

Bruce Banner

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Highlight of Qualifications

- Enrolled in level 4 of 4.5-year joint technology & management program at McMaster University and Mohawk College, eligible for 4-month co-op placement starting May 2029
- Concurrently completing requirements for an advanced diploma in biotechnology and a certificate in business management from Mohawk College
- Proven experience in process engineering and project management through industry internships and personal projects

Education

Bachelor of Technology Co-op | *Biotechnology (with Business Management)* **2024 – 2029**
McMaster University

Work Experience

R&D Engineer Intern | Mississauga, ON **May – Dec 2026**
Baylis Medical

- Designed and developed innovative single-use medical devices, contributing to improved patient care and compliance with FDA and ISO standards
- Executed hypothesis-driven experiments and statistical analyses (Python, pandas, NumPy, Matplotlib), accelerating design validation timelines by 8%
- Collaborated with cross-functional teams (QA, Regulatory, Manufacturing) to align project milestones with long- and short-term goals, showing teamwork and project management abilities in laboratory settings
- Independently managed engineering workstreams, adapting plans to evolving project needs and demonstrating strong initiative

Chemical Engineering Co-op | Skillman, NJ **May – Aug 2025**
Neutrogena

- Optimized emulsion stability in 3 new moisturizer formulations by adjusting surfactant ratios
- Conducted rheological testing and pH analysis on over 60 product batches, ensuring compliance with Health Canada cosmetic regulations
- Scaled up lab formulations to 50L pilot batches, working with production to reduce mixing time by 15%
- Collaborated with other team members to optimize production of certain serum mixtures, highlighting teamwork and communication abilities

Barista | North York, ON

May – Aug 2024

Coco Bubble Tea

- Managed high volumes of customer orders during peak hours, demonstrating time management, attention to detail, and communication skills
- Worked closely with coworkers to maintain flow and efficiency, highlighting teamwork ability
- Resolved customer complaints and difficult situations, showing professionalism and problem-solving skills in real-time situations

Projects

Bioprocess Optimisation in Yeast-Based Brewing Systems

Nov 2024 – Jan 2025

- Designed and modeled a batch fermentation system for recreational beer production using brewer's yeast, applying Monod kinetics and mass balance equations to simulate sugar consumption
- Conducted heat and mass transfer analysis to optimize temperature control and CO₂ removal in the bioreactor
- Utilized MATLAB and Aspen Plus to simulate fermentation dynamics and perform sensitivity analysis on process variables
- Implemented optimized system using common brewing tools, producing high-quality beer

Extracurricular Activities

Editorial Team Member | Meducator Health Sciences Journal

Sept 2025 – Apr 2027

McMaster University

- Reviewed and edited scholarly submissions for clarity, accuracy, and adherence to publication standards, ensuring high-quality content in health sciences
- Collaborated with authors and peer reviewers to refine manuscripts and uphold academic integrity, demonstrating attention-to-detail and communication skills
- Represented Meducator at 5 on-campus events, highlighting communication and professional marketing abilities to expand awareness of the organization's goals and available products

Skills

Software | Python, Pandas, NumPy, Matplotlib, Seaborn, MATLAB, Aspen Plus, SolidWorks, Excel, MS Office

Lab Skills | PCR, Gel Electrophoresis, Spectrometers, Microscopy, Distillation at Total Reflux, Flow Cytometry, Autoclaves, Western Blotting, Micro-pipetting

Certifications | WHMIS Training, BSL-2, Standard First Aid, G-Class Driver's License