

Education

2023-present **M. Sc.**, Biochemistry and Molecular Biology, Dalhousie University
Supervisor: Dr. John Archibald

2019-2023 **B. Arts Sc. (Honours) with Distinction and Concurrent Certificate for Applied Ethics and Policy (CAEP)**, Arts and Science and Molecular Biology and Genetics, McMaster University CGPA: 11.13/12
Thesis: Characterizing the glycerophosphodiester phosphodiesterase (GDPD) family in *Eutrema salsugineum*
Supervisor: Dr. Elizabeth Weretilnyk

Honours and Awards

2023-2024	NSGS-M (<i>Dalhousie University</i>)	(\$10,000)
2023-2024	NSERC CGS-M (<i>Dalhousie University</i>)	(\$17,500)
2023-2024	NSERC CGS-M (<i>University of Calgary</i>)	(\$17,500, declined)
2023-2024	OGS (<i>University of Guelph</i>)	(\$15,000, declined)
2023	NSERC USRA (<i>York University</i>)	(\$8,400)
2023	Best Poster at Summer Undergraduate Research Conference (<i>Faculty of Science, York</i>)	(\$200)
2023	Best Rapid-Fire Talk at NSERC CREATE ContRoL Undergraduate Research Competition (<i>tie</i>)	(\$200)
2023	Best Presentation Award: Plant Biology at Biology Undergraduate Symposium (<i>Department of Biology, McMaster</i>)	
2023	Teaching Assistant of the Year Award, Nominee	
2022-2023	Provost's Honour Roll (GPA 12/12)	
2019-2023	Deans' Honour List	
2020-2022	Marauder Scholar and OUA Academic Achievement (Lacrosse)	
2019	The McMaster Honour Award, Level 3	(\$1,000)

Publications

Articles published or accepted in peer-reviewed journals

1. Rukundo, J.-L., **Latimer, J.**, Jain, S., Kochmann, S., & Krylov, S. N. (2023). *Streamlined Data Processing for Determination of Equilibrium Dissociation Constants with Accurate Constant via Transient Incomplete Separation (ACTIS)*. Analytical Chemistry. <https://doi.org/10.1021/acs.analchem.2c05607>

Non-peer-reviewed contributions

1. **Latimer, J.**, Jia, H., Summers, P., Golding, B., & Weretilnyk, E. (2023). *Membrane Remodeling in Eutrema salsugineum under Low Phosphate and Glycerophosphodiesterase*. McMaster University Biology Undergraduate Symposium, Hamilton, Canada. (Oral presentation)
2. **Latimer, J.**, Jia, H., Summers, P., Golding, B., & Weretilnyk, E. (2023). *Membrane Remodeling in Eutrema salsugineum under Low Phosphate and Glycerophosphodiesterase*. Ontario Biology Day Conference, St. Catharines, Canada. (Oral presentation)
3. **Latimer, J.** (2023) *Processing ACTIS Experimental Data*. NSERC CREATE ContRoL Undergraduate Research Competition, online. (Rapid-fire oral presentation)
4. Rukundo, J.-L., **Latimer, J.**, Jain, S., Kochmann, S., & Krylov, S. N. (2023). *prACTISed: Processing Accurate Constant, K_d , via Transient Incomplete Separation*.

Jessica Latimer
jessica.latimer@dal.ca

Summer 2023 Undergraduate Research Conference, York University, Canada. (Poster presentation)

Research Experience

- 2023 **NSERC USRA Research Assistant**, York University
(4 months) Supervisor: Dr. Sergey Krylov
K_d Accuracy Assessment Program (KAAP)
- Designing a Python program to assess K_d accuracy from a single binding isotherm with a graphical user interface and PDF report functionality.
- Computer Vision for Cell Segmentation*
- Survey existing machine learning methods for cell segmentation and develop a model for use with Cytometry of Reaction Rate Constant (CRRC).
- Interpreting Enhanced Lateral Flow Immunoassay Results*
- Using machine learning to classify e-LFIA rapid antigen test results.
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- 2022-2023 **Honours Thesis Undergraduate Researcher**, McMaster University
(8 months) *Characterizing the glycerophosphodiester phosphodiesterase (GDPD) family in Eutrema salsugineum*
Supervisor: Dr. Elizabeth Weretilnyk
- Identifying EsGDPD and analysing gene expression with RT-PCR in phosphate fertilizer and deprived *E. salsugineum*.
 - Extracting and separating lipid components with thin layer chromatography.
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- 2022-2023 **Student Partners Program**, MacPherson Institute, McMaster University
(5 months) *Authentic Assessment in a Programming Class for Linguists: The Creation of a Coding Portfolio*
Supervisor: Dr. Gemma Repiso-Puigdeliura
- Developing coursework for Statistics for Language Research (LINGUIST 2DD3), Introduction to Programming for Linguistics (LINGUIST 3PG3), Advanced Programming for Linguistics (LINGUIST 4PL3).
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- 2022-2023 **Research Assistant**, University of Ontario Institute of Technology
(10 months) *Designing Inclusive and Experiential Pedagogies for Undergraduate Mathematics and Computer Science Instruction*
Supervisor: Dr. Robyn Ruttenberg-Rozen
- Generating computational models and supporting documentation for instructors and teaching assistants seeking to incorporate experiential learning.
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- 2022-2023 **Undergraduate Researcher**, York University
(7 months) *Streamlined Data Processing for K_d determination with ACTIS*
Supervisor: Dr. Sergey Krylov
- Developing Python scripts for the graphical user interface, working file preparation, compensation procedure, data analysis and report generation.

Teaching Experience

- 2023 **Teaching Assistant**, Dalhousie University (1 course)
Courses: Nucleic Acid Biochemistry and Molecular Biology (BIOC 3400)
- Supervising wet labs for 40 students, 65 hours per course.
 - Provided instruction for DNA and RNA extraction, primer design, polymerase chain reaction and gel electrophoresis.
- 2022-2023 **Teaching Assistant**, McMaster University (5 courses)
Courses: Applied Statistical Inference (ARTSSCI 2R03 x 2), Cellular and Molecular Biology (BIOLOGY 1A03 x 2), Cell Biology (BIOLOGY 2B03)
- Leading wet labs and tutorials for 25-30 students, 65 hours per course.
 - Provided instruction for R, PyMOL, microscopy, micro pipetting, spectrophotometry, polymerase chain reaction and gel electrophoresis.
- 2022 **Plant Molecular Genetics Workshop Leader**, McMaster University
Supervisor: Dr. Elizabeth Weretilnyk
- Teaching 15-30 high school students to extract DNA from wild-type and transgenic *Arabidopsis thaliana* for PCR amplification and gel electrophoresis.
 - Performing a *GUS* reporter-gene assay to demonstrate gene expression patterns under the control of the light-responsive *CAB* promoter.