

# Katie Herrington

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## EDUCATION

### M.S. Aerospace Engineering

Georgia Institute of Technology, Atlanta, GA

Graduating December 2025

3.45 GPA

### B.S.E., Aerospace Engineering: Astronautics

Arizona State University, Tempe, AZ

August 2020 - May 2024

4.0 GPA

## TECHNICAL SKILLS

**Design and Modeling Tools:** ANSYS, SOLIDWORKS, Siemens NX, Dewesoft, Fusion 360, Microsoft Office, KiCad, Teamcenter

**Shop Skills:** Cryogenic Handling, Torque/Krytox Trained, TIG/MIG Welding, Miter Saw, Soldering, Dremeling, 3D Printing

**Programming:** Python, MATLAB, Arduino

## PROFESSIONAL EXPERIENCE

### Relativity Space Fluids Intern – Long Beach, CA

May 2025 – Present

- Designed and sized Terran R stage 2 forward ECS diffusers to hit required mass flow rate as downstream pressure changes
- Performing modal and structural analysis on bracket-mounted diffuser assembly
- Selecting bolt pattern, bolts, and performing bolted joint analysis

### Stoke Space Technologies Fluids Intern – Kent, WA

May 2024 – August 2024

- Owned fill/drain line system design for LOX and LH2 from the outer vehicle QD panel to tanks on the second stage of Nova
- Owned main feedline system design for LOX and LH2 from vehicle tanks to turbopump inlets on the second stage of Nova
- Routed above fluid lines in vehicle and decided placement of six butterfly valves and their pneumatic actuators
- Performed ANSYS simulations on a variety of bellow types to analyze line stress and axial, lateral, and torsional deflections of bellows under thermal and pressure loading conditions, and informed turbopump placement on vehicle
- Selected and ordered final bellows informed by simulation
- Designed a sump to integrate LOX and LH2 feedlines and fill/drain lines in a vertically constrained space

### Blue Origin New Shepard Test Ops Intern – Kent, WA

May 2023 – August 2023

- Led and completed a test campaign to acceptance test solenoid valves for use on the New Shepard reaction control system
- Conducted an internal and external leakage test up to 3600 psi, a pull-in and drop out voltage test, and vibration testing
- Built test setups from given P&IDs and connected pressure transducers, flow meters, and a power supply to a DAQ
- Proof tested up to 4050 psi and conducted an internal and external leakage test of piloted check valves
- Qualification tested a flight ball latch system which included thermal cycling and blast testing

## PROJECTS

*YJSP at Georgia Tech:*

### Valve Design RE

- Designed a N.O. custom poppet valve with expected MEOP of 6ksi to be used as a vent valve for the next gen liquid rocket
- Balanced extensive requirements to create an in-line poppet valve that seals with a face seal and has min closing FoS of 1.4
- Incorporated spring return mechanism to insure safety at high operating pressure
- Took valve through CoDR and PDR with machining beginning in the fall

*Sun Devil Rocketry at ASU:*

### Propulsion Team Lead and President

May 2023 – May 2024

- Oversaw and managed all activities of a technical student organization with three rocket propulsion teams, three amateur rocketry teams, a K-12 outreach program, a Spaceport team, and over 100 members
- Lead a group of 15+ students in the design and model of ASU and SDR's first liquid rocket
- Designed this rocket to utilize a blow down system to meet the mass budget using ethanol and Lox as propellants
- Designed a combustion chamber/nozzle to produce 500 lbf of thrust with film cooling and an impinging injector

### Liquids/Test Ops Sub-Team:

January 2022 – May 2024

- Responsible engineer for hot fire of the first liquid rocket engine at ASU capable of 405 lbf of thrust and 5 sec burn
- Conducted liquid rocket engine fluid system tests with water to characterize mass flow rates at different tank pressures
- Designed and conducted hydrostatic tests of injector to test bolt strength and prevent separation of the injector plates
- Developed an ANSYS Fluent simulation to model heat transfer of ball valve, coupling, and servo motor in an electromechanical valve assembly for use in a liquid rocket engine
- Wrote a script to predict mass flow rate out of component testing apparatus for given tank pressure using head loss