

KAREN ASHLEY THOMPSON

EDUCATION

2010-2015 PhD University of Guelph Guelph, Ontario, Canada
Land Resource Science
Research focus: Soil microbial ecology
Supervisor: Dr. K. Dunfield

Thesis title: *Abundance, Activity and Community Structure of Nitrifier and Denitrifier Communities in Agro-ecosystems*

Summary: My thesis was focussed on soil denitrifier and nitrifier community responses to agricultural management. I used molecular methods (qPCR, RT-qPCR and Illumina sequencing) to examine how these communities were affected by biomass crop production and manure management in annual and perennial cropping systems.

2003- 2007 BSc (Honours List) University of Western Ontario London, Ontario, Canada
Honours Specialization in Environmental Sciences with 4th year honours research thesis
Research focus: The uptake of toxic metals into plant tissues from soil
Supervisor: Dr. S.Macfie

AWARDS AND SCHOLARSHIPS

2014 ASA-CSSA-SSSA (American Society of Agronomy, Crop and Soil Society of America, and Soil Science Society of America) Graduate Student Leadership Conference Selected Participant (leadership)

2014 Dow AgroSciences Selected Participant at “Potential Energy: Improving Presentation Skills” Workshop Series (leadership)

2013-2014 ***Ontario Graduate Fellowship** (research)

2013 UG-OAC Dean’s Scholarship (academic)

2013 UG-OAC Latonnell Graduate Research Grant (research)

2013 UG Graduate Travel Award (research)

2012 UG-SES Morwick Scholarship (research)

2012 UG-OAC Dean’s Scholarship (academic)

2011-2013 ***Ontario Graduate Scholarship** (research)

2011 UG-OAC Dean’s Scholarship (academic)

2011-2015 UG Dean’s Honours List (academic)

2005-2007 UWO Dean’s Honours List (academic)

2005 UWO Letter of Distinction for Excellence in Leadership (leadership)

() = basis of award, * = provincial yearly salary funding based on research proposals

RESEARCH EXPERIENCE

May 2016-present University of Alberta Edmonton, Alberta
Postdoctoral Research Fellow

January 2016-May 2016 <i>Postdoctoral Research Associate</i>	University of Guelph	Guelph, Ontario
September 2010 – December 2015 <i>Graduate Research Assistant</i>	University of Guelph	Guelph, Ontario
May 2010 – Sept 2010 <i>Lab/Field Assistant</i>	University of Guelph	Guelph, Ontario
September 2006-April 2007 <i>Undergraduate Research Assistant</i>	University of Western Ontario	London, Ontario

TEACHING EXPERIENCE

January 2017-April 2017 <i>Sessional Lecturer</i>	The University of Alberta	Edmonton, Alberta
I will co-teach a 4 th year undergraduate and graduate course ‘Soil Biogeochemistry’ (RENR 442) this coming January-April.		
2010-2015 <i>Undergraduate Course Teaching Assistant</i>	The University of Guelph	Guelph, Ontario
I held fourteen TA positions at the University of Guelph; I taught soil and soil microbiology lectures and labs, lead field soil excursions, edited and graded reports, provided feedback to students and invigilated exams for the following courses:		
DTM*1300 Turf Soil Principles (2015 and 2014), ENVS*3310 Soil Biodiversity & Functions (2015 and 2014), ENVS*2130 Eating Sustainably in Ontario (2014), ENVS*2060 Soil Science (2013 and 2012), ENVS*3080 Soil and Water Conservation (2013, 2012 and 2011), SOIL*3200 Biological Environment of Soil (2012), SOIL*2010 Soil Science (2011), SOIL*4250 Soils in the Landscape (2011), and ENVB*3040 Natural Chemicals in the Environment (2010).		
2010-2015 <i>Volunteer Teacher</i>	The University of Guelph	Guelph, Ontario
I acted as a <i>Let’s Talk Science</i> teaching volunteer, visiting schools and events to teach kids science in a fun and interactive manner.		
2007 – 2009 <i>English Instructor</i>	Sewoon Foreign Language Institute and Chosun University	Gwangju, South Korea
I was employed as an English Instructor at the Language Education Institute of Chosun University and at the Sewoon Foreign Language Institute. I taught conversation, essay writing, presentation, and English classes. My duties included curriculum development, conducting oral and written exams, preparing lessons, grading exams and assignments, holding office hours and parent/student interviews, using computer grading software, attending professional development workshops, and providing feedback on textbook choices and course development.		
2005-2007 <i>Envirowestern Guest Lecturer</i>	UWO	London, Ontario
2005-2006 <i>Leadership Education Program Facilitator</i>	UWO	London, Ontario

GRANT PROPOSALS

Boyce, M., Apfelbaum, S., Thompson, R., Maynes, T., Haugen-Kozyra, K., Desjardins, R., **Thompson, K***, Smith, W., Shrestha, B., Chang, S., Carlyle, C., Bork, E., Primus, M., and Salas, B. AGGP Proposal: Grassland soil organic carbon, greenhouse gas emissions, water infiltration and biodiversity under grazing management practices in Canadian grasslands, 2016 (under review).

Thompson, K.A., Carlyle, C., Quideau, S., and E. Bork. ALMA Proposal: Could Adaptive Multi-Paddock Grazing Increase Stable Soil Carbon Stocks in Alberta Rangeland Soils? 2016 (under review) †.

*Responsible for **Soil Microbial Community Characterization Module** (\$261,172 budget of \$2.65 million total)

† \$249,600 proposed budget

TECHNICAL REPORTS

Thompson, K.A. AGGP Work Plan Progress and Performance Report: Molecular Analysis of Soil Microbial Communities contributing to *in situ* N₂O fluxes under Liquid Dairy Manure Application. (Reported Annually: 2014, 2015).

