

# Kimber E. Munford

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Department of Biology  
University of Waterloo, Waterloo, ON  
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## EDUCATION

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- 2019 - 2024 **PhD**, Environmental Science  
School of Environmental Sciences, University of Guelph, Guelph, ON  
Supervisors: Susan Glasauer and Nadia Mykytczuk
- 2017 - 2019 **MSc**, Ecosystem Biogeochemistry  
Environmental and Life Sciences, Trent University, Peterborough, ON  
Supervisor: Shaun Watmough
- 2012 - 2017 **BSc (Honours)**, Biology  
Department of Biology, University of Winnipeg, Winnipeg, MB

## RESEARCH EXPERIENCE

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- 2024 - present **Postdoctoral scholar**, Department of Biology, University of Waterloo  
Supervisor: Laura Hug
- 2019 **Research assistant**, School of the Environment, Trent University  
Supervisor: Shaun Watmough

## TEACHING EXPERIENCE

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- 2024 **Instructor**, School of Environmental Sciences  
University of Guelph, Guelph, ON  
ENVS2310 Introduction to Biogeochemistry  
Designed and taught course for 55 students.
- 2022 - 2024 **Guest Lecturer**, School of Environmental Sciences  
University of Guelph, Guelph, ON  
ENVS2310 Introduction to Biogeochemistry (2022, 2023 – one week per term)
- 2020 - 2024 **Teaching Assistant**, School of Environmental Sciences  
University of Guelph, Guelph, ON  
ENVS2310 Introduction to Biogeochemistry (2020, 2022, 2023)  
ENVS2060 Soil Science (2022, 2024)  
ENVS2270 Impacts of Climate Change (2023)  
ENVS4001/2 Project in Environmental Sciences (2020, 2021)

- 2017 - 2019 **Teaching Assistant**, School of the Environment  
Trent University, Peterborough, ON  
ERST3551 Pollution Ecology (2019)  
ERST3120 Canadian Environmental Policy (2018)  
ERSC1020 Cases in Environmental Science/Studies (2018)  
EGEO2000 Field Methods in Environmental Geoscience (2017)
- 2016 - 2017 **Laboratory Demonstrator**, Department of Biology  
University of Winnipeg, Winnipeg, MB  
BIOL3901 Microorganisms and Disease (2016, 2017)  
BIOL1116 Evolution, Ecology, and Biodiversity (2016)  
BIOL2902 Biology of Bacteria and Archaea (2016)  
BIOL3410 Freshwater Ecology (2016)

## HONOURS AND AWARDS

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- 2024 **Editor's Choice Award**, Botany Journal
- 2024 **1<sup>st</sup> Place – Graduate Student Oral Presentation**, School of Environmental Sciences Student Conference (\$250)
- 2022 **Kenneth McAlpine Pretty Scholarship**, University of Guelph (\$1,000)
- 2021 - 2024 **NSERC Canada Graduate Scholarships – Doctoral (CGS-D)**, University of Guelph (\$35,000/year)
- 2021 - 2022 **Queen Elizabeth II Graduate Scholarship in Science and Technology**, University of Guelph (\$15,000 value – offered but not accepted)
- 2020 - 2021 **Queen Elizabeth II Graduate Scholarship in Science and Technology**, University of Guelph (\$15,000)
- 2019 - 2020 **Mary Edmunds Williams Scholarship**, University of Guelph (\$5,000/year)
- 2018 **1<sup>st</sup> Place – Graduate Student Oral Presentation**, International Conference on Heavy Metals in the Environment in Athens, GA (\$700 USD)
- 2017 **2<sup>nd</sup> Place – Oral Presentation**, International Institute for Environmental Studies Graduate Student Forum in Hong Kong
- 2015 - 2017 **Dean's Honour List – Student of Highest Distinction**, University of Winnipeg

