

Tyler W. d'Entremont

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EDUCATION

Bachelor of Science with Honours, (May 2017)
Acadia University, Wolfville, Nova Scotia

Master's of Science, (December 2019)
Acadia University, Wolfville, Nova Scotia

RESEARCH EXPERIENCE

Research & Development Lead, SeaChange Biochemistry Inc.

Dartmouth, NS — May 2021 – March 2022

This position required the creation and testing of standard operating procedures associated with the extraction and purification of unique chemical compounds present in *Ascophyllum nodosum* and *Laminaria spp.* from the Atlantic Ocean. I designed and created a system for rearing *Laminaria saccharina* for kelp farming.

Lab Technician, Acadia University

Wolfville, NS — September 2020 – April 2021

Responsible for the training and supervision of BScH student research in the Walker Fungal Lab. I performed laboratory protocols including DNA extractions from plant and fungal material, PCR and nested PCR, various culture media preparations, fungal plate and liquid culturing, and data analysis (statistical and sequence data).

Master's Research, Acadia University

Wolfville, NS — May 2017 – June 2019

My research focused on *Sporobolus pumilus* and their arbuscular mycorrhizal symbionts in saltmarshes bordering the Minas Basin, Nova Scotia. I produced a mycorrhizal inoculant that improved establishment and success of rhizome sourced *S. pumilus* under simulated saltmarsh conditions. I also used metabarcoding to sequence the fungal diversity of multiple saltmarshes in Nova Scotia and determined that the diversity was driven by sediment characteristics and above-ground vegetation.

Honour's Research, Acadia University

Wolfville, NS — May 2016 - April 2017

I examined two *Sporobolus* saltmarsh grasses located in the Minas Basin, Nova Scotia. I investigated mycorrhizal fungi and their symbiotic relationship with the roots of these two cordgrass species. This included field collections, salinity proxy analysis, root colonization counts using staining methods and microscopy, and molecular techniques for identification.

Research Assistant, Acadia University

Wolfville, NS — December 2015 - April 2016

I worked under the supervision of Dr. David Kristie, Director of the KC Irving Environmental Science Centre, to develop a visual protocol for Hutchinson's Maple to use as a tool measure starch in *Acer saccharum* roots. Using staining techniques, I scored roots under the microscope and compared them to the chemical analysis of the roots. The accuracy was compared using statistics and showed a moderate correlation.

INVOLVEMENT

- Acadia University Biology Department teaching assistant (2015-2019) in Introductory Biology (BIOL 1013), Biodiversity of Plants and Algae (BIOL 2043), Microbial Diversity (BIOL 2053), Natural History and Field Biology (BIOL 3010), Principles of Genetics (BIOL 3610), Mycology (BIOL 3660), Intellectual Origins (BIOL 4023), and Molecular Markers (BIOL 4670). I was also a lab technician for Cell Biology (BIOL 2013) at Acadia University in 2019.
- Invited lectures in Principles of Genetics (BIOL 3610), Mycology (BIOL 3660) and Molecular Markers (BIOL 4670) at Acadia University.
- Acadia Biology Seminar Series coordinator (2017-2019), bringing in specialists around Atlantic Canada to give presentations on their biological research.
- Undergraduate Arthur Irving Scholar (Graduated).
- Master level Arthur Irving Scholar in Environmental Science (Graduated).
- Worked with Herbarium Curator Alain Belliveau at the E.C. Smith Herbarium as an assistant to collect herbarium specimens from old growth forests and sort existing collections to international standards.

HONOURS AND AWARDS

- Lieutenant Governor's Education Medal: 2012
- Governor General's Academic Medal: 2013
- Trask Family Bursary: 2013 and 2014
- Ronald E. Smith Scholar Bursary: 2013
- Lucy V. (Gates) Shelzi Entrance Scholarship: 2013
- Dr. Ernie Foote and Alyce Foote Memorial Entrance Scholarship: 2013
- Acadia Excellence Scholarship: 2013
- Arthur Irving Undergraduate Scholarship in Environmental Science: 2015
- Blomidon Naturalists Society Award: 2016
- Best Undergraduate Oral Presentation (33rd Great Lakes Mycology Meeting): 2017
- Arthur Irving Master's Scholarship in Environmental Science: 2017
- Nominee for Acadia's Outstanding Master's Thesis Award: 2019
- Tennessee Fellowship for Graduate Excellence: 2022

PUBLICATIONS

R. Grabka, **T.W. d'Entremont**, S.J. Adams, A.K. Walker, J. Tanney, P.A. Abbasi and S. Ali. (2022) Fungal endophytes and their role in agricultural plant protection against pests and pathogens. *Plants* 11(3): 384. doi: 10.3390/plants11030384. (Manuscript)

