

# ECOLOGY OF SOIL MICROORGANISMS - PRAGUE - 27.4.-1.5.2011

## Wednesday, April 27

12:00-16:30 Registration

16:30-17:15 Conference opening

17:15-18:00 Keynote: Christa Schleper - Ammonia Oxidizing Archaea in Soils: New Discovery of an Old Group

18:00-18:45 Keynote: Jan Dirk van Elsas - Soil fungi provide hospitable niches for soil bacteria - mechanisms and concepts

19:00-21:30 Welcome reception

## Thursday, April 28

8:00-11:00 Registration

### **Microbial Nutrient Cycling and Biogeochemistry (M. Schloter)**

9:00-9:25 Paolo Nannipieri - Enzymes activities and detection and expression of genes codifying enzymes

9:25-9:50 James Prosser - Archaeal ammonia oxidisers in soil: So what?

9:50-10:05 Roey Angel - Methanogens are globally ubiquitous in upland soils and become active even in the presence of oxygen

10:05-10:20 Philippe Constant - High affinity H<sub>2</sub> oxidizing bacteria - A new paradigm for the soil uptake of atmospheric H<sub>2</sub>

10:20-10:35 Sara Hallin - Spatial distribution of ammonia oxidizing bacteria and archaea across a 44-hectare farm related to ecosystem functioning

10:35-11:10 Coffee

11:10-11:35 Donald Zak - Microbial responses to a changing environment: Implications for the future functioning of terrestrial ecosystems

11:35-12:00 Laurent Philippot - Bridging microbial community ecology and nitrogen cycling in soil

12:00-12:15 Johannes Rousk - Soil pH effects on the composition and growth of soil fungal and bacterial communities, their interaction, and the consequence for low molecular weight C turnover and respiration

12:15-12:30 Karolina Tahovská - Are microorganisms adapted for mineral N assimilation in N saturated soils?

12:30-12:45 Stefanie Töwe - Abundances and potential activities of nitrogen cycling microbial communities along a chronosequence of a glacier forefield

12:45-14:15 Lunch

### **Methods in Soil Microbial Ecology: Challenges and Limitations (H. Insam)**

14:15-14:40 Michael Schloter - Archaeal activities - Challenges and limitations of the molecular toolbox

14:40-15:05 Tim Urich - Studying the structure and functioning of soil (microbial) communities using metatranscriptomics

15:05-15:30 Elizabeth Wellington - Revealing the soil metasecretome

15:30-15:55 Giancarlo Renella - Soil proteomics: progresses through model studies

15:55-16:10 Olena Moshynets - A new plastic sampling method for the comprehensive analysis of microbial community architecture

16:10-16:40 Coffee

### **Fungi in the Soil Microbial Community: Symbioses, Competition, Antagonism (P. Baldrian)**

16:40-17:05 Lynne Boddy - Mycelial interactions: major drivers of fungal community dynamics and function

17:05-17:30 Björn Lindahl - Fungi as regulators of humus accumulation in boreal forests

17:30-17:45 Emilia Hannula - Tracking carbon flow in the potato rhizosphere to fungal communities using stable isotope probing

17:45-18:00 Remy Hillekens - Tracking the composition and function of soil-borne Basidiomycota communities

18:00-18:15 Karina Clemmensen - Fungal communities and their functioning in the Boreal-Arctic transition

18:15-19:45 Poster session I (Microbial Nutrient Cycling and Biogeochemistry - Fungi in the Soil Microbial Community: Symbioses, Competition, Antagonism - Interaction among Micro- and Macroorganisms in Soils - Microbes in the Changing Environment: Global Climate Change and Soils under Human Impact)

## **Friday, April 29**

### **Agricultural Soils: Biodiversity and Functioning (P. Nannipieri)**

9:00-9:25 Dana Elhottová - