Maryland Aerospace Career Launch @ Eastern Shore

Experiential Learning Opportunities Project Descriptions

Opportunity WFF ID # 3001 **Title: Wallops Safety Office Student**

Description: Support the Wallops Safety Office through analysis of Ground Safety and Flight Safety Hazards and Operations Support.

Preferred Majors: Occupational Safety and Health Management, Electrical Engineering, Mechanical Engineering, Aeronautics Engineering, Chemical Engineering, Civil Engineering, Project Management

Skills: Proficient in document editing, working in team environment, problem solving, operational environment, safety assessments, and confident briefing skills.

Hands-on/Computer Based/Both: Mix of Hands-on (observation) and Computer Based

Individual or Team Based/Both: Both

Technician/Research/Both: Engineer/Technician

Opportunity WFF ID# 5101 As of 29MAR2026, opportunity #5101 has been filled

Title: From Sketch to Stars! Building the Little Boards That Help Us See the Universe!

Description: Wallops Arc-Second Pointer (WASP) is more than a project; it is a living pipeline that transforms curiosity into hardware that performs under real mission constraints. At its heart are PCB design schematics that must be translated from expert drawings into clear, user-friendly artifacts (documents and layouts that anyone on the team can read, test, and trust.)

This work is the quiet, exacting craft that turns an engineer's sketch into the physical board that will control motors, stabilize instruments, and help reveal the universe. The thrill comes from knowing the boards you help refine could be part of systems NASA relies on to observe the cosmos.

The student who joins WASP will step into the full arc of product creation. They will learn to simplify and document schematics so that designs are not only correct but usable (a skill that separates good engineering from great engineering.) They will place components, consider test points, and think through manufacturability; they will prepare Gerbers and Bill of Materials (BOM), request quotes, and place orders with manufacturers so prototypes arrive on schedule.

Alongside these practical tasks, they will participate in hands-on testing and validation: bench checks, functional verification, and iterative debugging that turn assumptions into measured performance. Each

stage is an education in systems thinking, where a single change on a board can ripple through mechanical, electrical, and software subsystems.

Working on WASP is an opportunity to learn by doing in a way few experiential learning experiences allow. The experience teaches technical rigor (design-for-manufacture, test planning, and vendor communication) while also cultivating ownership and judgment. Students will see how careful documentation and thoughtful layout choices reduce risk, shorten iteration cycles, and increase reliability for mission-critical hardware. Beyond the technical skills, there is a deeper reward: the chance to contribute to instruments that enable discovery, to help build the mechanisms that point to the stars & black holes, spin motors, and translate human curiosity into data. That sense of purpose (knowing your work helps others see farther and understand more) changes how you approach every schematic, every test, and every order.

WASP is where meticulous engineering meets wonder. It asks for attention to detail and returns the rare satisfaction of impact: the boards you help make will be tested, trusted, and possibly flown. If you want to learn how an idea becomes a product that serves exploration (how a schematic becomes a PCB that controls a motor in space) this is the place to do it.

Will you bring your curiosity and craftsmanship to WASP and help turn engineering into discovery?

Preferred Majors: Electrical/Electronics Engineering

Skills: Electrical Engineering Fundamentals, PCB designs skills (preferred but not required since we can teach this skill to the right candidate), programming skills (but not required for the right candidate), attention to details, and eagerness to learn.

Hands-on/Computer Based/Both: Both

Individual or Team Based/Both: Both

Technician/Research/Both: Both

Opportunity WFF ID# 5102

Title: Launch Ops of 46.044 Koehler RockSat & Machine Shop Familiarity

Description: Contribute to Mission Reviews and Launch Ops for Sounding Rocket Program Office. Learn the basics of subtractive manufacturing, to include grinders and hand tools up to band saws and drill presses, on to 3 axis manual mills and CNC. Students can manufacture actual parts and check tolerances again GD&T.

