

# DILLON BRIAN MULDOON

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## EDUCATION

### **Doctor of Philosophy (Environmental and Life Sciences: Ecosystem Biogeochemistry)**

Trent University (Expected completion: December 2026)

*Thesis Topic:* Mechanisms of microbially mediated carbon cycling in Ontario agricultural soils.

### **Master of Science (Environmental Sciences: Plant and Environmental Health)**

University of Guelph (2020)

*Thesis Topic:* Enhanced berm habitats increases the abundance of natural enemies of insect pests and pollinators in the Holland Marsh, Ontario.

### **Bachelor of Science (Honours) in Sustainable Agriculture and Food Systems**

Trent University (2017)

## PROFESSIONAL EXPERIENCE

### **Graduate Research Assistant (PhD), Trent University, Agricultural Soil Health Lab**

January 2023 – present

### **Research and Soil Health Program Manager, Ecological Farmers Association of Ontario (EFAO)**

July 2022 – January 2024

### **Research and Soil Health Program Coordinator, Ecological Farmers Association of Ontario (EFAO)**

June 2021 – July 2022

### **Research and Extension Intern, Lakehead University, Agricultural Research Station (LUARS)**

October 2020 – July 2021

### **Graduate Research Assistant (MSc), University of Guelph, Scott-Dupree AgroEco Research Lab**

September 2017 – May 2020

### **Research Assistant, University of Guelph, Muck Crop Research Station**

September 2019 – December 2019

### **Research Assistant, University of Guelph, Nigel Raine Lab**

May 2017 – August 2017

## PUBLICATIONS

### MANUSCRIPTS

#### Published

1. E. Nelson, S. Larsen, and **D.B. Muldoon**. Farmer Knowledge as Formal Knowledge: A Case Study of Farmer-Led Research in Ontario, Canada. *Journal of Agriculture, Food Systems, and Community Development*, 12(4): 1-24 [Accepted: 7 June 2023]

## MANUSCRIPTS CONTINUED

Accepted

Submitted

### In preparation

**D.B. Muldoon**, E. Sytsma, M. Rangaiev, K. Wright, and K.A. Thompson. Solid and tea applications of cricket frass as a nutrient amendment in a greenhouse trial.

**D.B. Muldoon**, E. Sytsma, and K.A. Thompson. Cricket frass affects soil heavy metal retention and microbial community diversity in forage grass soil.

**D.B. Muldoon**, M. Rangaiev, and K.A. Thompson. The use of molecular stable isotope probing to assess carbon dynamics in agricultural soils – a review.

M. Rangaiev, K. Wright, **D.B. Muldoon**, K.A. Thompson. Establishment of Diverse Cover Crop Mixtures is Impacted by Nutrient

T. Singh Sahota and **D.B. Muldoon**. Enhancing Canola (*Brassica napis* L.) Yield and Quality in Northwestern Ontario through Optimal Fertilizer and Plant Protection Strategies.

**D.B. Muldoon**, M.R. McDonald, and C. Scott-Dupree. Berm diversity enhances predatory ground-dwelling beetles in non-crop areas adjacent to intensively cultivated muck soil.

**D.B. Muldoon**, A.E. Gradish, M. R. McDonald, and C. Scott-Dupree. Increasing floral resources on uncultivated canal berms promotes pollinator conservation in intensively cultivated agroecosystems.

M.R. McDonald, **D.B. Muldoon**, K. Vander Kooi, and T. Blauel. Entomophatogenic nematode, *Steinernema feltiae*, reduces fungus gnat populations in the greenhouse.

## RESEARCH REPORTS

S. Larsen, **D.B. Muldoon**, and R. Ivanoff (2022) Ecological Farmers Association of Ontario Farmer-Led Research Program Annual Report. Ontario, Canada

S. Larsen, **D.B. Muldoon**, and R. Ivanoff (2021) Ecological Farmers Association of Ontario Farmer-Led Research Program Annual Report. Ontario, Canada

T. Singh Sahota, **D.B. Muldoon**, and B. Tomeck (2020) Lakehead University Agricultural Research Station Annual Report. Thunder Bay, ON

**D.B. Muldoon**, (2020) Enhanced berm habitats increases the abundance of natural enemies of insect pests and pollinators in the Holland Marsh, Ontario. MSc Thesis: 1-163 [Accepted: 26 May 2020]

**D.B. Muldoon**, M.R. McDonald, and C. Scott-Dupree (2020) Assessing the abundance and diversity of natural enemies and insect pest populations on berm treatments. Muck Vegetable Cultivar Trial and Research Report Kettleby, ON

M.R. McDonald, **D.B. Muldoon**, and Vander Kooi, K. (2020) Evaluating the biocontrol pot popper pearls for fungus gnat control, 2019. 2020 Pest Management Research Report – 2020 Growing Season. Agriculture and AgriFood Canada. March 2021. Report No. 6. 59: 18-20.

