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Current Weather

Saskatoon, SK

Current	Thu Aft
 13°C Partly cloudy	 21°C A mix of sun and clouds

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For more information, or to be a sponsor, contact:

info@rhizo5.org

Wednesday July 10, 2019

Morning sessions

Keynote address (8:30 - 9:30; Salon B & C)

Marcel van der Heijden: Root microbiome management and soil ecological engineering for a sustainable agriculture

Poster pitches (9:30 - 10:00; Salon B & C)

Health break (10:00 - 10:30)

Parallel sessions (10:30 - 12:30)

13. Plant holobiont (Gallery A)

Chair: Angela Sessitsch

- 10:30 - 11:00 Seeds - reservoir and vector of diverse and functionally important microbiota
A. Sessitsch
- 11:00 - 11:15 Has agricultural intensification caused holobiont-level adaptation in maize?
J. Schmidt
- 11:15 - 11:30 Nitrogen availability modulates the host control of the barley rhizosphere microbiotae
R. Alegria Terrazas
- 11:30 - 11:45 Role of N-acyl-homoserine lactone quorum sensing compounds of Gram-negative bacteria for beneficial holobiontic microbe-plant interactions
A. Hartmann
- 11:45 - 12:00 Are the changes in the metabolic activity of the arbuscular mycorrhizal hyphosphere warning neighbouring plants?
C. Cabral
- 12:00 - 12:15 The plant microbiome of brassica carinata and its potential to increase plant growth and yield
V. Peta



12:15 - 12:30 Plant life cycle and environmental conditions shape the composition of fungal microbiome in canola genotypes
N. Bazghaleh

14. Phosphorus acquisition in the rhizosphere (Gallery B)

Chair: Melissa Arcand

- 10:30 - 10:45 Influence of root hairs and rhizosphere acidification on phosphorus mobilization from alkaline soils
S. Halicki
- 10:45 - 11:00 Phosphorus-acquisition strategies of native plant species of Campo natural grasslands of Southern South America
D.F. Michelini
- 11:00 - 11:15 Arbuscular mycorrhizal fungi secrete acid phosphatase to hyphosphere in response to phosphorus deficiency
K. Tawaraya
- 11:15 - 11:30 Modeling the comparative impact of root hairs on phosphorus uptake under different field conditions
S. Ruiz
- 11:30 - 11:45 Monitoring phosphorus mobility in soil relevant for root uptake using microdialysis and x-ray computed tomography
C. Petroselli
- 11:45 - 12:00 What is the actual merit of cluster root formation in phosphorus uptake from real soil?
J. Wasaki
- 12:00 - 12:15 The wheat root secreted proteome in the context of plant phosphorus nutrition
C. Staudinger
- 12:15 - 12:30 Biogeochemical phenotyping of winter wheat for phosphorus acquisition
R.K. McGrail

15. Cutting-edge approaches and rhizosphere modelling (Gallery C)

Chair: Lori Phillips

- 10:30 - 10:45 What did we learn in 58 years of rhizosphere modeling and where to go next?
C. Kuppe
- 10:45 - 11:00 Modeling the impact of biopores on root growth and root water uptake under different soil physical and environmental conditions
M. Landl
- 11:00 - 11:15 Imaging of roots and pore networks in soil systems by using high resolution X-ray micro-CT
H. Schmidt
- 11:15 - 11:30 Capturing solute penetration through ridge and furrow or flat planting systems using x-ray computed tomography
C. Scotson
- 11:30 - 11:45 Trace gases: extending the limits of rhizosphere
A. de la Porte

- 11:45 - 12:00 New strategies for assessing microbial interactions in the rhizosphere
P. Andeer
- 12:00 - 12:15 Tracking 3D Water Flow and Root Uptake in Soil by Ultra-fast Neutron Tomography
C. Toetzke
- 12:15 - 12:30 A model-data integration study for soil rice column using multiscale modelling approach considering rhizosphere gradients
T. Mai

Lunch, Poster & exhibit viewing, and Campus tours (12:30 - 14:00)

Rhizosphere 5/CSSS joint sessions

Opening remarks (14:00 - 14:15; Salon B & C)

Keynote address (14:15 - 15:15; Salon B & C)

Amanda Black: An indigenous response to a biosecurity threat: The case of kauri dieback
(*Agathis australis*)

Health break (15:15 - 15:45)

Parallel sessions (15:45 - 17:45)