Preferred Majors: Mechanical Engineering, Physics

Skills: Shop Work, Machine Shop, CAD, structural/dynamic analysis

Hands-on/Computer Based/Both: Hands On

Individual or Team Based/Both: Individual

Technician/Research/Both: Technician

Opportunity WFF ID# 5103 **Title**: CASBa Software Engineering

Description: Supporting the Balloon Program Office's Comprehensive Avionics System for Balloons (CASBa) project, flight, and ground software development/testing, as a computer engineer

Preferred Majors: Computer Science, Computer Engineering

Skills: Programming (C, C++, Ruby, Python), Linux

Hands-on/Computer Based/Both: Both

Individual or Team Based/Both: Both

Technician/Research/Both: Both

Opportunity WFF ID# 5104: Title: CASBa Electrical Engineering

Description: Supporting the Balloon Program Office's Comprehensive Avionics System for Balloons project as an electrical engineer.

Preferred Majors: Electrical Engineering, Computer Engineering, Engineering, Physics

Skills: Electronics development, Arduino, Programming

Hands-on/Computer Based/Both: Both

Individual or Team Based/Both: Both

Technician/Research/Both: Both

Opportunity WFF ID#8001 **Title: New Business Support**

As of 29MAR2026, opportunity #8001 has been filled

Description: The student will support NASA Wallops Flight Facility Suborbital and Special Orbital Projects Directorate and the Front Office Team supporting new business and promoting the aerospace ecosystem on the Eastern Shore of Maryland. The student will work with Wallops Leadership on scheduling/launch forecasting, budgeting, communicating with potential new business partners, and collaborating with regional stakeholders. This position will provide opportunities to gain and improve leadership, communication, and business management skills through meaningful work.

Preferred Majors: Business, Marketing, Communications

Skills: Public speaking, budgeting, communication, time management, critical thinking, project planning

Hands-on/Computer Based/Both: Both

Individual or Team Based/Both: Both

Technician/Research/Both: Research

Opportunity WFF ID#8021 As of 29MAR2026, opportunity #8021 is filled

Title: Heliophysics Strategic Technology Office (HESTO) Initiatives

Description: Participate in improving the website, and the project database. Participate in reviews with Principal Investigators. Participate in planning a symposium.

Preferred Majors: Electrical Engineering, Mechanical Engineering, Software Engineering, Space Science

Skills: PowerPoint, Excel, Database, Website

Hands-on/Computer Based/Both: Computer

Individual or Team Based/Both: Both

Technician/Research/Both: Research

Opportunity WFF ID# 8101

Title: Guidance, Navigation and Control Student

Description: Assist the sounding rocket GNC group with daily work efforts, especially the use of a new 2 axis rate table in the improved calibration of a spin stabilized IMU.

Preferred Majors: Math, Physics, Mech/Elec/Computer Engineering

Skills: data analysis, MATLAB, some hardware familiarity, set up, turn on, tear down

Hands-on/Computer Based/Both: both

Individual or Team Based/Both: individual intern working with a team

Technician/Research/Both: Both

Opportunity WFF ID# 8102

Title: Summer 2026 Mechanical Engineering Workforce Development Student

Description: Peraton is seeking a Summer 2026 Mechanical Engineering Workforce Development Student at our Wallops Island, VA location to support our NASA Sounding Rocket Operations Contract (NSROC) program. NSROC implements the work of the NASA Sounding Rocket program (NSRP) to fully design, build, integrate, test, and fly sounding rockets via expendable suborbital rockets to study a host of scientific objectives. Workforce Development Students at NSROC are given the opportunity to work

on flight hardware and flight designs including design, analysis, and testing, as well as apply theoretical knowledge to solve real world engineering problems.

Responsibilities:

- Apply theoretical knowledge relating to statics, dynamics, strengths of materials, and mechanical design in the design and analysis of flight and GSE structures as assigned by supervisor or mentor.
- Creation of manufacturing documents such as part and assembly drawings and Model Based Definition products utilizing SolidWorks.
- Work with Engineers, Technicians, and machinists in creating and updating technical documents.
- Coordinate with Production and Machine Shop personnel for fabrication of designed products.
- Maintain an engineering daily logbook and organize digital files for each project.
- Practice and learn competent technical professional behavior including memorandum writing, email and calendar usage via Outlook, and report weekly activities to supervisor via status reports.
- Present a capstone presentation at end of term to Senior Management.
- If required, assist with testing in the Environmental Testing Lab.
- Perform related duties as assigned.