**D.B. Muldoon**, K. Vander Kooi, and M.R. McDonald (2020) Evaluating pot popper pearls (Environmental Factor Inc.) for fungus gnat control. Muck Vegetable Cultivar Trial and Research Report Kettleby, ON

**D.B. Muldoon**, M.R. McDonald, and C. Scott-Dupree (2019) Assessing the abundance and diversity of natural enemies and insect pest populations on berm treatments. Muck Vegetable Cultivar Trial and Research Report Kettleby, ON

## BLOGS & OTHER PUBLICATIONS

**D.B. Muldoon** (2023) Ontario's new Soil Health Assessment and Plan (SHAP) tool. Ecological Farming in Ontario Volume 44, Issue 3, August 15, 2022, Ontario, Canada

## BLOGS & OTHER PUBLICATIONS CONTINUED

**D.B. Muldoon** (2022) Why Sample, and What is Your Soil Test Telling You? Ecological Farming in Ontario Volume 43, Issue 3, August 15, 2023, Ontario, Canada

**D.B. Muldoon** and S. Larsen (2022) Raising Crops on the Roof: Benefits and Obstacles. Ecological Farming in Ontario Volume 43, Issue 3, August 15, 2022, Ontario, Canada

**D.B. Muldoon** (2019) Guelph Bug Day Recap. Entomological Society of Ontario Newsletter Volume 24, Issue 2, December 1, 2019, Ontario, Canada.

**D.B. Muldoon** (2019) Berm Outreach Day: The importance of enhanced non-crop habitat for beneficial insect in intensive agricultural landscapes. Entomological Society of Canada Blog, Ontario, Canada.

## PRESENTATIONS

### SCIENTIFIC CONFERENCES

**D.B. Muldoon** and K. A. Thompson. The impact of increasing cover crop species and functional diversity on the relative abundance of soil microbes and soil health characteristics. International Institute for Environmental Studies, Johannesburg, South Africa, April 2025 (oral presentation)

**D.B. Muldoon** and K. A. Thompson. Unraveling the mechanisms of microbially-mediated carbon cycling in Ontario agroecosystems. Canadian Society of Soil Science Conference, Vancouver, BC, June 2024 (poster presentation)

**D.B. Muldoon**, A. Stinson, M.R. McDonald, and C. Scott-Dupree. Enhancing uncultivated canal berms to support natural enemy at the Holland Marsh, Ontario. Ontario Pest Management Conference, Guelph, ON, November 2019 (oral presentation)

**D.B. Muldoon**, A. Stinson, M.R. McDonald, and C. Scott-Dupree. The enhancement of non-crop habitat to support natural enemy populations at the Holland Marsh, Ontario. Entomological Society of Ontario Annual Meeting, Ironwood, ON, November 2019 (oral presentation)

**D.B. Muldoon**, A. Stinson, M.R. McDonald, and C. Scott-Dupree. Better berms bring beneficial bugs. Growing Agri-Food KTT in Ontario: Best Practices for Mobilizing Knowledge, Guelph ON, April 2019

**D.B. Muldoon**, A. Stinson, M.R. McDonald, and C. Scott-Dupree. Berm baby berm: Assessing natural enemy and pest populations on canal berms at the Holland Marsh. Ontario Fruit and Vegetable Growers Conference, Niagara Falls, ON, February 2019 (poster presentation)

**D.B. Muldoon**, M.R. McDonald, and C. Scott-Dupree. Enhancing uncultivated canal berms to support beneficial insects in the intensive agroecosystem of the Holland Marsh, Ontario. Entomological Societies of America, Canada, and British Columbia Joint Annual Meeting, Vancouver, BC, November 2018 (poster presentation)

**D.B. Muldoon**, A. Stinson, M.R. McDonald, and C. Scott-Dupree. Enhancing uncultivated canal berms to support natural enemy populations in the agroecosystem of the Holland Marsh, Ontario. Ontario Pest Management Conference, Guelph, ON, November 2018 (poster presentation)

**D.B. Muldoon**, A. Stinson, M.R. McDonald, and C. Scott-Dupree. Remain calm and carrot on: Improving carrot weevil management. Ontario Fruit and Vegetable Growers Conference, Niagara Falls, ON, February 2018 (poster presentation)

### INVITED SPEAKER

**D.B. Muldoon**. Soil microorganisms and the carbon cycle. Soil Biodiversity and Functioning (SAFS 4860) Guest Lecture, Trent University, November 2024

**D.B. Muldoon**. Pest Management and Pesticides. Environmental Implications of Agriculture (ENVS 3002) Guest Lecture, Trent University, January 2023

**D.B. Muldoon**. Looking at your farm's landscape: How to promote natural enemies and pollinators. Common Ground Project. Hillsburg, ON, August, 2022

