AMANDA WILLIAMS

awill399@vols.utk.edu • linkedin.com/in/amandawilliams8

EDUCATION

The University of Tennessee, Knoxville Graduation: May 2026
Bachelor of Science in Biomedical Engineering Cumulative GPA: 2.97/4.00

EXPERIENCE

Hodges Library Knoxville, Tennessee
Student Library Assistant June 2024 – Present

- Collaborate with the team to improve documentation, identify gaps, and refine procedures for efficient digital collection processing.
- Troubleshoot digitization and data entry issues independently, contributing to the smooth workflow of digital collection management.

Tickle College of Engineering Knoxville, Tennessee
Undergraduate Research Assistant June 2024 – August 2024

- Learned to configure and optimize experimental setups, including varying drop sizes, needle diameters, and flow velocities in a vertical wind tunnel to achieve desired data to answer the question of understanding aerosol scavenging by raindrops and their significance in climate modeling and pollution control.
- Proficient in employing advanced imaging techniques and computational tools to measure and interpret fluid dynamics, using Reynolds and modified Strouhal numbers to describe oscillatory behaviors accurately.

PROJECTS

Reimagining DBS Electrodes Knoxville, Tennessee
Group Proposal October 2024 – December 2024

- Proposed a porous polymer sheath design to enhance tissue integration, reduce micromotion-induced irritation, and stabilize the electrode-tissue interface, extending device efficacy beyond the current 5-10 year lifespan.
- Conducted a comprehensive literature review on neurological conditions like Parkinson's and Alzheimer's diseases, emphasizing the limitations of current DBS devices due to glial scarring and chronic inflammation.

Prosthetic Leg Knoxville, Tennessee
Phase I and Phase II Development October 2023 – December 2023

- Collaborated with a team to design and prototype a functional prosthetic leg using limited materials, iteratively improving upon the design to meet key performance criteria.
- Developed and tested Phase I prototype using a modular "puzzle piece" approach, creating a rigid square-like structure secured with duct tape. Achieved basic goals of supporting weight, though challenges with comfort and structural integrity were identified.
- Enhanced Phase II prototype by incorporating a triangular design with internal support shelves, sponge padding for smoother landings, and a Velcro strap for secure attachment. Ensured the prosthetic could support more weight, enable walking, and provide improved comfort.

ACTIVITIES

Chi Omega Knoxville, Tennessee
Member August 2022 – Present
Women in Engineering Knoxville, Tennessee
Member August 2022 – Present
Biomedical Engineering Society Knoxville, Tennessee
Member/Mentor August 2022 – Present

TECHNICAL SKILLS

Programming languages: MATLAB
Interfaces: Windows, Google Suite

HONORS AND AWARDS

Advanced Undergraduate Research Activity (AURA)