

# Evan R. Tulsy

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## EDUCATION

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### Syracuse University, Syracuse, NY

Ph.D., Mechanical Engineering, Expected Class of 2028, Current GPA: 3.9/4.0

- Advisor: Dr. Victor Duenas

M.S., Mechanical Engineering, Expected Class of 2025, Current GPA: 3.9/4.0

B.S., Mechanical Engineering, May 2024, GPA: 3.7/4.0

- Magna Cum Laude
- Renee Crown Honors Distinction
- Thesis Topic: Targeting the Soleus and Quadriceps Muscles Using Powered Robotic Rehabilitation Devices and Neuromuscular Control.

## RESEARCH EXPERIENCE

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### Syracuse University, Bionics, Systems, and Controls Laboratory

#### Research Assistant

2021 - Present

*My research uses control methods integrating powered machines and neuromuscular control techniques to address inherent nonlinear effects in the hybrid machines, compensate for human input, and mitigate muscle fatigue.*

- Development of an exoskeleton and bicycle for spinal cord injury rehabilitation solutions.
- Incorporation of EMG data to a wearable ankle orthosis device for novel human in loop tracking objectives.
- Collective work with peers in Research Experience for Undergraduates program, (REU) and Syracuse Office for Undergraduates Research and Creative Engagement scholarship (SOURCE).

### Microsoft, Redmond, WA

#### Capstone Project

Fall 2023- Spring 2024

- Meet increased power demands using a new water-cooled system for a bifacial chip in high-powered servers.
- Developed a prototype to meet the thermal and mechanical requirements of the heat sink system.
- Enhanced skills in 3D modeling and finite element analysis (Ansys) to meet client needs.

### Constellation, Oswego, NJ

#### Nuclear Power Plant Engineer Intern

Summer 2023

- Participated in various cross departmental activities, training, and exercises.
- Developed knowledge of nuclear plant operations, nuclear industry standards, and clean energy initiatives.
- Led and prepared two change modifications apart of operational fleet initiative that will be implemented during the 2024 outage.

- Performed quality control tasks on nearly 200 engineering change requests.

## PUBLICATIONS

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1. **E. Tulskey**, N. Rubino, J. Carter, A. Thompson, V. H. Duenas “Extremum Seeking Control of a Robotic Ankle-Foot Orthosis Targeting the Soleus Muscle Activation During Walking”, IEEE Conference on Controls Technology and Application, 2024.
2. **E. Tulskey**, J. Casas, C. Chang, S. Brose, V. H. Duenas “Influence of vibration stimuli applied on the quadriceps femoris muscles during functional electrical stimulation induced cycling,” Artif. Organs, Vol. 46, No. 3, E77-E81, March 2022, doi.org/10.1111/aor.14132.
3. **E. Tulskey**, J. Casas, C. Chang, S. Brose, V. H. Duenas “Influence of Vibration Stimuli Applied on the Quadriceps Femoris Muscle during Functional Electrical Stimulation Induced Cycling”, International Functional Electrical Stimulation Society (IFESS) Conf., 2021.

## PRESENTATIONS

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1. **“Targeting the Soleus and Quadriceps Muscles Using Powered Robotic Rehabilitation Devices and Neuromuscular Control”** Thesis Presentation, Syracuse University, April 22, 2024
2. **“Bifacial Cold Plates for High Powered Servers”** Poster and Presentation, Syracuse University and Microsoft, April 20, 2024
3. **“Bifacial Cold Plates for High Powered Servers”** Presentation, Syracuse University and Microsoft, December 19, 2023
4. **“EMG Tracking Controller with Integral Anti-Windup Compensation in Motorized FES Cycling Experiments”** Poster Presentation, SOURCE Symposium, Syracuse University, April 10, 2023
5. **“Influence of Vibration Stimuli Applied on the Quadriceps Femoris Muscle during Functional Electrical Stimulation Induced Cycling”** Presentation, International Functional Electrical Stimulation Society (IFESS) Conference, September 17, 2022
6. **“Why are Aspirin and Acetaminophen Dosed Primarily as Solids?”** Presentation, Nokia Bell Labs North Jersey Science Fair, March 9, 2019

## HONORS & AWARDS

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Richard A. Bernard Scholar	2024
Best Thesis in the Natural Sciences & Engineering Award ( <b>\$1000</b> )	2024
Honors Crown Scholar ( <b>\$2641</b> ), Syracuse University	2023
SOURCE Scholar ( <b>\$5000</b> ), Syracuse University	2022
Research Experience for Undergraduates ( <b>\$3200</b> ), Syracuse University	2021
Maxwell Citizenship Scholarship Competition Finalist, Syracuse University	2020
President’s Award for Educational Excellence	2020
Yale Science and Engineering Award	2018

## COMMUNITY SERVICE & OUTREACH

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Syracuse University, College of Eng. and Comp. Sci. Undergraduate Admissions Student Recruiter	2022 - 2024
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- Represented Syracuse University in student led panels to undergraduate applicants about student life and academic opportunities.

### **Hendricks Chapel Quilters (HCQ), Syracuse, NY**

#### **Volunteer**

Fall 2023

- Fabricated a children's (40"x60") quilt for the local Syracuse refugee population.

### **TECHNICAL SKILLS**

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- Hardware: rapid prototyping using 3D printers, machine shop tools (mill & lathe).
- Software: CAD (Solidworks), Programming (C++, Matlab/Simulink, Arduino), LaTeX, Ansys, Microsoft Office.

### **REFERENCES**

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