

# ECOLOGY OF SOIL MICROORGANISMS - PRAGUE - 29.11.-3.12.2015

## Tentative Programme

### Sunday, November 29

12:00-16:30 Registration

16:30-17:15 Conference opening

17:15-18:00 KN - Michael Wagner: Function First: New Ways to Study Soil Microbes on a Single Cell Level

18:00-18:45 KN - Francis Martin: Unearthing the Roots of Fungal Symbioses

19:00-21:30 Welcome reception

### Monday, November 30

8:00-11:00 Registration

#### **Microbial Life in Contaminated and Anthropogenic Soils**

8:45-9:10 IN - Michael Schlöter: Reconstruction of microbial nutrient cycles in soil using metagenomic approaches

9:10-9:35 IN - Timothy Vogel: Microbial Social Networks in Contaminated Soils

9:35-10:00 IN - Tomáš Cajthaml: Insights into ecology during microbial bioremediation as assessed through advanced techniques – case studies

10:00-10:15 CO - Matthias Kästner: Degradation of <sup>13</sup>C-labelled pyrene in soil-compost mixtures and farmyard fertilized soil – turnover mass balances and community analyses

10:15-10:30 CO - Jennifer Wiltshire: Microbial community dynamics in the rhizosphere of a heavy-metal hyper accumulator

10:30-10:45 CO - Anja Worrlich: Impact of mycelia-like dispersal networks on bacterial spatiotemporal dynamics linked to biodegradation at varying water potentials

10:45-11:00 CO - Antonios Michas: Soil - sediment microbial community adaptation due to a long history of oil contamination

11:00-11:15 CO - Salomon Bouda: Impact of urban wastes on bacterial community structure, prevalence of human opportunistic bacteria and antibiotic resistance genes in agricultural soils from Burkina Faso

11:15-11:45 Coffee

#### **Decomposition and Carbon Cycling**

11:45-12:10 IN - Paolo Nannipieri: The microbial origin of humic substances

12:10-12:35 IN - Ellen Kandeler: Microbial Colonisation and Resource Partitioning in Agricultural Soils

12:35-13:00 IN - Björn Lindahl: Ectomycorrhizal fungi drive humus decomposition in boreal forest

13:00-14:30 Lunch

14:30-14:45 CO - Ruben Lopez-Mondejar: What do they eat? Exploring the substrate-specificity of microbial communities in the decomposition of C sources in a forest soil

14:45-15:00 CO - Annemieke van der Wal: Similar and contrasting patterns of natural fungal community assembly during initial decay of coniferous and broadleaf tree logs: an experimental common garden approach

15:00-15:15 CO - Alexander Guhr: Redistribution of soil water by saprotrophic fungi enhances carbon mineralization

15:15-15:30 CO - Ryan Williams: Elucidating microbial drivers of decomposition and the carbon cycle through a co-occurrence framework

15:30-15:45 CO - Anders Tunlid: TENTATIVE TITLE Carbon availability controls the decomposition activities of the ectomycorrhizal fungi *Paxillus involutus* and *Laccaria bicolor*  
15:45-16:00 CO - Pankaj Trivedi: Microbial regulation of carbon cycle: evidence from gene-enzyme relationship  
16:00-16:15 CO - Edith Hammer: Mycorrhizas: Pipeline or Director of Belowground C Fluxes?

16:15-16:45 Coffee

### **Interactions among Micro- and Macroorganisms I**

16:45-17:10 IN - Angela Sessitsch: The Hidden World Within Plants: Ecological Considerations and Functioning of Microbial Endophytes  
17:10-17:35 IN - Jan Frouz: The effect of soil fauna in decomposition activity of soil microflora  
17:35-17:50 CO - Julia Stevens: Recruitment of a beneficial rhizosphere community by the common dandelion (*Taraxacum officinale*) from different soil types  
17:50-18:05 CO - Max-Bernhard Ballhausen: The sapro-rhizosphere concept: Bacteria as secondary consumers of plant-derived carbon

