

Jordyn Knock

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EDUCATION

University of British Columbia

Bachelor of Applied Science in Chemical and Biological Engineering, Co-op

Vancouver, BC

Sept. 2023 – April 2028

TECHNICAL SKILLS

Bioprocess & Lab Skills: Aseptic Technique, Fermentation Monitoring (Batch & Fed-Batch), Bioreactor Operation, pH and DO Control, Buffer Preparation, Biochemical Assays, Lab Safety & Documentation

Process Engineering: Process Optimization, Process Flow Diagrams (PFDs), Process Safety, Material & Energy Balances, Heat Transfer & Fluid Mechanics

Data Analysis & Visualization: Excel, Pandas, NumPy, Matplotlib, Excel charts

Computational Tools & Programming: Python, MATLAB, G-Code, C, Git, GitHub, LaTeX, Quality Management Systems (QMS)

Testing & Failure Analysis: Root Cause Analysis, Failure Analysis, Non-Destructive Testing (X-ray, Cross-Sectioning), Risk Assessment, Equipment Calibration

Mechanical Design & Prototyping: CAD (SolidWorks, Fusion 360), 3D Modeling, Rapid Prototyping, Engineering Drawings, Product Design Optimization

EXPERIENCE

BioProcess Technician Co-op

LuxBio

May 2025 – Present

Vancouver, BC

- Refined and automated batch and fed-batch fermentation workflows using Python, optimizing process control through pH and DO sensor integration and improving real-time monitoring efficiency.
- Monitored critical fermentation parameters (pH, DO, temperature) and maintained detailed lab documentation, while collaborating across cross-functional teams to ensure safe handling of biological materials and consistent process improvement.

Research and Development Intern

MOLLI Surgical, Now a part of Stryker

May 2024 – August 2024

Toronto, ON

- Led an investigation into Wand Error 100, diagnosing sensor malfunctions through non-destructive and destructive testing, which resulted in identifying key issues related to electrical connections.
- Collaborated on the MOLLI Accuracy Robot Project, leading the software as well as optimized product assembly models using Fusion 360 and Arena for quality management.

Engineering Intern

MOLLI Surgical

July 2023 – August 2023

Toronto, ON

- Conducted Adhesive Tests, writing detailed test protocols and reports.
- Reverse engineered a Seal Tester and developed a large-scale Burn-In test, sourcing electrical components and creating a PCB prototype for testing.

RELEVANT PROJECTS

Oxalic Acid Production Rroject

Sept. 2024 – Dec. 2024

- Designed and optimized a chemical process for oxalic acid production, achieving a projected annual yield of 50,000 tonnes with 99.9% purity by oxidizing carbohydrates with nitric acid.
- Developed an energy-efficient separation strategy, utilizing crystallization and centrifugation to recover oxalic acid while reducing operational costs by recycling nitric acid and minimizing cooling water consumption.
- Implemented process control strategies, including temperature and liquid level regulation in the reactor, ensuring safe operation and optimal reaction conditions while preventing over-pressurization.

Wand Error 100 Investigation

May 2024 – Aug. 2024

- Led a root cause investigation for the Wand Error 100, a defect affecting 9% of released wands, using non-destructive testing (X-ray, cross-sectioning, electrical testing) to identify failure points and propose solutions.
- Developed and tested sensor encapsulation strategies, reducing component failures and enhancing product reliability.

UBC Rapid

September 2024 – Present

Web Development Subteam Member

Vancouver, BC

- Fixed bugs and optimized code in HTML, CSS, and React.js to improve website functionality and user experience.
- Collaborated with team members using GitHub for version control and ZenHub for project management to streamline development workflows.

September 2023 – Present

Filament Recycler SubTeam Member (Mechanical)

- Collaborated on designing and building a device to recycle and respool scrap filament from 3D prints, focusing on material research for the hopper.
- Assisted in troubleshooting and repairing 3D printers, resolving technical and electrical issues.