## PEER-REVIEWED PUBLICATIONS

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1. Radford, J., **Munford, K.E.**, Mykytczuk, N., Glasauer, S. 2025. The Impacts of Ethanol and Freeze-Thaw Cycling on Arsenic Mobility in a Contaminated Boreal Wetland. Soil Systems. 9, 37. <https://doi.org/10.3390/soilsystems9020037>
2. Smith, E., Basiliko, N., Eimers, M.C., **Munford, K. E.**, Hazlett, P., Watmough, S.A. 2024. Below ground chemical and microbial community responses of wood ash addition to a hardwood forest in central Ontario. Canadian Journal of Forest Research. 54, 1325-1338. <https://doi.org/10.1139/cjfr-2024-0075>
3. **Munford, Kimber E.**, Humphrey, W., Levasseur, P.A., Beckett, P., Watmough, S. 2024. Effects of large-scale restoration on understory plant communities in an industrial landscape. Botany. 102, 366-378. <https://doi.org/10.1139/cjb-2024-0015>
4. **Munford, Kimber E.**, Gilbert-Parkes, S., Mykytczuk, N.C.S., Basiliko, N., Yakimovich, K.M., Poulain, A., Watmough, S.A. 2023. How arsenic contamination influences downslope wetland plant and microbial community structure and function. Science of The Total Environment. 876, 162839. <https://doi.org/10.1016/j.scitotenv.2023.162839>
5. Coppolino, J., **Munford, K.E.**, Macrae, M., Glasauer, S. 2022. Shifts in soil phosphorus fractions during seasonal transitions in a riparian floodplain wetland. Frontiers in Environmental Science. 10, 983129. <https://doi.org/10.3389/fenvs.2022.983129>
6. **Munford, Kimber E.**, Asemaninejad, A., Basiliko, N., Nadia, C.S., Glasauer, S., McGarry, S., Watmough, S.A. 2021. Native plants facilitate vegetation succession on amended and unamended mine tailings. International Journal of Phytoremediation. 0, 1–12. <https://doi.org/10.1080/15226514.2021.1987382>
7. **Munford, Kimber E.**, Casamatta, M., Basiliko, N., Glasauer, S., Mykytczuk, N.C.S., Watmough, S.A. 2021. Paper Birch (*Betula papyrifera*) Nutrient Resorption Rates on Nutrient-Poor Metal-Contaminated Soils and Mine Tailings. Water, Air, & Soil Pollution. 232, 33. <https://doi.org/10.1007/s11270-020-04975-3>
8. **Munford, Kimber E.**, Watmough, S.A., Rivest, M., Poulain, A., Basiliko, N., Mykytczuk, N.C.S. 2020. Edaphic factors influencing vegetation colonization and encroachment on arsenical gold mine tailings near Sudbury, Ontario. Environmental Pollution. 264, 114680. <https://doi.org/10.1016/j.envpol.2020.114680>
9. Asemaninejad, A., **Munford, K.**, Watmough, S., Campbell, D., Glasauer, S., Basiliko, N., Mykytczuk, N. 2020. Structure of microbial communities in amended and unamended acid-generating mine wastes along gradients of soil amelioration and revegetation. Applied Soil Ecology. 155, 103645. <https://doi.org/10.1016/j.apsoil.2020.103645>
10. Pip, E., **Munford, K.**, Bowman, L. 2016. Seasonal Nearshore Occurrence of the Neurotoxin  $\beta$ -N-Methylamino-L-alanine (BMAA) in Lake Winnipeg, Canada. Environment and Pollution. Vol. 5 No. 1:110-118. DOI: <http://dx.doi.org/10.5539/ep.v5n1p110>

## KEY MANUSCRIPTS IN PREPARATION

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1. **Munford, K.E.**, Gilbert-Parkes, S., Glasauer, S., Basiliko, N., Watmough, S.A. Drought-driven acidification mobilizes legacy uranium in a contaminated wetland complex.

2. **Munford, K.E.**, Mykytczuk, N.C.S., Burke, R., Glasauer, S. Plant growth-promoting microbial amendments increase plant biomass and induce biogeochemical shifts on metalliferous mine tailings.
3. **Munford, K.E.**, Grégoire, D.S., Hug, L.A. Tracking interlinked microbial and geochemical succession over decades in landfilled municipal solid waste.

