affordable goods
- Directed product development and business strategy by leading a three-person development team and creating financial models, scaling playbooks, and investor pitch materials
- Launched a summer pilot program, coordinating logistics, recruiting users, and validating market demand

Davidson College

Davidson, NC

Davidson College Greek Life Sustainability Chair

Aug – May 2024

- Led composting and waste-reduction initiatives across student organizations by running monthly sustainability rep meetings; partnered with Crown Town Composting to achieve full campus-wide adoption of composting practices

Camp Dudley

Westport, NY

Leader at Sleepaway Camp

Jun 2022 – Aug 2023

- Supervised seven campers per session, led outdoor trips, coached sports, and mentored younger leaders

SKILLS & INTERESTS

- **Programming:** Python, Java, C/C++, Mathematica, COMSOL, JavaScript
- **Electronics:** Arduino, KiCad, PCB design, Logisim, Multisim, robotics systems
- **Mechanical:** CAD modeling (Fusion 360, SolidWorks), welding, woodworking, metalworking, 3D printing, laser cutting, plasma cutting
- **Laboratory:** Oscilloscopes, function generators, mass spectrometers, optical systems
- **Aviation:** FAA Private Pilot’s License (Expected Jan 2026)
- **Language:** Spanish (Conversational)
- **Interests:** Backcountry skiing, rock climbing, hiking, camping, live music