

Alexandra Brister

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Education

Northern Arizona University (NAU) – Flagstaff, AZ

Aug. 2021 – May 2025

Steve Sanghi College of Engineering | Mechanical Engineering B.S.

Engineering/Research Experience

Formula SAE Capstone Project – Chassis Team – Flagstaff, AZ

Final Capstone Project

Aug. 2024 – present

- Designed and optimized the chassis for a Formula SAE race car, focusing on structural integrity, weight reduction, and manufacturability. Collaborated with suspension, aerodynamics, and powertrain teams to ensure chassis compatibility and performance. Assisted in the fabrication process, including welding, material selection, and fixture design. Conducted structural analysis using FEA to validate chassis performance under dynamic loading conditions. Ensured compliance with FSAE regulations and safety standards.

Stroke Patient Rehabilitation Research - Flagstaff, AZ

Research Assistant

Jan. 2024-present

- Working with a professor at NAU on designing a robot that assists recovering stroke patients with gaining mobility in their upper arm.
- Studying and working on designing a prototype that is cost-efficient and easily accessible.

Jack's Big Idea - Flagstaff, AZ

Competition Participant

Feb. 2022

- Studied, prototyped, and presented how to digitize aquaculture in developing nations using sustainable materials.
- Selected as the 2nd place Winner of NAU's Jack's Big Idea competition [2] to continue research and development of our prototype.

Gore Innovation Design - Flagstaff, AZ

Student

Nov. 2021

- Studied, designed, prototyped, and presented a compostable bin that can break down materials in homes in an NAU Engineering Design course.
- Presented the final project prototype to a representative of W.L. Gore & Associates.

Nexus Laboratories Inc. – Toronto, Ontario, Canada (virtual)

High School Research Assistant

May 2020 – Sep. 2020

- Collaborated with students worldwide to research and develop a Python code for modeling waste generation caused by supply chain networks.

Awards

- Lumberjack Full Tuition Scholarship* (total: \$40,000+), NAU, Fall 2021, Spring 2022, Fall 2022, Spring 2023, Fall 2023, Spring 2024, Fall 2024, Spring 2025
- Dean's List*, NAU, Fall 2021, Spring 2023, Fall 2023
- Jack's Big Idea 2nd Place* (total: \$1,000), NAU, Feb. 2022

Work Experience

Flagstaff Eye Care - Flagstaff, AZ

Ophthalmic Technician

July. 2024 – present

- Assisted optometrists in conducting comprehensive eye exams, including visual acuity tests, refractions, and tonometry.
- Operated diagnostic equipment such as OCT, fundus cameras, and autorefractors to gather patient data.
- Educated patients on contact lens care, pre-and post-operative procedures, and general eye health.
- Managed patient flow, maintained medical records, and ensured compliance with HIPAA regulations.
- Assisted in fitting and adjusting eyeglasses while providing excellent customer service in a clinical setting.

Other Skills

University Activities: Society of Women Engineers (2021-present), Out in Science, Technology, Engineering, and Mathematics (2021-present), American Society of Mechanical Engineers (2021-present)

Languages: English (Fluent), Mandarin Chinese (Intermediate), and Spanish (Novice)

Programming & Software: Solidworks (Intermediate), CAD (Novice), MATLAB (Limited working proficiency)

Operating System (OS): Macintosh OSX and Windows.