

# Julia Patterson

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[jpatterson288.github.io/Julia-Patterson/](https://github.com/jpatterson288) | BASc Chemical Engineering

## SKILLS

Python, AspenPlus, 3D modelling, P&IDs, experimental design, LaTeX, MS Excel VBA, HTML/CSS, website design, leadership, technical writing

## EXPERIENCE

### Research Intern

*Emnandi Bioplastics × ASTUTE Centre of Excellence*

Feb 2024 - June 2024

*Swansea, Wales*

- Conducted 50+ annealed polymer ageing tests such as DSC, MFI, tensile tests, and impact tests on recycled PLA to determine mechanical properties for automotive applications
- Aided with experimental design through initial an initial literature review on PLA properties

### Research Assistant for Adhesion Testing of Clay

*Technische Universität Hamburg*

May 2023 - Dec 2023

*Hamburg, Germany*

- Designed experimental test parameters and conducted 150+ geotechnical laboratory tests to deduce the effects of salinity on clay and the adhesion properties in geotechnical engineering applications such as tunnelling
- Assessed experimental results from multiple softwares and LiDAR point clouds using Python
- Performed literature reviews on the novel research of salinity effects on clay for design criterion

### Project Engineering Co-op Student

*Zeton Inc.*

Sept 2022 - Dec 2022

*Burlington, ON*

- Identified and inspected 250+ instruments, valves, and equipment using P&IDs and 3D models and VBA for automation to significantly reduce labour time
- Coordinated with vendors and created purchase orders and BOMs using Microsoft Dynamics ensuring correct and efficient delivery

### Engineering Co-op Student

*Environment and Climate Change Canada*

Jan 2022 - Apr 2022

*Gatineau, QC*

- Utilized technical writing skills to prepare 10+ internal guidance documents and SOPs for implementation of the QA program, including verification and validation, of the Clean Fuel Regulations
- Created detailed presentations to successfully explain the complexity of the regulations to stakeholders

### Student Research Assistant

*SNOLAB - SNO+ Experiment*

May 2021 - Aug 2021

*Sudbury, ON*

- Aided with the commissioning of 2 underground chemical plants by administering controls testing and ensuring the project stayed on schedule
- Collaborated with R&D team conducting QA testing and assisting isolation of an impurity in one of the chemical compounds

## PROJECTS

### Solar Desalination | Mechanical design, Python, AutoDesk Fusion 360

*University of Waterloo, Fourth Year design project*

June 2024 - March 2025

*Waterloo, ON*

- Mechanical and materials co-lead in the development and design of a novel modular scale solar still for residents of Bangladesh
- Administrative and organizational lead regarding budgeting, scheduling of meetings, and overall communication with advisors
- Competed in campus finals of Map the System Canada, placing top 5 of 45 applicants

## EDUCATION

### Candidate for BASc in Chemical Engineering

*University of Waterloo*

Sept 2020 - Apr 2025

*Waterloo, ON*

- Keith Carr Memorial Award recipient 2023 for leadership in the university and community
- Engineering Society President's Award recipient Fall 2021, Spring 2022 for valuable assistance to the activities of the Society

### Chemical engineering exchange student

*Swansea University*

Jan 2024 - June 2024

*Wales, United Kingdom*

- Tree planting society, mountaineering and climbing society, windsurfing society, hiking society, stand-up paddleboard society

## INTERESTS

- Speed skating - Competed at Provincial and National levels from 2012-2018, now coaching
- Half marathon and marathon runner - participating in international races
- Travelling
- Climbing