

# Mike DeGroot

(647) 012 – 3456 | degrootm@mcmaster.ca | linkedin.com/degroot\_biotech

## Education

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### Bachelor of Technology Co-op (BTech) | *Biotechnology*

2024 – 2029

*McMaster University*

- Enrolled in level 3 of 4.5-year joint technology & management program at McMaster University and Mohawk College, eligible for 4- or 8-month co-op placement starting Jan 2027
- Concurrently completing requirements for an advanced diploma in biotechnology and a certificate in business management from Mohawk College
- Relevant courses: Chemical Engineering Concepts, Industrial Biotechnology, Pharmacology, Genetics

## Research Experience

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### Biomaterials Lab Assistant | *McMaster Ocular Research Lab, Hamilton ON*

May – Aug 2025

- Assisted in designing and setting up experiments to test new drug formulations
- Collected and analyzed experimental data using Excel, leading to significant findings in drug efficacy
- Utilized confocal microscopy to observe drug interactions with eye tissues
- Contributed to the development and testing of 20 new eye drop and contact lens formulations, enhancing drug delivery effectiveness by 15%
- Maintained detailed records of experiments and results, demonstrating organizational skills and attention to detail

## Extracurricular Activities

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### Wet Lab Member | *McMaster University iGEM Chapter*

Oct 2025 – Present

- Collaborated with a multidisciplinary team of 30 students to design and execute experiments aimed at engineering bacteria to detect sepsis biomarkers
- Performed DNA extraction, PCR amplification, and plasmid construction to create genetically modified bacterial strains, demonstrating prowess in laboratory environments
- Expressed and purified recombinant proteins using bacterial expression systems, followed by SDS-PAGE and Western blot analysis
- Analyzed 1000+ experimental data points using software tools such as Python (Pandas, NumPy, Matplotlib, Seaborn) and Excel to interpret results and optimize protocols
- Worked closely with advisors and team members to troubleshoot experiments and refine project goals, highlighting teamwork and communication abilities within laboratory settings

## Skills

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**Software:** Python, Pandas, NumPy, Matplotlib, Seaborn, MATLAB, 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