

PERSONAL DETAILS

Mobile	(416) 806-3264	GitHub	www.github.com/dlato
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EDUCATION

**Doctor of Philosophy Candidate in
Computational Biology and Bacterial Genomics** 2015-Present
McMaster University, Hamilton, ON

Supervisors: Professor G. Brian Golding
Thesis Title: Spatial Patterns of Molecular Trends in Bacterial Genomes

Honours Bachelor of Science in Mathematics and Biology 2011-2015
McMaster University, Hamilton, ON

Supervisors: Professor G. Brian Golding
Honours Thesis Title: Substitution Rates in Relation to Position on the Replicons of *Sinorhizobium*

CODING AND HIGH PERFORMANCE COMPUTING

Python	L ^A T _E X	tcsh
BioPython	Perl	bash
R	GitHub	
Shiny	Unix command line	zcsch

PUBLICATIONS

- [1] Lato, D. F. and Golding, G. B. (2020). Spatial Patterns of Gene Expression in Bacterial Genomes. *J Mol Evol*.
- [2] Moretti, M. E., Lato, D. F., Berger, H., Koren, G., Ito, S., and Ungar, W. J. (2017). A cost-effectiveness analysis of maternal CYP2D6 genetic testing to guide treatment for postpartum pain and avert infant adverse events. *Pharmacogenomics J*.

RESEARCH EXPERIENCE

PhD in Computational Biology and Bacterial Genomic 2015-Present
McMaster University, Hamilton, ON

- Development and innovative application of advanced simulation, data analysis, visual analytics and other computational techniques to research problems in molecular evolution and bacterial genomics.
- Familiarization bioinformatics tools and pipelines related to sequence annotation, phylogenetics, molecular evolution, gene expression, genome assembly, and data visualization.
- Considerable training in high performance computing and programming, data visualization, data analysis, big data storage, and software tool development.
- Grant and paper writing knowledge and involvement.
- Interdisciplinary collaboration.

- Independent research and managing undergraduate student research projects.
- Presenting research to specific and broad audiences.

PROFESSIONAL EXPERIENCE

Undergraduate Research Assistant 2014

Biology, McMaster University, Hamilton, ON

Supervisor: Dr. G. Brian Golding

Comprehensive training in bioinformatic software and high performance computing. Computational research on the molecular evolution of mutations in the bacteria *Sinorhizobium* using sequence analysis and phylogenetics.

Undergraduate Research Assistant 2013

Surgical Oncology, University of Toronto, Toronto, ON

Supervisor: Dr. Usmaan Hameed

Completed extensive clinical chart and literature reviews in the surgical oncology field. Experience in clinical setting and data.

Undergraduate Research Assistant 2012

Motherisk, The Hospital for Sick Children, Toronto, ON

Supervisor: Dr. Myla E. Moretti

Review patient chart information and extract data needed for literature review. Performed research and data analysis on the impacts of maternal genetic testing and adverse infant effects [2]. Experience with clinical data acquisition from medical charts and surveys as well as analyzing such data.

TEACHING

Teaching Assistant 2015-Present

Department of Biology, McMaster University

Introduction to Bioinformatics

Teaching Assistant 2015-Present

Department of Biology, McMaster University

Genetics

Guest Lecture 2018

Department of Biology, McMaster University

Molecular Evolution

Workshop Leader 2017

Department of Biology, McMaster University

High School Plant Molecular Biology Lab Workshop

Software Carpentry Leader 2017

McMaster University, Hamilton

Command line, Git, and R

Teaching Assistant 2014

Department of Mathematics and Statistics, McMaster University

Differential Equations

HONORS AND AWARDS

Dr. Edna Guest Award 2020

Annual Athletic Awards, McMaster University

\$1,000 CAD

All Canadian Award for Outstanding Average

While on a Competitive University Sports Team

2012-2020

Canadian University Synchronized Swimming League (CUSL)