## SELECTED CONFERENCE PRESENTATIONS AND POSTERS

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1. **Munford, K.E.\***, Grégoire, D.S., Hug, L.A. 30 years of waste: changes in microbial membership, metal cycling, and biogeochemical processes. 74<sup>th</sup> Annual Conference of the Canadian Society of Microbiologists; Montréal, QC, Canada. 2025. **(Poster)**
2. **Munford, K.E.** Everyday Activism. Rebel Knowledge Symposium; Guelph, ON, Canada. 2025. **(Invited panelist)**
3. **Munford, K.E.\***, Mykytczuk, N.C.S., Glasauer, S. Terraforming Earth: Lessons from Tailings Remediation. Contributed oral presentation. Sentinel North; Québec City, QC, Canada. 2023. **(Contributed oral presentation)**
4. **Munford, K.E.\***, Willms, N., Glasauer, S. Mykytczuk, N.C.S. Pioneer plants on mine tailings recruit unique microbes which may induce beneficial shifts in tailings biogeochemistry. 72<sup>nd</sup> Annual Conference of the Canadian Society of Microbiologists; Online. 2023. **(Poster)**
5. **Munford, K.E.\*** Emerging perspectives on the world's largest greening project: A 50-year retrospective. Québec RE3 Conference; Québec City, QC, Canada. 2023. **(Organized and chaired symposium)**
6. **Munford, K.E.\***, Humphrey, W., Levasseur, P.A., Watmough, S.A. Understory plant communities from the world's largest greening program approaching that of "healthy" sites. Québec RE3 Conference; Québec City, QC, Canada. 2023. **(Contributed oral presentation)**
7. **Munford, K.E.\***, Mykytczuk, N.C.S., Burke, R., Glasauer, S. Microbial soil amendments that promote plant growth increase biomass in mine tailings and induce shifts in microbial community structure and function. Québec RE3 Conference; Québec City, QC, Canada. 2023. **(Contributed oral presentation)**
8. **Munford, K.E.\*** Scientista of Guelph Women in STEMM Conference; Guelph, ON, Canada. 2022. **(Invited panelist)**
9. **Munford, K.E.\***, Watmough, S.A. Factors Controlling Vegetation Succession and Establishment on Ni-Cu Mine Tailings Near Sudbury, ON. International Conference on Heavy Metals in the Environment; Athens, GA, USA. 2018. **(Contributed oral presentation)**
10. **Munford, K.E.\***, Watmough, S.A. Plant Succession on Ni-Cu Tailings Near Sudbury, Canada. International Institute for Environmental Studies Graduate Student Forum; Hong Kong. 2017. **(Contributed oral presentation)**
11. **Munford, K.E.\***, Pip, E. Seasonal Distribution of the Neurotoxin BMAA in Lake Winnipeg, Canada. Prairie University Biology Symposium; Lethbridge, AB. 2016. **(Contributed oral presentation)**

## MENTORSHIP

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### Undergraduate Thesis Students

2025 - present **Directly supervising one undergraduate thesis student** in a bioinformatics project at the University of Waterloo.

2021 - 2024 **Directly supervised six undergraduate students**, teaching essential laboratory techniques and assisting with writing and data analysis at the University of Guelph. Was a “Second Reader” for the Undergraduate thesis of seven students.

Examples include:

Jordan Thakar, now in MSc at McGill.

Nathanael Willms, now in MSc at the University of Waterloo.

Raina Burke, starting MSc at Lakehead University.

Katie Hettinga, went on to complete an MSc at the University of Waterloo.

2017 - 2018 **Directly supervised one undergraduate student**, taking her to the field to sample and teaching her laboratory techniques at Trent University.

## LEADERSHIP AND SERVICE

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### University Service

2022 - 2024 **Chair**, Student Wellness Advisory Group, University of Guelph

2021 - 2024 **School of Environmental Sciences Representative**, Graduate Students' Association, University of Guelph

2022 - 2024 **Co-founder**, Graduate Coalition, University of Guelph

2021 - 2024 **Organizer**, Disabled and Neurodivergent Graduate Student Coalition, University of Guelph

2022 - 2024 **Student Representative**, Wellness Services EDI Committee, University of Guelph

2022 - 2024 **Student Representative**, Mental Health Advisory Committee, University of Guelph

2021 - 2024 **Student Representative**, SHINE Mental Wellbeing Week Committee, University of Guelph

2019 **Student Representative**, Mental Health Advisor Committee, Trent University

2016 - 2017 **President**, University of Winnipeg Biology Students' Association

## Service to Profession

2022, 2025, 2026 **Judge**, Scinapse Science Undergraduate Student Case Competition

2024 **Judge**, PATH Symposium, University of Waterloo

### **Manuscript peer-reviewer**

2022 Environmental Science and Pollution Research

2024 Écoscience

2025 Journal of Environmental Management

2025 Pedobiologia

2025 Water, Air & Soil Pollution

## PROFESSIONAL MEMBERSHIPS

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2025 - present International Society for Microbial Ecology

2022 - present Society for Ecological Restoration

2022 - present Canadian Society of Microbiologists

## PROFESSIONAL DEVELOPMENT

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2025 - 2026 **Water Leadership program**, University of Waterloo

2025 **Universal Design for Learning**, Digital Accessibility online course, AHEAD

2025 **Designing Course Layouts for Learner Success**, Digital Accessibility online course, AHEAD

2023 **Digital Accessibility for Educators**, Digital Accessibility online course, AHEAD

2022 **Graduate Research and Project Management Course**, University Guelph

2021-2022 **University Teaching Foundations Program**, University of Guelph

## REFERENCES

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### **Laura Hug**

Associate Professor (Postdoc Advisor), Canada Research Chair in Environmental Microbiology,  
Department of Biology, University of Waterloo, 200 University Ave W  
Waterloo, ON N2L 3G1

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Email: [lhug@uwaterloo.ca](mailto:lhug@uwaterloo.ca)

### **Susan Glasauer**

Associate Professor (PhD Supervisor), School of Environmental Sciences, University of Guelph  
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Guelph, ON N1G 2W1

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**Shaun Watmough**

Professor (MSc Supervisor), School of the Environment, Trent University

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