18:05-19:45 Poster session I

## **Tuesday, December 1**

### **Biodiversity and Functioning of Forest Soils**

8:45-9:10 IN - Petr Baldrian: Forest microbiome - diversity, functioning and dynamics  
9:10-9:35 IN - Lynne Boddy: Giants of the soil microbial world: foraging cord-forming fungi  
9:35-9:50 CO - Martin Hartmann: A decade of irrigation transforms the soil microbiome of a semi-arid pine forest  
9:50-10:05 CO - Christina Hazard: Genotypic Diversity Matters: Examining the diversity-ecosystem function relationship with ectomycorrhizal fungi  
10:05-10:20 CO - Fabian Bergkemper: Phosphorus depletion in forest soils shapes bacterial communities towards phosphorus recycling systems

10:20-10:50 Coffee

10:50-11:15 IN - David Myrold: Microbial Community Response to Timber Harvest; Development and Decline of Microbial Communities Associated with Ectomycorrhizal Mats  
11:15-11:40 IN - Leho Tedersoo: Tree diversity and sampling effects on soil fungi, protists and meiofauna as revealed by multiplex ITS metabarcoding  
11:40-11:55 CO - Hui Sun: Microbial community shifts in structure and potential function across a boreal forest fire chronosequence  
11:55-12:10 CO - Eva Weber: Unravelling the ecological function of abundant but uncultivated Thaumarchaeota in acidic forest soils  
12:10-12:25 CO - Katerina Soldanova: Can we keep using soil ribosomal RNA as indicator of microbial activity?

12:25-14:00 Lunch

### **Soil Biogeochemistry and Nutrient Cycling**

14:00-14:25 IN - James Prosser: Bacterial ammonia oxidisers vs. archaeal ammonia oxidisers: who wins in soil, when and why?  
14:25-14:50 IN - Søren Sørensen: The communal gene pool in soil  
14:50-15:05 CO - Sara Hallin: Niche partitioning among N<sub>2</sub>O reducing microorganisms and their importance as N<sub>2</sub>O sinks  
15:05-15:20 CO - Dagmar Woebken: Combining stable isotope labeling experiments and single-cell analysis techniques to detect active microorganisms in soil  
15:20-15:35 CO - Constance Roco: The trajectories of denitrifier structure and function demonstrate remarkable differences in soil with a legacy of anoxic spells versus constant oxic conditions

15:35-16:15 Coffee

16:15-16:40 IN - Jan Dirk van Elsas: TBD

16:40-16:55 CO - Jan Jansa: Arbuscular mycorrhizal fungi proliferate in patches of soil enriched with N-containing organic compounds

16:55-17:10 CO - Marie Spohn: Do microbial carbon use efficiency (CUE) and the mean residence time (MRT) of microbial biomass depend on soil stoichiometry?

17:10-17:25 CO - Natalie Lim: Regulation of nitrite concentrations in acidic and neutral pH soils by a combination of chemistry and complex bacterial community regulation: A study of kinetics and

17:25-17:40 CO - Gu Feng: AM fungal hyphae exudates can prime a bacterium mediated phytate mineralization in hyphosphere

17:40-19:10 Poster Session II

## Wednesday, December 2

### Biodiversity and Functioning of Agricultural Soils

8:45-9:10 IN - Christoph Tebbe: Microbiology of soil primary organo-mineral complexes and particulate organic matter

9:10-9:35 IN - George Kowalchuk: Links between patterns of soil microbial diversity and sustainable soils

9:35-10:00 IN - Michael Bonkowski: The diversity and functions of protists in soil: problems and progress

10:00-10:15 CO - Dror Minz: What does the microbiome tell us about life in the plant root zone?