T.W. d'Entremont, J.C. López-Gutiérrez, and A.K. Walker (2021). Inoculating rhizome-propagated *Sporobolus pumilus* with a native mycorrhizal fungus increases salt marsh plant growth and survival. *FACETS* 6: 1134-1145. doi: 10.1139/facets-2020-0104. (Manuscript)

T.W. d'Entremont, Z. Migicovsky, J.C. López-Gutiérrez, and A.K. Walker (2021). Saltmarsh rhizosphere fungal communities are defined by sediment type and dominant plant species cover in Nova Scotia, Canada. *Environmental Microbiology Reports* 13(4): 458-463. doi:10.1111/1758-2229.12904. (Manuscript)

T.W. d'Entremont (2019). Saltmarsh sediment fungal communities and arbuscular mycorrhizal fungi in *Sporobolus pumilus* (Roth) (Poaceae) (*Spartina patens*) of the Minas Basin, Nova Scotia: identification,

abundance, and role in restoration. Acadia University. <https://scholar.acadiau.ca/islandora/object/theses:3354>. (Thesis)

T.W. d'Entremont, J.C. López-Gutiérrez, and A.K. Walker (2018). Examining arbuscular mycorrhizal fungi in saltmarsh hay (*Spartina patens*) and smooth cordgrass (*Spartina alterniflora*) in the Minas Basin, Nova Scotia. *Northeastern Naturalist* **25**(1): 72-86. doi:10.1656/045.025.0107. (Manuscript)

T.W. d'Entremont (2017). Examining Arbuscular Mycorrhizal Fungi in *Spartina patens* Aiton and *Spartina alterniflora* Loisel in the Minas Basin, Nova Scotia. Acadia University. <http://scholar.acadiau.ca/islandora/object/t/theses:2056>. (Thesis)

PRESENTATIONS (Presenter Indicated *)

T.W. d'Entremont*, J.C. López-Gutiérrez, and A.K. Walker (2019). Using arbuscular mycorrhizal fungi to save Nova Scotia's declining saltmarshes. Science Atlantic, St. Francis Xavier University, Nova Scotia, March 8-10, 2019. (Oral)

T.W. d'Entremont*, J.C. López-Gutiérrez, and A.K. Walker (2019). Saving saltmarshes with our fungal friends. Acadia's 6th Annual Student Research and Creative Works Symposium, Wolfville, Nova Scotia, January 25-26, 2019. (Oral)

T.W. d'Entremont*, J.C. López-Gutiérrez, and A.K. Walker (2018). Arbuscular mycorrhizal fungi in *Sporobolus pumilus* of the Minas Basin, Nova Scotia: identification, abundance, and role in saltmarsh restoration. International Mycological Congress 11, San Juan, Puerto Rico, July 15-21, 2018. (Poster)

T.W. d'Entremont*, J.C. López-Gutiérrez, and A.K. Walker (2018). Arbuscular mycorrhizal fungi in *Sporobolus pumilus* of the Minas Basin, Nova Scotia: identification, abundance, and role in restoration. Great Lakes Mycology Meeting, Chaffey's Lock, Ontario, April 28-29, 2018. (Poster).

T.W. d'Entremont*, J.C. López-Gutiérrez, and A.K. Walker (2017). Examining arbuscular mycorrhizal fungi in *Spartina patens* and *Spartina alterniflora* in the Minas Basin, Nova Scotia. Mycological Society of America, Athens, Georgia, July 16-19, 2017. (Poster)

T.W. d'Entremont*, J.C. López-Gutiérrez, and A.K. Walker (2017). Examining arbuscular mycorrhizal fungi in *Spartina patens* and *Spartina alterniflora* in the Minas Basin, Nova Scotia. Great Lakes Mycology Meeting, Chaffey's Lock, Ontario, April 21-23, 2017. (Oral)

T.W. d'Entremont*, J.C. López-Gutiérrez, and A.K. Walker (2017). Examining arbuscular mycorrhizal fungi in *Spartina patens* and *Spartina alterniflora* in the Minas Basin, Nova Scotia. Science Atlantic, St. Francis Xavier University, March 10-12, 2017. (Poster)

T.W. d'Entremont*, J.C. López-Gutiérrez, and A.K. Walker (2017). Examining arbuscular mycorrhizal fungi in *Spartina patens* and *Spartina alterniflora* in the Minas Basin, Nova Scotia. Blomidon Naturalists Society, Wolfville, November 21, 2016. (Oral)