McMaster Marauder Scholar <i>McMaster University Athletics Department</i>	2012 - 2020
Therese Quigley Award of Excellence for Graduate Student Leadership in Athletics <i>Graduate Student Recognition Awards, McMaster University</i> \$200 CAD	2018-2019
Biology Travel Scholarship <i>Department of Biology, McMaster University</i> \$500 CAD	2018-2019
GSA Travel Assistance Award <i>School of Graduate Studies, McMaster University</i> \$500 CAD	2019
Evolution and Comparative Genomics Subsidy <i>International Society for Computational Biology</i> \$475 USD	2018
Monica Scarabello Memorial Bursary <i>McMaster University</i> \$1,000 CAD	2016 and 2018
RTO/ERO Scholarship <i>Retired Teachers of Ontario (RTO)</i> \$1,500 CAD	2017
Robert John Morris Graduate Studies Bursary <i>McMaster University</i> \$1,500 CAD	2016
McMaster Synchronized Swimming Club VIP <i>McMaster University</i>	2016
Dr. Joachim Sparkuhl Undergraduate Research Award in Genomics, Genetics and Other Biological Sciences <i>McMaster University</i> \$7,680 CAD	2014

CONFERENCES/PANEL DISCUSSIONS

Poster Presentation <i>Mutation Rate Evolution</i> Society for Molecular Biology and Evolution Conference	Manchester, UK 2019
Oral Presentation <i>Evolutionary Biology / Molecular Evolution</i> Ontario Ecology, Ethology, and Evolution Colloquium	McMaster University, Hamilton, ON 2019
Oral Presentation <i>Evolution and Comparative Genomics COSI</i> Intelligent Systems for Molecular Biology Conference	Chicago, IL 2018
Panellist <i>McMaster University, Hamilton, ON 2018</i> Women In Science and Engineering (WISE)	EngSci Girl

VOLUNTEER EXPERIENCE

Let's Talk Science	2017 - Present
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McMaster University, Let's Talk Science, Hamilton

Educate students aged 4-18 in science, technology, engineering, and math (STEM) by delivering interactive experiments and activities accessibly to the Hamilton youth.

Novice Program Coach

2019 - 2020

McMaster Synchronized Swimming Club, McMaster University, Hamilton

Assist swimmers in establishing individual goals, prepare them for competition and foster a positive environment by developing and facilitating practice plans, workouts and comprehensive competition packages for a range of swimming abilities, including those who are new to the sport. The team is ranked 2nd in Eastern Canada and 6th Nationally.

SNAP (Special Needs Assistance Program)

2016 - 2019

McMaster University, Hamilton

Assist community members who have cognitive and/or physical disabilities complete physical exercise by providing physical assistance, personalized workout plans, and emotional support which resulted in a 77% increase in gross motor capabilities.

Vice President

2014 - 2015, 2018 - 2019

McMaster Synchronized Swimming Club, McMaster University, Hamilton

Assist and advise President on organizing competition registration, travel and accommodations, practices, uniforms, and participation fees by researching and completing administrative tasks.

Judge for Biology Undergraduate Symposium (BUS)

2017 - 2018

Department of Biology, McMaster University, Hamilton, ON

Critically judge final year Theses and Projects of undergraduate STEM students by reviewing the literature and asking thought provoking questions of the participants, analyzing a total of 187 studies.

President

2015 - 2018

McMaster Synchronized Swimming Club, McMaster University, Hamilton

Unassisted responsibility for 84 competitive athletes and 8 coaches resulting in a successful and healthy 4 years as an varsity organization which can be seen by the steady registration rate and over 20 medals and podium finishes. This was implemented through the organization of competition registration, travel and accommodations, practices, uniforms, and club budget.

BGSS (Biology Graduate Student Society)

2016 - 2017

Department of Biology, McMaster University, Hamilton

Assisted with planning, organizing, and running 15 social and academic events for the Biology students at McMaster.

Meet Manager

2016

McMaster Synchronized Swimming Club, McMaster University, Hamilton

Organized and executed the Canadian University Synchronized Swimming League National Competition at McMaster University, with a total of 22 Universities and 450 athletes and coaches from all over Canada in attendance.

McMaster Arts for Children

2014 - 2015

McMaster University, Hamilton

Promote the arts and inspire creativity among children by instructing arts and crafts programs that teach appreciation for and expose children to various aspects of the arts in the Hamilton Community.

McMaster Athletes Care

2013 - 2014

McMaster Synchronized Swimming Club, McMaster University, Hamilton

Create a space for vulnerable Hamilton youth to engage in sport activities by mentally supporting participants and focusing on local community development.

OTHER WORK EXPERIENCE

Tour Guide

2017 - Present

McMaster University, Hamilton