## INVITED SPEAKER CONTINUED

**D.B. Muldoon.** Farm management inspired by nature: Promoting natural enemies and pollinators in your farm landscape. Credit Valley Conservation Twilight Talk Series, Erin, ON, July, 2019

**D.B. Muldoon**, A. Stinson, M.R. McDonald, and C. Scott-Dupree. Enhancing beneficial insect populations at the Marsh: The berm debate. The Muck Vegetable Growers Conference, Bradford, ON, March 2019

**D.B. Muldoon.** Berm Transformations at the Holland Marsh, Ontario: Enhancing conservation biological control. Integrated Pest Management (ENVS 4100) Guest Lecture, University of Guelph, March 2019

**D.B. Muldoon.** The importance of uncultivated habitat for natural enemies and pollinators in intensive agroecosystems. Integrated Pest Management (ENVS 4100) Guest Lecture, University of Guelph, March 2018

## CONFERENCE SESSIONS ORGANIZED

**D.B. Muldoon**, K.A. Thompson, and A.W. Gillespie. Canadian Society of Soil Science Conference 2024: Soil Functions for Future Generations, Vancouver, British Columbia. June 9-13, 2024. Co-organizer of the session, 'Carbon Cycling and Sequestration'.

## CO-AUTHORED CONFERENCE AND POSTER PRESENTATIONS

O. Ranasinghe, M. Rangaiev, I. Perera, K. Wright, **D.B. Muldoon**, K.A. Thompson. Diverse ecosystem services delivered by multi-species cover crop mixtures in Ontario, Canada. 8<sup>th</sup> Annual International Institute for Environmental Studies Science and Policy Workshop, Santiago, Chile, December 2023.

M. Rangaiev, K. Wright, **D.B. Muldoon**, K.A. Thompson. Impacts of diverse cover crop mixtures on Soil Health metrics in east central, Ontario. Wageningen Soil Conference, Wageningen, Netherlands, August 2023.

A. Stinson, **D.B. Muldoon**, M.R. McDonald, and C. Scott-Dupree. Why you should carrot-all about controlling carrot weevil. Growing Agri-Food KTT in Ontario: Best Practices for Mobilizing Knowledge, Guelph ON, April 2019 (poster presentation)

A. Stinson, **D.B. Muldoon**, M.R. McDonald, and C. Scott-Dupree. Improving control of carrot weevil. The Muck Vegetable Growers Conference, Bradford, ON, March 2019

A. Stinson, **D.B. Muldoon**, M.R. McDonald, and C. Scott-Dupree. 24 carrot magic: Late seeding reduces carrot weevil damage at the Holland Marsh. Ontario Fruit and Vegetable Growers Conference, Niagara Falls, ON, February 2019 (poster presentation)

## GRANTS AND AWARDS

### COMMUNITY/OUTREACH GRANTS

Bug Day Grant (**\$2,250**) – outreach grant from Entomological Society of Ontario to conduct a family friendly public outreach day at the University of Guelph (2019)

Public Outreach Grant (**\$650**) – outreach grant from Entomological Society of Ontario to conduct a public and grower outreach day in the Holland Marsh (2019)

OAC Richards Learning Trust (**\$500**) – awarded to support Guelph Bug Day, with Cassandra Russell (2019)

OAC Richards Learning Trust (**\$1,000**) – awarded to support the 8<sup>th</sup> Annual OAC GSC Colloquium, with Erika Debrouwer and Alexandra Stinson (2019)

Student Life Enhancement Fund (**\$500**) – awarded to support the 8<sup>th</sup> Annual OAC GSC Colloquium (2019)

OAC Richards Learning Trust (**\$1,000**) – awarded to support the 3<sup>rd</sup> Annual Cross Campus Conference, with Erika Debrouwer and Trust Katsande (2019)

## **AWARDS AND SCHOLARSHIPS**

Ontario Graduate Scholarship (**\$15,000**) – Trent University (2024-2025)

Dr. Karl C. Ivarson Soil Science Scholarship (**\$2,000**) – Canadian Society of Soil Science (2024)

Research Fellowship Award (**\$14,000**) – Trent University (2023-2026)

## **AWARDS AND SCHOLARSHIPS CONTINUED**

Dean's PhD Scholarship (**\$16,000**) – Trent University (2023-2026)

Entrance Award (**\$700**) – Trent University (2023)

Beatty-Munro Memorial Scholarship (**\$1,200**) – Ontario Agriculture College, University of Guelph (2017)

Dean's Honour Role (No Value) – Trent University (2013-2017)