Thompson, K.A. AGGP Work Plan Progress and Performance Report: Field-Scale Characterization of Soil Microbial Communities under Dairy Manure Management in Annual Corn Systems. (Reported Annually: 2012, 2013).

Thompson, K.A., Deen, B., and K.E. Dunfield. University of Guelph/OMAFRA Annual Report: Alternate Renewable Fuels Trial. (Reported Annually: 2011, 2012, 2013, 2014).

PRESENTATIONS AND POSTERS

Bork, E., Carlyle, C., Quideau, S., **Thompson, K***, Jones, K. and F. Najafi. 2016. Mitigating recovery of mixedgrass prairie associated with the development of high voltage transmission lines. ATCO, Edmonton, Alberta, Canada. (oral)

Thompson, K.*, Bent, E., Wagner-Riddle, C., Brown, S. and K. Dunfield. 2015. Effects of dairy manure management in annual and perennial cropping systems on N-cycling microbial community structure and associated *in situ* N₂O fluxes. Soil Interfaces for Sustainable Development, McGill University, Montreal, Quebec, Canada. (oral)

Dunfield, K. E., Bent, E., Day, N. J., and **Thompson K. A.*** 2015. The Living World Under Our Feet. The Ontario and Canada Research Chairs Symposium, Metro Toronto Convention Centre, Toronto, Ontario, Canada. (poster)

Thompson, K.*, Deen, W. and K. Dunfield. 2014. Soil Denitrifier Community Response to Residue Management in Biomass Cropping Systems. ASA-CSSA-SSSA International Annual Meetings, Long Beach, California, USA. (oral)

Thompson, K.*, Deen, W. and K. Dunfield. 2014. Effects of biomass cropping systems on soil denitrifier community abundance in Ontario soils. OE³C, Guelph, Ontario, Canada. (oral)

Thompson, K.*, Deen, W. and K. Dunfield. 2013. Abundance of Denitrifier Communities in Switchgrass and Miscanthus Biomass Production Systems. CSSS Annual Meeting, Winnipeg, Manitoba, Canada. (poster)

Snider, D., **Thompson, K***, Wagner-Riddle, C., and K. Dunfield. 2013. Combining micrometeorological measurements with molecular and stable isotope techniques to understand the mechanisms producing nitrous oxide emissions in dairy manure-fertilized soils. Greenhouse Gases and Animal Agriculture Conference, Dublin, Ireland. (poster)

Thompson, K*, and K.E. Dunfield. 2013. Soil Microbial Indicators of Soil Health. Invited presentation, Syngenta, Guelph, Ontario, Canada. (oral)

Thompson, K*. Deen, W. and K. Dunfield. 2012. Abundance of Nitrous Oxide Producing Microorganisms in Biofuel Cropping Systems. CSM 62nd Annual Conference, Vancouver, British Columbia, Canada. (poster)

Thompson, K*. Deen, W. And K. Dunfield. 2011. The Impact of Perennial Grass Bioenergy Production On Soil Microbial Communities. ASA-CSSA-SSSA International Annual Meetings, San Antonio, Texas, USA. (poster)

Dunfield, K., McCormick, I.*, Deaville Nemeth, D., **Thompson, K***. 2011. What about Soil Health? How can biofuel production systems affect the sustainability of your soils? Southwestern Ontario Agricultural Conference, Ridgetown, Ontario, Canada. (poster)

Thompson, K. and S. Macfie*. Aug. 2008. Species-specific patterns of metal bioavailability in edible plants. Invited presentation, Society of Environmental Toxicology and Chemistry, World Congress, Sydney, Australia. (oral)

Macfie, S.M.*, **K. Thompson**, F. Courchesne, M-C. Turmel and C. Fleury. Jan. 2007. The varying responses of plants to contaminated soils. MITHE Annual Symposium, Aylmer, Ontario, Canada. (oral)

Thompson, K*. and S.M. Macfie. March 2007. The varying responses of edible plants to contaminated soils. Ontario Biology Day, Hamilton, Ontario, Canada. (oral)

*=presenting author

OUTREACH AND SERVICE

2015-present Various Peer-Reviewed Journals

Article Reviewer

I review submitted journal articles regularly for the Canadian Journal of Microbiology, Journal of Soil Ecology, Pedobiologia, and the Canadian Journal of Soil Science editing and providing feedback to authors.

2014-2015 ASA-CSSA-SSSA

Women in Science Committee Member

I was asked to sit on the Women's Committee of the tri-societies (ASA-CSSA -SSSA) after my selected participation in the Graduate Leadership Conference at the annual tri-society conference in 2014.

2014-2015 The University of Guelph Guelph, Ontario

Graduate Program Committee PhD Representative

I sat on the Graduate Program Committee of the School of Environmental Sciences as one of two student representatives, giving student feedback on course and program changes and recruitment projects.

2014-2015 The University of Guelph Guelph, Ontario

Graduate Program Committee GSC Representative

I sat on the Graduate Student Council (GSC) of the School of Environmental Sciences as a liaison between graduate students and faculty on program-based matters.

2010-2015 The University of Guelph Guelph, Ontario

Volunteer tour and lab demonstrator

I was a volunteer facilitator for annual *College Royal* and *Science Rendez-vous* events and lab-specific outreach teaching events, such as alumni and student tours and demonstrations.

2010-2011

The University of Guelph

Guelph, Ontario

Graduate Student Council Social Representative

I planned and carried out social events for graduate students in our department.

PROFESSIONAL AFFILIATIONS

The Canadian Society of Microbiologists (CSM)

Canadian Society of Soil Science (CSSS)

American Society of Agronomy, Crop Science Society of America, Soil Science Society of America