Katelyn Steele

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EDUCATION

Duke University, Durham, NC | GPA: 3.62/4.00

Expected Graduation May 2027

B.S.E. in Mechanical Engineering and Aerospace Engineering Certificate

Relevant Coursework: Thermodynamics, Structure and Properties of Solids, Dynamics, Mechanics of Solids, Computational Methods in Engineering, Space Systems Design

EMPLOYMENT

NSF REU Research Fellow, Florida Center for Advanced Aero-Propulsion (FCAAP)

May 2025 - Aug 2025

- Led computational investigation on influence of variations in Mach number and wedge angle on shock-wave boundary layer interaction structures, including trends in pressure distribution, shock angles, and Mach stem formation
- Applied findings to inform the design and aerodynamic loading considerations of high-speed aircraft and munitions

First-Year Design LabRAT, Duke University Pratt School of Engineering

Aug 2024 - Apr 2025

- Selected based on technical expertise; trained 300+ first-year students on safe and effective use of tools and equipment
- Advised EGR 101L design teams, providing hands-on support throughout the prototype development process
- Oversaw and maintained makerspace equipment including 3D printers, laser cutters, power tools, and a CNC mill

Sport Club Supervisor, Duke Recreation & Physical Education

Sep 2023 - Apr 2025

- Served as a liaison between sport club officers and professional staff, supporting 500+ student-athletes across 8 clubs
- Oversaw logistics for events, monitored club communications, and maintained records to ensure safe and successful programming

TECHNICAL EXPERIENCE

30k-ft SRAD Solid Fuel Rocket, Duke AERO

Aug 2024 - Present

- Developed a 6" O-class solid rocket motor targeting a 30,000 ft altitude at IREC; mixed and cast solid propellant grains
- Designed unified forward closure compatible with hydrostatic, test, and flight configurations, reducing machining time and cost by ~67%
- Conducted FEA, hydrostatic, and static fire testing to validate structural integrity and motor performance
- Performed wet and pre-preg composite lavups for body tubes and couplers; fabricated and mounted composite fins
- Maintained the master assembly of the rocket, coordinating integration of over 100 individual parts

Flight Simulator Development, Duke Aviators

Jan 2025 - Present

- Upgraded existing flight simulator configuration to progress toward a fully functional, to-scale Cessna 172 dashboard
- Designed and constructed a custom wooden frame to support dashboard components
- Engineered a realistic flaps panel using 3D printed components and Arduino electronics, fully integrated with Microsoft Flight Simulator software

Garmin Tone Generator, Duke First-Year Design Program

Aug 2023 - Dec 2023

- Developed a wrist-mountable testing device that emitted auditory tones ranging from 200 Hz to 19 kHz and enabled divers to provide feedback on those tones on a four-level subjective scale to engineers above the water in real time
- Reduced Garmin's sound testing feedback loop time to 1.58 seconds, optimizing communication between diver and engineer

SKILLS

- Software: SolidWorks, Ansys, Fusion 360, Onshape, AutoCAD, Inventor, Arduino IDE, Microsoft Office
- Programming: MATLAB, Python, HTML, CSS
- Fabrication Tools: CNC Mill, Waterjet, 3D Printing, Soldering, Miter Saw, Bandsaw
- Certifications: OSHA 10-Hour (General Industry), Autodesk Certified User: Inventor Imperial