## **TEACHING EXPERIENCE**

### **Graduate Teaching Assistant (Trent School of the Environment), Trent University**

January 2023 – present

- SAFS 1001 – Introduction to Sustainable Agriculture and Food Systems
- SAFS 2350 – Ecological Agriculture
- SAFS 2800 – Sustainable Farm Business Management
- SAFS 3002 – Environmental Implication of Agriculture
- SAFS 3530 – Crop Physiology
- SAFS 4860 – Soil Biodiversity and Functioning

### **Graduate Teaching Assistant (ENVS 2130 DE–Eating Sustainability in Ontario), University of Guelph**

September 2017–December 2018, Fall semesters

### **TRACKS Youth Camp–Guest Pollination Instructor, Trent University**

July 2017

## **VOLUNTEER AND SERVICE CONTRIBUTIONS**

Graduate Student Member–The Canadian Society of Soil Science (2025)

Chair–Earth Sciences, Natural Resources, and Agriculture Session - First Annual Environmental and Life Sciences Graduate Student Symposium (2025)

President–Environmental and Life Sciences Society (2025-present)

Treasurer–Environmental and Life Sciences Society (2024-2025)

Volunteer–Sutton Fair and Horse Show (2022-2024)

Volunteer–Trent University Oxfam Learning and Donation Garden (2019,2023)

Co-Chair–Guelph Bug Day (2019)

Organizer–University of Guelph Muck Crops Research Station public outreach day (2019)

Ontario Agricultural College Graduate Student Senator–University of Guelph Senate (2018, 2019)

Senate Committee on Student Petitions–University of Guelph Senate (2018, 2019)

Student Budget Committee–University of Guelph Senate, Student Senate Caucus (2018, 2019)

Committee Head–Ontario Agricultural College Graduate Student Colloquium (2018, 2019)

Treasurer–Ontario Agricultural College Grad Student Council (2018, 2019)

Outreach Rep–School of Environmental Sciences Graduate Student Council (2018, 2019)

Volunteer–Royal Agricultural Winter Fair, University of Guelph Booth (November 2018, 2019)

Volunteer–Guelph Bug Day (August 2018)

Volunteer–Environment Specialist High Skills Major Training Day (April 2018)

Volunteer–Canada Blooms, Ontario Agricultural College Booth (March 2018)

Volunteer–Royal Agricultural Winter Fair, Ontario Agricultural College Booth (November 2017)

## **VOLUNTEER AND SERVICE CONTRIBUTIONS CONTINUED**

OAC Rep—School of Environmental Sciences Graduate Student Council (2017, 2018)  
School of Environmental Sciences Rep—Ontario Agricultural College Graduate Student Colloquium (2017, 2018)  
School of Environmental Science Rep—Ontario Agricultural College Grad Student Council (2017, 2018)  
Trent Food Services Council CUPE Rep—Academic (2016, 2017)  
Volunteer—Blue Wheelbarrow Organic Farm (Spring 2016)  
Volunteer—Crosswind Farms (December 2015)  
Volunteer—Hands Across the Nation Gala Dinner (2008–2014)

## **WORKSHOPS/COURSES**

Grower Pesticide Safety Course (2023)  
Graduate Student University Teaching Day, University of Guelph (2019)  
Research and Project Management Course, University of Guelph (2019)  
Professional Development Workshop: Integrating Business in Environmental Science (2018)  
Professional Development Series PDFs: Life After Grad School: Preparing for Job Interviews (2018)  
Teaching Online—Basic Skills for TAs (2017)  
Potential Energy: Transformative Presentation Skills (2017)  
Integrated Pest Management Course for Corn and Soybeans (2017)  
Health and Safety Training and Workplace Harassment Training (2014)  
Workplace Hazardous Materials Information System and Globally Harmonized System Training (2015)  
Hazard Analysis Critical Control Point Training (2015)  
Red Seal, Cook. Br. 2—Provincial and Inter-Provincial Certification (2012)  
Certificate of Apprenticeship, Cook Br. 2 (2012)  
Youth Internship Program, Ontario Youth Apprenticeship Program (2010)

## **MEMBERSHIP IN PROFESSIONAL SOCIETIES**

Canadian Soil Science Society (since 2023)  
Soil Science Society of America (since 2023)  
Entomological Society of America (since 2018)  
Agricultural Institute of Canada (since 2017)  
Ontario Institute of Agronomists (since 2017)  
Entomological Society of Canada (since 2017)  
Entomological Society of Ontario (since 2017)

## **OTHER ACTIVITIES**

Trent University Women's Curling Head Coach 2024-present  
Team Dezura U20 Women Curling Co-Coach 2024/2025  
Trent University Women's Curling Assistant Coach 2022-2024  
Junior Farmers' Association of Ontario – Peterborough 2020-2022  
University of Guelph Varsity Curling Assistant Coach 2019-2020  
University of Guelph Varsity Curling Team 2017-2019  
Trent University Varsity Curling Team 2015-2017  
High School Curling Team St. Peter's 2006-2010  
Ontario Referee Association 2009-2013