

Julia Patterson

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University of Waterloo - BASc Chemical Engineering

SKILLS

Python, AspenPlus, 3D modelling, P&IDs, experimental design, LaTeX, VBA, 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-Harburg

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