Joey Bail

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EDUCATION

Master of Science in Atmospheric Sciences — **Graduation Date: December 2025**
The University of Utah — **GPA: 4.00**

Master of Science in Mechanical Engineering — **Graduation Date: May 2023**
The University of Utah — **GPA: 4.00**

Bachelor of Science in Mechanical Engineering — **Graduation Date: December 2018**
Penn State University — **GPA: 3.61**

MECHANICAL ENGINEERING EXPERIENCE

Graduate Researcher - University of Utah — **August 2023 to Current**
Department of Atmospheric Sciences

- Designed and led construction of a remote instrumentation lab at Powder Mountain, including 30-ft inlet manifold, internal framing, external support structures, and mechanical integration of the inlet system.
- Installed and maintained atmospheric measurement instruments at remote field sites in the Wasatch Mountains, Ogden Valley, and Steamboat Ski Resort.
- Authored a master's thesis that identified chlorine emissions from desiccating saline lakebeds and simulated their potential atmospheric impacts across the U.S. using the GEOS-Chem chemistry model.

Graduate Researcher - University of Utah — **August 2021 to December 2023**
Department of Mechanical Engineering

- Authored a master's thesis on the mechanical failure of brain vessels by dissecting and mechanically testing middle cerebral arteries using custom test setups and imaging systems.
- Developed MATLAB scripts and an interactive application to automatically process and organize raw mechanical test data from LabView.
- Designed and fabricated a microscope fixture to position and secure cerebral arteries for precise wall-thickness measurements.

Mechanical Project Engineer - Carlisle Construction Materials — **January 2019 to May 2021**
Department of Central Engineering

- Responsible for complete capex projects, which included writing budget proposals and coordinating with OEM suppliers, millwrights, electricians, maintenance teams, engineers, operators, and plant leadership across facilities in OH, OR, UT, and the Netherlands.
- Implemented a $1.4M automation project replacing a hazardous six-operator process where long rubber slabs would leave a hot press and get manually sheared into 200-pound mats and stacked onto pallets.
- Implemented a $1.2M equipment upgrade for large-roll rubber flooring manufacturing, increasing throughput and reducing scrap.

ADDITIONAL ENGINEERING EXPERIENCE

Teaching Assistant – University of Utah — **August 2021 to May 2023**
Department of Mechanical Engineering

Undergraduate Researcher – Pennsylvania State University — **December 2017 to December 2018**
Department of Mechanical Engineering

Mechanical Engineer Intern - Carlisle Construction Materials — **Summer 2017 & 2018**
Department of Research and Development

ENGINEERING SKILLS & EXPERTISE

CAD Modeling: SolidWorks, Inventor, Fusion 360, GD&T, engineering drawings
Programming: Python, MATLAB, R, Fortran
Machining: DFM, collaboration with machinists, machining practices, prototyping, power tool operation