

# Greer T. McDevitt

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## EDUCATION

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**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

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### 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

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### 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

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**Simulation & Analysis:** ANSYS Fluent, MATLAB

**Programming:** Python, C, MATLAB

**CAD/CAM:** Onshape, Fusion 360, Siemens NX

**Computer:** Teamcenter, LabVIEW, Confluence, Visio