

Rhizosphere 5

Shining light on the world beneath our feet

Saskatoon, Saskatchewan,
Canada

7 - 11 July 2019

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[Final Program](#)

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

Monday July 8, 2019

Morning sessions

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

Tiina Roose: Multiscale image based modelling of rhizosphere processes

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

Health break (10:00 - 10:30)

Parallel sessions (10:30 - 12:30)

1. The root microbiome (Gallery A)

Chairs: Sue Grayston & Simeon Smaill

- | | |
|---------------|---|
| 10:30 - 11:00 | Plant microbiome: Unravelling the biota black box
V. Gupta |
| 11:00 - 11:15 | Does the seed microbiome persist in the plant rhizosphere over time?
C.L. Khodadad |
| 11:15 - 11:30 | Development of the rhizosphere microbiome is dependent on root age and the preceding detritosphere
M.D. Denton |
| 11:30 - 11:45 | Plant functional group and their associated root traits as predictors of the saprophytic fungal communities in experimental grasslands
D. Francioli |
| 11:45 - 12:00 | Contrasting long-term fertilization regimes differentially impact root-associated microbial communities during the development of field-grown maize
A. Bourceret |
| 12:00 - 12:15 | Soil-borne legacies of plant disease
G. Vismans |
| 12:15 - 12:30 | Structural equation modelling of a winnowed soil microbiome identifies how invasive plants re-structure microbial networks
S.D. Siciliano |



2. Spatio-temporal organization in the rhizosphere (Gallery B)

Chair: Doris Vetterlein

- 10:30 - 11:00 X-ray CT based platform for integration of physical, chemical and biological information on spatiotemporal patterns at single root and root system scale
D. Vetterlein
- 11:00 - 11:15 Roots change the pore structure only if they have to – development of biopores and compaction around roots
M. Lucas
- 11:15 - 11:30 Rhizosphere modelling reveals the spatiotemporal distribution of daidzein, which alters bacterial communities in the rhizosphere
A. Sugiyama
- 11:30 - 11:45 Hydraulic bridges at the root-soil interface: insights from high-resolution synchrotron X-ray CT
M.A. Ahmed
- 11:45 - 12:00 Contrasting impacts of rhizodeposits on the physical formation and functioning of the rhizosphere
P.D. Hallett
- 12:00 - 12:15 Simulating and characterizing spatio-temporal patterns of rhizodeposits-the development of the rhizosphere in 3D
C. Sheng
- 12:15 - 12:30 Response of soil microbial community to photosynthetic product secretion activity of plant roots indicated by rhizosphere live imaging method
Y. Unno

3. Root exudates (Gallery C)

Chairs: Melissa Arcand & Eduardo Mitter

- 10:30 - 11:00 Sampling root exudates – mission impossible?
E. Oburger
- 11:00 - 11:15 Digging into soil chemistry – metabolomics analysis of root exudates and rhizosphere metabolites
A. Weinhold
- 11:15 - 11:30 Quantifying citrate-enhanced phosphate uptake by roots
D. McKay Fletcher
- 11:30 - 11:45 Organic acids and phosphatase enzymes determine phosphorus availability in the rhizosphere of different plant species
D. Touhami
- 11:45 - 12:00 How rice root exudates shape the nitrification process
W.M. Shi
- 12:00 - 12:15 Who's your neighbor? Plants neighbors induce species-specific changes in a focal plants' root exudation and rhizosphere community composition
T.C. Ulbrich
- 12:15 - 12:30 Comparative analysis of root exudates and bacterial diversity in aeroponics and soil
A. Zancarini

Lunch, Poster & exhibit viewing, and Campus tours (12:30 - 2:00)

Afternoon sessions

Keynote address (14:00 - 15:00; Salon B & C)

Corné Pieterse: The soil-borne supremacy: root microbiome and plant immunity

Parallel sessions (15:15 - 16:45)

4. The root microbiome (Gallery A)

Chairs: Davide Francioli & Sue Grayston

- 15:15 - 15:45 How biotic interactions shape the movement of fresh and decaying root carbon into soil
J. Pett-Ridge
- 15:45 - 16:00 Close-up on informational war between Gram opposite rhizobacteria
A. Chane
- 16:00 - 16:15 Shotgun metagenomics sequencing of the rhizosphere microbiota associated to seven ecotypes of *Medicago truncatula*
B. Pivato
- 16:15 - 16:30 Intended and unintended consequences of planted forest management for microbial rhizobiome properties
S.J. Small
- 16:30 - 16:45 A synthetic community approach to understanding the Poplar microbiome
D. Carper

5. Spatio-temporal organization in the rhizosphere (Gallery B)

Chairs: Doris Vetterlein

- 15:15 - 15:45 Insights into the spatial organization of rice-associated diazotrophs and their nitrogen fixation activity
H. Schmidt
- 15:45 - 16:00 Spatial evaluation of carbon flow and microbial function through the root-rhizosphere-soil continuum
J. Moran
- 16:00 - 16:15 Benchmarking models of root architecture and function
A. Schnepf
- 16:15 - 16:30 Influence of root mucilage gel properties on pore-scale processes in the rhizosphere
M. Brax
- 16:30 - 16:45 Root position and trait shifts depending on a neighbor's nutrient-acquisition strategy in kwongan nutrient-impooverished soils
P. de Britto Costa

6. Rhizosphere of extreme environments (Gallery C)

Chair: Steve Siciliano, Marcus Griffiths & Milko Jorquera

- 15:15 - 15:45 Rhizobacterial communities associated with flowering desert phenomenon (Atacama Desert, Chile) and their potential as plant growth-promoting bacteria
M. Jorquera
- 15:45 - 16:00 Flavonoids are involved in phosphorus deficiency-induced cluster-root formation in white lupin
C.Y. Xiong
- 16:00 - 16:15 Root system architecture and salt dynamics at the root zone
U. Nachshon
- 16:15 - 16:30 Rhizosphere microbiome of halophytes as a source of osmoregulatory genes
S. Mukhtar
- 16:30 - 16:45 Bacterial communities associated with the native Antarctic grass *Deschampsia antarctica*
A. Znoj

Poster session, exhibits, and drinks (16:45 - 18:00)

Graduate Student Social (19:00 - 23:00)

An opportunity for graduate students to meet, socialize and talk about Science (or not). Meet at the **Cathedral Social Hall** (located at 608 Spadina Crescent E) at 7:00 pm for drinks, appetizers and conversation.

Black Fox Distillery Tour (18:00 - 21:00)

(prior registration required)



<http://blackfoxfarmanddistillery.com/>

Tour Includes:

- Round trip transportation from TCU Place
- Distillery tour and tasting (includes charcuterie and sampling of Black Fox spirits)
- Farm tour (tour of flower, orchard, and pumpkin fields)
- A catered light supper