Preferred Majors: Mechanical Engineering; Aerospace Engineering; Engineering; Physics

Skills: Solid modeling (especially Solidworks); Statics; Strength of materials; MATLAB; Finite Element Analysis Hands-on/Computer Based/Both: Mostly computer based

Individual or Team Based/Both: Mostly Individual

Technician/Research/Both: Neither

Opportunity ID# WFF 8201 **Title: Parachute Sample Testing**

Description: As part of the Balloon Research & Development Lab (BRDL), there is a task to do testing on several types of parachute samples from flown parachutes. This task would include first learning how to prepare samples, and how to utilize the Instron machine to produce reliable and repeatable results. Then the samples from the various missions will be tested and statistically examined.

Preferred Majors: STEM Based

Skills: Organized, pays attention to detail, critical thinking, comfortable with testing environment, including cryogenics.

Hands-on and Computer-based task- Both

Opportunity ID # WFF 8202 Balloon Program Office (BPO) Display Materials

Description: The Balloon Development and Research Lab (BRDL) and BPO regularly host tours and events to highlight the program's capabilities and activities. However, the materials around the lab and used at events are outdated. This task would include curating new materials for use to tout BPO and BRDL's great work and its impact to NASA and beyond. This likely would include selection of photos, videos, creating powerpoints, graphics, and choosing posters/materials to print.

Preferred Majors: Any

Skills: Organized, Able to work independently, Familiarity with Adobe Illustrator, Fluency with Microsoft products Hands-on and Computer-based task- will require looking through current outreach materials and sorting through media for selection

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Opportunity WFF ID#8401

Title: Wallops Range and Mission Management Workforce Development Student

Description: The Range and Mission Management Workforce Development Student will work in the NASA Wallops Flight Facility Range and Mission Management Office. The intern will have the opportunity to work alongside NASA project managers on a variety of launch operations and engineering development projects that span the project life cycle. Typical tasks would include but not be limited to schedule analysis, risk management, developing reports, budget estimation, and launch operations. This position will provide opportunities to gain and improve leadership, project management, planning, coordination, and communication skills through work as part of the Range team.

Preferred Majors: Undergraduate Engineering Degree

Skills: Problem Solving, Critical Thinking, Communication, Risk Management, Time Management, Project Planning & Execution, AI and Automation

Hands-on/Computer Based/Both: Both

Individual or Team Based/Both: Both

Technician/Research/Both: Technical

Opportunity WFF ID# 8402 As of 29MAR2026, opportunity #8402 is filled

Title: Airspace Surveillance /Airfield Operations / ATC Shadowing: Surveillance & Airport Operations Technician

Description: This project provides hands-on exposure to range airspace surveillance and airfield operations at NASA Wallops Flight Facility. The research student will work alongside the Wallops Range

Surveillance Team, gaining experience with radar and airspace awareness systems used to monitor local and downrange air traffic.

In addition to surveillance duties, the research student will have opportunities to support airfield operations, including aircraft ground handling and refueling activities. The position also includes time spent in the aircraft control tower during live operations, shadowing Air Traffic Control personnel to observe tower procedures and decision-making.

The research student will further participate in airspace surveillance activities supporting UAS missions conducted from Wallops Island, providing insight into integrated crewed and uncrewed airspace operations.

Preferred Majors: Aviation Science or related aviation-focused disciplines

Preferred Skills: Enrollment in a flight school or prior flight training experience, understanding of basic aviation and airspace fundamentals

Work Type: Both hands-on and computer-based, including the use of radar and surveillance systems

Position Structure - individual/team: Primarily an individual assignment with close coordination across multiple operational teams

Position Type: Technical

Opportunity WFF ID #8501

Title: S3PO SMD Database Development

Description: The Small Satellite and Special Projects Office (S3PO) is developing a database to support the NASA Science Mission Directorate's (SMD) H-FORT, Pioneers, and APRA CubeSat portfolios. The office is in the process of developing a new database system to capture critical information for our portfolio of over 30 missions spanning small satellites, ISS payloads, and balloon missions. The student would assist with bulk historical data transfer to the database and developing a solution for automating the ingestion of new incoming information.

Preferred Majors: Computer Science

Skills: Microsoft Office (Word, Excel, PowerPoint), software script coding, database scraping, Ai data processing

Hands-on/Computer Based/Both: Computer Based

Individual or Team Based/Both: Both

Technician/Research/Both: Both