

Henry Thode

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Education

Bachelor of Engineering Co-op (BEng) | Chemical Engineering

2024 – 2029

McMaster University

- Enrolled in level 2 of McMaster University's Chemical Engineering Co-op Program, eligible for 4-month co-op placement starting May 2026
- Awarded Provost Honor Medal for perfect 4.0/4.0 GPA for first year course achievement
- Relevant courses: Numerical Methods & Computing for Chemical Engineers, Fluid Mechanics, Statistical Methods for Material Engineers, Chemical Engineering Principles I & II

Experience

Biochemistry Research Assistant | McMaster University Department of Biology

May – Aug 2025

- Conducted DNA extraction and PCR amplification on over 150 *Arabidopsis thaliana* samples to study gene expression under drought stress
- Utilized sterile technique and microbial culturing to isolate and identify 12 novel rhizobacteria strains with potential plant growth-promoting properties
- Analyzed chlorophyll fluorescence data using Python and Excel, improving accuracy of photosynthetic efficiency measurements
- Co-authored a poster presented at the McMaster Research Fair, summarizing findings on microbial-plant interactions under abiotic stress and demonstrating communication skills

Extracurricular Activities

K+ Device Team Member | McMaster University Medical Device Team

Sept 2023 – Present

- Developed a wearable electrochemical sensor for real-time potassium ion detection in sweat, aimed at early detection of hypokalemia in cardiac patients
- Fabricated ion-selective electrodes using valinomycin-doped PVC membranes, achieving a detection limit of 0.5 mM
- Collaborated with interdisciplinary team members on project development, demonstrating communication, adaptability and teamwork skills

Arduino Robot | McMaster University Sumobot Competition

Sept 2024 – Jan 2025

- Constructed a 15x15x10 cm mini robot that is designed to push other robots outside an arena
- Programmed C++ movement algorithms based on data coming from an infrared sensor
- Employed Autodesk Inventor to create and 3D print CAD models, improving robot durability

Skills

Software: Python, C++, MATLAB, Excel, MS Office, GSuite, Logger Pro, Autodesk Inventor

Lab Skills: Temperature & pH sensors, PCR, hydrogels

Certifications: CPR & Standard First-Aid Certification (Level C), Completed WHMIS & Bio Safety training, G-class driver's license