Greer T. McDevitt

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EDUCATION

Purdue University | B.S. Aeronautical and Astronautical Engineering, Propulsion Specialization — West Lafayette, IN
Cumulative GPA: 3.45 | Dean's List & Semester Honors: Fall 2024, Spring 2025 — Expected May 2028
Relevant Coursework: Aeromechanics, Thermodynamics, Differential Equations, Programming Applications For Engineers

PROFESSIONAL EXPERIENCE

Shield AI — Frisco, TX
X-BAT Propulsion Engineering Co-op — Jan 2026 - Present

- Supporting propulsion system development for the X-BAT autonomous VTOL aircraft, contributing to roll-control and fuel system hardware used in prototype hopper vehicles.
- Designing and building a nitrogen fluid panel and test stand to characterize roll-control nozzle thrust and pressure losses through COTS components, validating sizing models, and providing thrust data for GNC algorithms, while establishing a reusable test infrastructure for rapid development.
- Communicating with external vendors to obtain component specifications, pricing, and lead-time estimates, incorporating selected hardware into CAD layouts on NX for test stand and vehicle subsystems.

Purdue Space Program: Liquid Rocket Team - Propulsion Subteam — West Lafayette, IN
Responsible Engineer, Phoenix Qualification Engine Injector — Aug 2024 - Present

- Leading a team of 10+ students to develop a 700 lbf LOX-centered heatsink pintle injector to validate the Condor test cell for hot-fire testing, supporting future PSP engine qualification, and advancing the team's propulsion capabilities.
- Developed a Python script to size injector orifice geometry and combustion chamber dimensions, optimizing TMR, LMR, and spray angle based on performance and manufacturability constraints for water flows and hot-fire testing.
- Utilized NX to design a pintle injector with a replaceable tip, developed for in-house CNC manufacturing from stainless steel and copper alloys to reduce cost and enable rapid iteration across tip geometries.
- Conducted a water flow testing campaign on aluminum and SLA resin injectors and tips to validate sizing code, refine manufacturing processes, and reduce post-processing time.
- Performed CFD simulations in ANSYS to evaluate pressure and velocity maldistribution in pintle fuel and film cooling manifolds for ethanol, optimizing geometries for uniform mass flow distribution.

Maurice J. Zucrow Laboratories — West Lafayette, IN
Undergraduate Research Assistant - Meyer Research Group — May 2025 - Dec 2025

- Designed a high-pressure cold-flow test stand for injector spray studies, enabling validation of droplet breakup CFD models and rapid testing of injector element prototype features before committing to full-scale injector manufacturing.
- Created detailed CAD layouts in Siemens NX for spray stand and fluid panels, incorporating proper mounting, routing, and safety hardware to ensure safe regulation of pressure even in loss-of-control scenarios.
- Developed P&ID schematics capable of interfacing with bulk supply lines and upstream panels at Zucrow Labs; Integrated the system with LabVIEW for TC/PT data acquisition, valve control, and automated test sequencing.
- Generated a detailed bill of materials to support procurement of fittings, instrumentation, and specialty components.
- Fabricated and installed custom high-pressure fluid GSE for RDE test stands, enabling reliable hot-fire operations.
- Supported setup and operation of 50+ hot-fire tests with a modular rotating detonation engine (RDE), configuring laser-based diagnostics and high-speed imaging systems to capture detonation behavior under varying test conditions.

ENGINEERING PROJECTS

Bechtel Innovation Design Center — West Lafayette, IN
Metal Shop / Printing & Prototyping Member — Aug 2024 - Present

- Trained in CNC machining (Haas VF-2/VF-4 mills, ST-20/Y lathes), waterjet cutting, and bandsaw operation.
- Trained in additive manufacturing techniques, including FDM, SLS, and SLA 3D printing and non-metal laser cutting.
- Work on personal and team projects involving both metal machining and 3D printing/prototyping to validate designs and improve DFAM and DFM.

SKILLS

Simulation & Analysis: ANSYS Fluent, MATLAB

Programming: Python, C, MATLAB

CAD/CAM: Onshape, Fusion 360, Siemens NX

Computer: Teamcenter, LabVIEW, Confluence, Visio