Tessa Lytle, PhD

PhD in Mechanical Engineering

Why did you choose to study at WPI?

I attended WPI as an undergraduate student, completing the BS/MS program in mechanical engineering in the spring of 2023. I had not originally intended to continue to a PhD or do research, but throughout my time at WPI, I met several professors who encouraged me to consider research and later the PhD program. Once I decided that I wanted to pursue a PhD, I knew I wanted to stay at WPI with the people and connections that I had cultivated throughout my undergraduate years.

How are you involved with the WPI community?

During my undergrad at WPI, I was extremely involved in clubs. I was president of Engineers Without Borders and a member of American Society of Mechanical Engineers, Pi Tau Sigma (Mechanical Engineering Honor Society), and Order of Omega (Greek Honor Society).

Now that I am focused on research, I am less involved in extra-curriculars but still maintain some of my interests. I am still greatly involved with Engineers Without Borders where I am now a mentor who meets with the club regularly to discuss their current project and provide guidance based on my experiences. As a member of Engineers Without Borders as an undergrad, I enjoyed the hands-on problem solving, especially when we worked with an Ecuadorian community to improve their quality and quantity of

Hometown
Monroe, NY

Mentor/Advisor

- Zhu Mao
- Pradeep Radhakrishnan
- Patricia Howe
- Barbara Furhman
- Statia Canning

Achievements

- Research paper presented at the 2024 International Modal Analysis Conference
- WPI Heald Brothers Scholar 2022
- WPI Allan Glazer '47 Memorial Award Recipient 2022

water. As a mentor, I enjoy staying involved with the club and providing information that I wish I had access to during my time as a club member. It is very exciting to see the club grow and improve beyond my leadership.

I also play trombone and euphonium in the orchestra pit for the VOX musicals (WPI student musical theater productions). I have played in the '23 fall production of *Something Rotten*, the '23 spring production of *Cabaret of Horrors*, and the '22 fall production of *Urinetown*. The pit is entirely student run, with a wide range of student backgrounds, so I have enjoyed meeting people who I would not normally interact with in my degree program and working together to create great music.

As an undergrad, I was part of the undergraduate student advisory committee for John McNeill, Dean of Engineering. I have continued that work and am now an active member of the graduate student advisory committee. This has been a great opportunity for me to meet diverse students in engineering and share feedback on my WPI experience with the Dean of Engineering.

What's your favorite thing about WPI?

I love the people. Between the students and faculty, I found an amazing group of people who support me both academically and personally. I found friends through different clubs who I can study with or simply hang out with who genuinely care about and support me.

Do you have a faculty or staff mentor?

Prof Zhu Mao is my PhD advisor. I met him during the third year of my undergraduate degree after taking his controls course. At this time, I was considering pursuing research, so I started discussing it with different professors and touring research labs on campus. I found Prof. Mao's research in structural health monitoring and dynamics very interesting and wanted to work with him. I started as a summer research assistant in 2022 and now work in his lab as a PhD student. He has been extremely supportive and positive throughout my busy adventures. He has

- Dearborn Foundation Scholar 2022
- Competed domestically and abroad on the 30-time national champion USA Synchronized Ice Skating Team The Haydenettes
- Two-time US Synchronized Skating Champion
- Finished 5th at the 2022 and 2023 World Synchronized Skating Championships

Interests

- Board games
- Yoga
- Rock Climbing
- Reading
- Figure Skating - Team USA Alumni

Campus Activities

- Engineers Without Borders
- Orchestra musician for student musical theater productions on campus (VOX)
- Graduate Student Advisory Committee for the School of Engineering

> **“I found an amazing group of people who support me both academically and personally.”**

guided me academically with enough flexibility to find research areas that I am truly passionate about. Whenever I am feeling overwhelmed, he has been a positive voice reminding me of all that I have already accomplished and showing me that not everything needs to be perfect. He has encouraged me to pursue challenges without the fear of failure.

Throughout my undergraduate years at WPI, my key mentor was Prof. Pradeep Radhakrishnan. I took three courses with him (Engineering Design, Dynamics, and Mechatronics), worked with him as a Graduate Learning Assistant for his Mechatronics and Advanced Design courses, and completed my Major Qualifying Project (MQP) under his advisement. He continually pushed me to challenge myself and improve my work. His courses had hands-on experience and assignments that built the foundation of my engineering thought process. My MQP, a 3D printed humanoid robot, utilized my strong mechanical engineering skillset while also encouraging me to learn new skills related to robotics and computer science. Prof. Pradeep was a major influence on my success throughout my undergraduate degree and increased my drive for producing excellent work and accepting new challenges.

The Mechanical & Materials Engineering (MME) department staff, Patricia Howe, Barbara Furhman, and Statia Canning have also been huge supporters throughout my time at WPI. As an undergrad, I worked as an office assistant in the MME department and met staff who have continually supported me in all of my WPI activities. They not only helped me academically when I had questions about what courses to choose or issues printing my assignments, they also attended my jazz concerts, musicals, and club fundraisers.

What projects are you working on?

I am currently researching vibrational dynamics and motion magnification using cameras to identify and extract motion in structures, like a vibrating cantilever beam. I am also presenting a paper at the 2024 International Modal Analysis Conference based upon my research I completed at Los Alamos National

Laboratory related to evaluating vibration controller performance in virtual and hardware tests for multi-axis vibration testing.

8am	10am	11am
Start my day, study at my apartment, and make sure I have all of my materials prepared to drive to campus	Lab group meeting at Sagamore to discuss everyone's current progress and plans for the week	Pit rehearsal for the WPI VOX musical

Read More about Tessa

Tessa discusses juggling competitive skating with challenging academics during her undergraduate years.

> CHECK OUT HER FEATURE STORY IN THE UNIVERSITY MAGAZINE, THE WPI JOURNAL

> READ ABOUT HER TIME AS AN UNDERGRADUATE

Discover more about WPI students

Check out other Student Voices here.