

NATALIE BRETTON

MECHANICAL ENGINEER & MASTERS STUDENT

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CAREER OBJECTIVE

I graduated in May 2025 with a B.S. in Mechanical Engineering and a minor in Biomedical Engineering from the University of Virginia (UVA). I currently live in Ann Arbor, MI and am finishing up the last few classes for my Master's degree in Mechanical Engineering online (UVA VEO). I am passionate about using the STEM skills I learn to solve problems, especially in the biomechanics and automotive fields. I love working with people and want my future career to benefit the lives of those around me!

EDUCATION AND CERTIFICATION

B.S. in Mechanical Engineering University of Virginia GPA: 3.77	May 2025
Minor in Biomedical Engineering University of Virginia	May 2025
Master of Engineering in Mechanical Engineering University of Virginia	Expected Dec 2025

RELEVANT WORK/EXPERIENCE

Mechanical Engineering Intern | UVA Center for Applied Biomechanics March 2024 – May 2025

- My main project aimed to collect numerical data on seatbelt use and seat positioning among pregnant drivers, as well as their experiences in hopes of improving automobile safety for all
- Other projects included cyclic compression testing of femurs, sled testing focused on ankle injury, and pedestrian dummy crash tests where I helped with Vicon motion capture and 3D scanning to reveal vehicle deformation

Distal Radius Fracture Reduction Capstone Project | UVA Mechanical Engineering 2024 – 2025

- This project focused on designing an affordable, accessible, and inclusive 3D-printed device to help train medical students on the process of reducing a Colles wrist fracture
- I led the communication and collaboration process of my team of 8 with an orthopedic surgeon and Dr. Jason Forman at the UVA Center for Applied Biomechanics

Undergraduate Research | UVA Link Lab Jan 2023 – Feb 2024

- I used fluid mechanics to study and monitor respiratory waveforms in humans and potentially prevent events like asthma attacks in vulnerable populations
- Demonstrated my work for groups of middle schoolers during the Society of Women Engineers visitation days

Summer Intern | NASA, Langley Jun 2021 - Aug 2021

- I expanded my knowledge of aerospace engineering and collaborated with others to design a customizable turbofan engine component in an aircraft design program called OpenVSP
- Presented my findings at the 2021 OpenVSP Workshop
- Continued my work after the internship and submitted a conference paper that I presented and published at the 2024 American Institute Aeronautics and Astronautics (AIAA) Aviation Forum in Las Vegas

OTHER WORK EXPERIENCE & ACTIVITIES

Graduate Student Board (GSB) | UVA

2025 - Present

- I was nominated and elected by my peers to be the Masters of Engineering (ME) representative for the Mechanical and Aerospace Engineering Graduate Student Board (MAE GSB)
- Facilitate collaboration between faculty, administration, and fellow student organizations
- We plan, budget, and host various events including technical career workshops, social gatherings, research symposiums, and community outreach programs

Gymnastics Coach | Classics Gymnastics Center

Sep 2023 – Jun 2025

- I was a competitive gymnast for a decade, balancing my schoolwork and managing my time effectively with practice up to 20 hours a week, and now I use my experience to coach
- I teach 6 -11 year old beginner girls classes and 3-6 year old boys and girls mini classes

Rodman Scholar | University of Virginia

2021- 2025

- Initiated contact and collaboration with a non-profit company, Sportable, that specializes in making sports accessible to those with disabilities
- Worked on an adaptive archery project involving a 3D printed device that allows those with limited hand dexterity to fire a bow
- Taught a class on bouldering to my fellow rodman engineers

Assistant to the CEO, Barista, and Café Specialist | Persnickety Crane Café

2022- 2024

- I was a barista who loved working rush shifts and making latte art while also taking orders, delivering food, and engaging with customers
- As assistant to the CEO, I was tasked with management tasks, marketing, and the planning and developing of café events

Mechanical Fabrication & Pit Crew Lead/AT Coordinator | Triple Helix Robotics

2017- 2021

- Acted as Assistive Technology Coordinator and helped modify and deliver toys and devices to those with disabilities in the Newport News Public School system
- Developed leadership and communication skills and learned how to collaborate effectively
- Applied both leadership and technical skills to lead my team to victory several times

HONORS AND AWARDS

Graduated with High Distinction

2025

Rodman Scholar | University of Virginia | Top 5% of incoming engineering class

2021- 2025

Dean's List | University of Virginia

2021- 2025

Technical Presenter and Conference Paper Publication | AIAA Aviation Forum

2024

Valedictorian | Menchville Highschool | GPA: 4.71 / 5

2021

Seal of Biliteracy in Spanish | Virginia Board of Education

2021

AIAA Roger W. Kahn Scholarship Recipient | \$10,000 + \$2,500 stipend

2021

AIAA Futures in Aerospace Scholarship | \$3000

2021

Southern Automotive Women Scholarship | \$2500

2021

FIRST Robotics Competition Dean's List Nominee

2020

RELEVANT COURSEWORK

Graduate Level | Forensic Engineering and Injury Causation Analysis | Continuum Mechanics | Theory of Elasticity | Advanced Mechatronics | Statistics for Engineers and Scientists (Using R) | Advanced Mechanics of Materials | Engineering Mathematics I | Green Engineering | Land Development Engineering

Undergrad Level | Biomechanics | Strengths of Materials | Physiology I & II | Statics | Dynamics | Mechatronics | Linear Algebra | Ordinary & Partial Differential Equations | Thermodynamics | Fluid Mechanics | Heat and Mass Transfer | Machine Elements & Fatigue Design

TECHNICAL SKILLS

CAD and 3D printing | Proficient in coding (R, Python, MATLAB, C++) | Fabrication and Machining (mill, lathe, band saw, drill press, welding, etc.) | Woodworking | Integrated Mechatronic Design | Debugging | Design Skills & Solution Ideation

SOFT SKILLS

Communication | Teamwork | Project Management | Problem Solving | Multitasking

EXTRACURRICULARS & HOBBIES

Rock climbing | Gymnastics | Coffee making & Drinking | Crocheting | Yoga | Slacklining | Painting/Drawing | Reading | Hiking, Traveling, & Being Outdoors