16. Natural systems rhizosphere (Gallery A)

Chairs: Lenka Harantova & Sue Grayston

- 15:45 - 16:15 Forest tree rhizosphere: an activity hotspot with specific microbiome and specific functions
P. Baldrian
- 16:15 - 16:30 Coupling of soil zymography and autoradiography to quantify nutrient acquisition in the beech rhizosphere
S. Spielvogel
- 16:30 - 16:45 Greater root phosphatase activity of tropical trees at low phosphorus supply despite strong variation among co-occurring species
X. Guilbeault-Mayer
- 16:45 - 17:00 Effective use of organic phosphorus allows *Xylomelum occidentale* to inhabit severely phosphorus impoverished soils
H. Zhong
- 17:00 - 17:15 Living and dead roots facilitate emergence and survival of oak acorns in central Texas
M.A. Gorzelak
- 17:15 - 17:30 Identifying disease suppressive properties in the rhizosphere to protect New Zealand's kauri against dieback disease
A.K. Byers

17:30 - 17:45 Linking 31 years of species abundance data from a biodiverse mountain meadow to plant-soil feedback
D. in't Zandt

17. Root imaging and phenotyping (Gallery B)

Chairs: Chris Topp & Randy Clark

- 15:45 - 16:15 3D imaging, computer vision, statistical and mathematical approaches reveal the genetic basis of plant root and inflorescence architectures
C.N. Topp
- 16:15 - 16:45 Application of root imaging and phenotyping to modeling and breeding
R. Clark
- 16:45 - 17:00 Functional significance of heterorhizy in a root system for water uptake in rice plant
Y. Watanabe
- 17:00 - 17:15 The plasticity of canola root system architecture: hydroponics versus soil grown canola
H.P. Ahmed
- 17:15 - 17:30 High-throughput phenotyping of multiple ion uptake kinetics in maize
M. Griffiths

18. Rhizoremediation (Gallery C)

Chair: Steve Siciliano & Chris Yost

- 15:45 - 16:00 A root to success: Harnessing the natural complexity of rhizosphere exudation to decontaminate soil
A. Fremont
- 16:00 - 16:15 Rhizoremediation of toluene using hybrid poplars at a pilot industrial field site
M. Ben-Israel
- 16:15 - 16:30 Complexity matters: soil food webs shape the root microbiome and modify plant traits in willow under contaminated conditions
S. Correa Garcia
- 16:30 - 16:45 Rhizoremediation of organic chemicals in the existence of Fe using exuded H₂O₂ by Fenton reaction
T. Wagatsuma
- 16:45 - 17:00 Extracellular silica nano-coat induced by polyethyleneimine confers aluminum tolerance to root border cells
M. Yu
- 17:00 - 17:15 Soil fungi, a resource against cadmium threat in cacao plants
H. Cordoba
- 17:15 - 17:30 High cadmium concentration affects the arbuscular mycorrhizal fungi diversity and the physiology of cocoa plants
E. Torres

19. Root-soil interactions (Gallery D)

Chairs: Steven Mamet & Bobbi Helgason

- 15:45 - 16:00 Does P cycling change over the growing season in wheat rhizosphere and bulk soils in long-term plots with different N and P fertilization?
B. Cade-Menun
- 16:00 - 16:15 Long-term crop rotation diversity affects function and structure of the soil and rhizosphere microbial communities
B. Helgason
- 16:15 - 16:30 Does crop frequency and diversification in canola-pulse-cereal rotations change the arbuscular mycorrhizal fungal microbiome in crop roots and rhizosphere and crop yield?
J. Masse
- 16:30 - 16:45 Discovery of the untapped potential of H₂-oxidizing bacteria in soil through the use of multi-omics, microbiological and modelling approaches
P. Constant
- 16:45 - 17:00 Evaluation of soil bacteria as biocontrol agents for field pea root rot caused by *Aphanomyces euteiches*
A.T. Godebo
- 17:00 - 17:15 Potential of cherry rhizosphere actinomycetes as biocontrol agents against plant-parasitic nematodes
M. Marin-Bruzos
- 17:15 - 17:30 Diversity of parasitic fungi from soybean cyst nematode associated with long-term continuous cropping of soybean in black soil
X. Yu

Rhizo 5 / CSSS reception at the Remai Modern (18:00 - 21:00)

This joint reception for Rhizosphere 5 and Canadian Society of Soil Science delegates will take place at the **Remai Modern Art Gallery**, a 10 minute walk from TCU Place on the bank of the South Saskatchewan river. The Remai Modern, opened October 21, 2017 and features modern and contemporary art in a beautiful architectural setting.

Enjoy light food choices and beverages accompanied by the **Marc Holt Quartet**. The Art and Design shop and all galleries will be open to delegates. Please note that food and drinks will not be allowed in the shop or galleries.