PhD Student
in Computational Systems Biology

This fully funded graduate student position is part of a collaborative multi-group project exploring enzyme and microbe-based bioprocesses to enable a circular plastics economy. The student will have an opportunity to build on existing or develop new expertise in the following areas: optimization, machine learning, data science.

Research Project: apply and develop mathematical optimization models, metabolic network models, and machine learning (ML) models (e.g., graph neural networks) for solving challenging problems in health (e.g., drug discovery, protein-drug interactions) and environmental sustainability (e.g., enzyme engineering, resource management). Explore and analyze relevant data from industry, municipal, and academic partners for integration into these models. Write and submit peer-reviewed publications and present at international conferences.

Required Qualifications: Master's degree or equivalent degree in chemical engineering, computer science or a related field, including interdisciplinary work, or equivalent practical experience.

Preferred Qualifications:

- Research experience in machine learning (ML), genome-scale metabolic modeling, ML+Health, ML+sustainability, or related interdisciplinary research topics.
- Track record of peer-reviewed publications and presentations at international research conferences.
- Experience working with tools and techniques appropriate for development and/or application of ML methods, optimization, code development, statistical analyses and qualitative research.
- Coding skills (e.g., Python, C++, Fortran, etc.)
- Good communication skills and an interest in collaborating with a multi-disciplinary team of scientists and engineers.

Employment Equity: Queen's University invites applications from all qualified individuals. We are committed to employment equity and diversity in the workplace and welcome applications from women, visible minorities, Aboriginal peoples, persons with disabilities, and LGBTQ2+ persons. We have a track record of supporting all our employees, including our Accommodation in the Workplace Policy, and will provide support in recruitment processes for applicants with accessibility needs. If you require accommodation during the application process, please contact Dr. Laurence Yang at laurence.yang@queensu.ca.

QCSB is the research lab of Dr. Yang at Queen's University: https://biosyscompute.com
Open Plastic is a Queen's University-led interdisciplinary research consortium focused on harnessing microbial technologies to drive a shift towards a zero-plastic waste future. More information:

- https://www.queensu.ca/gazette/stories/rethinking-our-approach-tackling-plastic-waste
- https://openplastic.com

Application Deadline
1 May 2022

Department of Admission
Chemical Engineering

Supervisor
Prof. Laurence Yang

Start Date
September 2022

Renumeration
$25k/year minimum for 4 years.

Opportunities for top up are available if the candidate successfully secures external scholarships (NSERC, OGS, etc.).

Entering graduate students who win federal government tri-council awards are automatically provided a $5,000 (Masters), $10,000 (PhD) top-up award by Queen's.

To Apply

1) Apply using the form at https://forms.gle/WEsSXc2QyzmpnA6G7, also accessed via the **Apply Now** button at https://biosyscompute.com/career.html.

2) The successful candidate is invited to apply formally to Queen's University. Note that acceptance to Queen's requires a full application to Queen's university.

More information on applying to Queen's school of graduate studies: https://www.queensu.ca/sgs/prospective-students/how-apply