10:15-10:30 CO - Wietse de Boer: Soil Volatile Organic Compounds: Microbial Competition Tools with High Potential for Control of Root-Infecting Pathogens

10:30-10:45 CO - Germán Bonilla-Rosso: Evolution and Distribution Patterns of Nitrite Reductase (nirK/nirS) in Soil Metagenomes suggest Functional Differences Between Lineages

10:45-11:00 CO - Frances Jones: The diversity of free-living, non-diazotrophic Bradyrhizobium from contrasting soils

11:00-11:30 Coffee

11:30-11:45 CO - Zhong Wei: Biodiversity of synthetic microbial communities determines disease suppression

11:45-12:00 CO - Gera Van Os: An indicator for disease suppression: linking soil chemistry to microbiology using dissolved organic carbon fractionation

12:00-12:15 CO - Ameni Bahroun: Protozoa induce soil suppressiveness against Fusarium wilt

### Interactions among Micro- and Macroorganisms II

12:15-12:40 IN - Marc-Andre Selosse: Life strategy and life cycle of Tuber melanosporum: a pioneer hermaphrodite with high spore bank and functional dioecism

12:40-13:05 IN - Mari Moora: Arbuscular mycorrhizal fungal communities: global and local patterns and their potential drivers

13:05-13:20 CO - Aurelie Deveau: From mutualism to antagonism: iron acquisition during soil microbial interactions

13:20-13:35 CO - David García de León Hernández: Can arbuscular mycorrhizal fungi drive vascular plant secondary succession in alvar grasslands?

13:35-15:00 Lunch

### Trainbiodiverse - Exploring Soil Biodiversity across Europe

15:00-15:15 TBD

15:15-15:30 TBD

15:30-15:42 TBD

15:42-15:54 TBD

15:54-16:06 TBD

16:06-16:18 TBD

16:18-16:30 TBD

16:30-17:00 Coffee

17:00-17:12 TBD

17:12-17:24 TBD

17:25-17:36 TBD

17:36-17:48 TBD

17:48-18:00 TBD

18:00-18:12 TBD

18:12-18:24 TBD

18:24-18:36 TBD

18:36-18:48 TBD

19:30-22:30 Conference dinner

## Thursday, December 3

### Microbes in the Changing Environment

8:45-9:10 IN - Erland Bååth: Bacterial growth responses to drying/rewetting and freezing/thawing – a tale of two patterns

9:10-9:35 IN - Christa Schleper: TBD

9:35-10:00 IN - Kornelia Smalla: Plasmid-mediated adaptation of soil bacteria to pollutants

10:00-10:15 CO - Johannes Rousk: A case-study for traits-based theory and prediction in microbial ecology: colonisation of sterilised soils across a pH gradient

10:15-10:30 CO - Tim Urich: Metabolic and trophic interactions modulate methane production by arctic peat microbiota in response to warming

10:30-10:45 CO - Christian Poll: Impact of climate change on carbon cycling and soil microorganisms in an arable ecosystem

10:45-11:00 CO - Marc Buée: Ectomycorrhizal and non-symbiotic fungi respond differentially to climatic parameters: what is the link with host susceptibility to climate change?

11:00-11:15 CO - Jiří Bárta: Vulnerability of cryoturbated carbon to climate change

11:15-11:45 Coffee

11:45-12:00 CO - Belinda Ferrari: Metagenomic insights into microbes living in the cold, extreme polar desert soils of Eastern Antarctica

12:00-12:15 CO - Mark Anthony: Plant invasion (garlic mustard; *Alliaria petiolata*) alters fungal community composition, increases fungal diversity, and shifts dominant fungal trophic strategy

### Archaeomicrobiology, Paleomicrobiology and Microbial Forensics

12:15-12:40 IN - Bruce Budowle: Maturation of the Field of Microbial Forensics

12:40-13:05 IN - Jeremy Austin: Predicting the origin of soil evidence: high throughput eukaryote sequencing and MIR spectroscopy applied to a crime scene scenario

13:05-13:20 CO - TBD

13:20-13:35 CO - TBD

13:35-14:00 Conference closing

13:35-14:00 Conference closing