




ELI WOOLRIDGE

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EDUCATION

Mechanical engineering | Northern Arizona University

2022 – PRESENT

I am currently pursuing a bachelor's degree in mechanical engineering and a minor in electrical engineering at Northern Arizona University. I am entering my final semester on track and with a 3.61 GPA.

High School | Blue Ridge High School

2018 – 2022

I graduated high school with a 4.6 weighted GPA and a 3.7 unweighted GPA with a class ranking of 12 out of 163 or top 7th percentile. I was involved in multiple clubs, leadership positions, and many difficult classes including Honors and AP classes.



EXPERIENCE

Creative Commons Assistant | NAU Cline Library Makerlab

MAY 2024 - PRESENT

As a CCA I work in the Cline Library Makerlab where I am responsible for maintaining, troubleshooting, fixing, loaning, recommending, and assisting patrons in the use of our equipment. This includes twenty 3D printers, a Lazer cutter, a poster printer, sewing machines, laminators, Arduino kits, basic hand and power tools, and camera equipment. The greater part of our time is spent processing, slicing, and printing 3D print requests, as well as diagnosing and fixing the 3D printers when they break. We are also responsible for preparing any of our spaces, including the VR and recording studios for any classes or workshops.

User Experience Assistant | NAU Cline Library

AUGUST 2023 – MAY 2024

As a UXA At the Cline Library I am responsible for assisting students and community users who would like to use library resources. Because it is the most front facing position in the library, being a UXA requires a strong understanding of the library's policies and processes, as well as excellent troubleshooting skills, customer service etiquette, and the ability to think on your feet. On the day-to-day UXAs handle book loans and requests, patron questions, room bookings, basic research questions, computer loans, and charges on patron accounts.

Archery Instructor | Camp Grace

SUMMER 2023

I was an archery instructor at Camp Grace where I successfully managed up to 20 kids at a time all of which were between the ages of 9 to 13. During this time there were no injuries or lost arrows and I performed repairs on the bows when they broke. I also taught knots.

Day Councilor | Camp Grace

SUMMER 2022

I was a day councilor at Camp Grace, where my role was to identify struggling councilors and pick up some of their workload so that they could focus on managing their group of ten to twenty kids.

Solar Go Cart Club Head Electrician | BRHS Physics and Engineering Club

2020 – 2022

I was named head electrician for the Solar Go Cart club due to my commitment, reliability, and understanding of electrical systems. As a high school senior and the only person in the club who understood electrical systems, I also trained younger members on how to wire electrical systems to ensure that the completion of a cart remains possible after I graduate.

Rover Club Head of Drivetrain | BRHS Physics and Engineering Club

2018 – 2021

I was chosen to lead and organize the drivetrain committee for the Blueridge Nasa Rover Club due to my skills, ingenuity, and commitment to the club. I held this position for 4 years in which our team won best drivetrain once and was a runner up for the other two of the four years that we have attempted the competition.



SKILLS

- Leader
- Problem solver
- Solidworks
- Fusion 360
- OnShape
- ANSYS
- Excell
- Team player
- Fast learner
- Self-motivated
- Designer
- MATLAB & Simulink
- SimScale



TEAM PROJECTS AND ACTIVITIES

Below is a list of activities and clubs I have been involved in

- ✓ Direct Air Carbon Capture with Moisture Activated Sorbents: Fall 2025 – Spring 2026
 - For my undergraduate capstone I am part of a team of four that are building a high precision test bed to run fully automated experiments with novel moisture swing sorbents for Dr Jennifer Wade. The project requires a vacuum boiler, condenser, high precision sensors, a custom plc, and a GUI with live readouts and controls. The primary build was funded via a fifty-thousand-dollar grant from SRP and we have obtained an additional two-thousand-dollar grant from the NAU Green Fund to prototype and test 3D printed sorbent structures into the project.

- ✓ 2025 Marine Energy Competition: Fall 2024 – Spring 2025
 - I was part of NAUs team for the 2025 Marine energy competition where I played a major role in the design of a device to generate power from wave action. The device was a unique “inverted yoyo” point absorber tailored to undersea or remote. operations. It was internally considered a successful proof of concept with an average of 50 Wh of generation over six viable locations but it did not win the competition.
- ✓ Drive Train Team Leader for Physics and Engineering Club
 - 2018-2020 Competed in NASA’s *Human Exploration Rover Challenge*.
 - In 2020, our team won 1st place for STEM engagement and runner-up for best drive train technology out of 122 different high schools and universities from 22 different countries.
 - In 2019, our team won 1st place for the NASA *Human Exploration Rover Challenge*-Drive Train Technology Challenge Award while competing against 100 high schools and universities from 26 different countries.
- ✓ Solar Go Cart Club 2020-2022
 - Solar Go-Cart Team member-competes at the 2021 University of Arizona’s *Race for the Sun* competition. Our team won the 2021 Best Innovation Award for being the first go-cart in the history of this competition to incorporate a transmission.
- ✓ Rover Club 2018-2022
- ✓ Solid Works Associates CAD certification 2021
- ✓ Student Council 2021-2022
- ✓ Year Book Club 2021-2022
- ✓ National Honor Society 2019-2022
- ✓ Cross-Country Varsity Team 2018-2022
- ✓ Community Service:
 - COVID19 Pandemic- As a FAB Lab team member, we created over 1000 face shields, 500+ desk shields, 2000+ ear savers, and 5 optometry breath shields as well as 30 multi-vent manifolds, 62 swivel adapters, and prototyped a CPAP to ventilator conversion, a ventilator check valve and several different 3D printed PEEP valves for hospitals all over Arizona. These hospitals included the University of Arizona’s Medical Center, Banner Phoenix Pulmonary Group, Summit Hospital in Show Low, and Whiteriver Indian Hospital for the White Mountain Apache Tribe. We also donated these PPE supplies to our local first responders, police, town hall staff, school staff, and local dentists in Pinetop-Lakeside, Show Low and Whiteriver, Arizona.