

CSSS-Sponsored Sessions
Joint CSSS-ISMOM-AQSSS Conference, July 2015

S1. Agricultural greenhouse gas emissions. Conveners: Brian Amiro (Brian.Amiro@umanitoba.ca) and Joann Whalen (Joann.Whalen@mcgill.ca) Keynote Speaker: Dr. Philippe Rochette, Agriculture & Agri-Foods Canada, Soils and Crops Research and Development Centre, Québec

Linked text:

This session highlights recent advances in our understanding of the processes contributing to agricultural greenhouse gas emissions and solutions to reduce these emissions. Oral and poster presentations; open to students competing for awards.

S2. Chemical and Biological Controls on Organic P Cycling in Terrestrial and Aquatic Environments.

Conveners: Noura Ziadi (Noura.Ziadi@agr.gc.ca) and Barbara Cade-Menun (barbara.cade-menun@agr.gc.ca), Keynote Speaker: Dr. Luisella Celli, University of Turin, Italy.

Linked text:

This session will highlight advances made in our understanding of organic P forms and their cycling in soil and other environmental samples. Oral and poster presentations; open to students competing for awards.

S3. Microbial provision of essential services across managed and natural ecosystems. Conveners: Bobbi Helgason (bobbi.helgason@agr.gc.ca) and Steven Siciliano (steven.siciliano@usask.ca).

Linked Text:

Soil microorganisms provide essential ecosystem services including contaminant breakdown, decomposition of organic materials and nutrient cycling. This session aims to explore the role of resilience and adaptation by the microbial communities that provide these services across various scales of time and space. Oral and poster presentations; open to students competing for awards.

S4. Soil Science Education and Outreach. Conveners: Maja Krzic (krzic@mail.ubc.ca); Tom Yates (tom.yates@usask.ca); Amanda Diochon (adiochon@lakeheadu.ca). Keynote Speaker: Dr. Doug Hayhoe Associate Professor of Education, Tyndale University College & Seminary, Toronto.

Linked Text:

The goal of this session is to address how we communicate and educate pupils, students, and professionals about soils. We are particularly interested in innovative education methods and outreach activities that are used to allow learners discover the complexity of soil and natural sciences in an interesting way. New experiences for, and reflection on, field, classroom and distance education work are expected to be shown and discussed through the session. Oral and poster sessions; not suitable for students competing for awards, due to time slot.

S5. Beyond tools: what the "omic" world can do for our understanding of soil functioning. Conveners: Jacynthe Masse (jacynthe.masse@alumni.ubc.ca) and Sue J. Grayston (sue.grayston@ubc.ca). Keynote speaker: Dr. Mohamed Hijri, Université de Montréal

Linked Text:

Soil is undeniably a complex ecosystem populated mainly by uncultured (and unculturable) microorganisms. From nutrient cycling to decontamination of ecosystems, these organisms are responsible for a plethora of functions in soil. Therefore studying them is fundamental for our understanding of soil and ecosystems processes. Over the last decades, rapid developments of the "omic" world (metagenomic, metatranscriptomics, metaproteomic, metabonomics) was perceived as quite promising for our understanding of soil functioning and have been widely used. However, these techniques do have biases (limited databases for sequence comparisons, bias in extractions processes, high cost of analysis). Are we going too fast? Are we losing sight of fundamental questions in our excitement towards these new methods (tools before science)? Are these methods as promising as we thought? What can they bring for soil science?

What breakthroughs have they brought? What is their future? Oral and poster presentations; open to students competing for awards.

S6. Wetland Soils in a Changing Climate. Convener: Angela Bedard-Haughn (angela.bedard-haughn@usask.ca) Keynote Speaker: Dr. Elyn Humphreys, Carleton University

Linked Text:

This session will explore the effects of climate and land use changes on wetland soils in natural and managed ecosystems. Topics might include nutrient dynamics in wetland soils (including greenhouse gas emissions), effects of water level changes on soil properties/function, wetland restoration/construction, and hydrogeological approaches to identifying and mapping wetland soils. Oral and poster presentations; open to students competing for awards.

S7. Proximal Soil Sensing. Conveners: Asim Biswas (asim.biswas@mcgill.ca) and Viacheslav Adamchuk (viacheslav.adamchuk@mcgill.ca) Keynote Speaker: Dr. Raphael Viscarra Rossel, CSIRO, Australia

Linked Text:

Proximal Soil Sensing is a multidisciplinary area of study that aims to develop field-based techniques for collecting information from close by or within the soil. The session solicits contributions highlighting the design, development and use of the state-of-the-art soil sensing technologies for rapid in-situ and ex-situ measurement, calibration of sensors, modern statistical methods for analyzing soil sensor data, methods for multi-sensor data fusion, optimizing soil sampling and fine resolution digital soil mapping using sensor data. With support from IUSS working group on Proximal soil sensing (WG-PSS) within the Commission of Pedometrics (C1.5) in Division D1: Soils in Space and Time and the Commission of Soil Physics (C2.1) in Division D2: Soil Properties and Processes. Oral and poster sessions; open to students competing for awards.

S8. Spatial and temporal dynamics of soil processes and their interactions at multiple scales to study complex soil systems. Conveners: Asim Biswas (asim.biswas@mcgill.ca) Keynote Speaker: Dr. Yakov Pachepsky, Research Soil Scientist, USDA ARS, Beltsville, MD.

Linked Text:

Soils are complex systems that are host to a variety of interactions between physical, geochemical and biological processes operating in different intensities and at different scales. This session solicits contributions from microbiologists, ecologists, biogeochemists, soil physicists, agricultural scientists, hydrologists, geophysicists, climatologists, and others working on key aspects of complex soil systems and their characterization at different scales. Research on the recent advances in the fundamental, experimental, methodological and modelling studies on how soil physical, chemical and biological processes interact at multiple spatial and temporal scales are invited to submit to the session. Oral and poster sessions; open to students competing for awards.

S9. General soil science (includes soil chemistry, soil physics, forest soils, etc.) Convener: Barbara Cade-Menun (barbara.cade-menun@agr.gc.ca)

Linked Text:

Presentations not fitting into any of the more specialized session on soil science sponsored by CSSS, ISMOM and AQSSS should be submitted to this session. Submissions will then be grouped into sessions based on related topics, such as general soil physics, forest soils, etc.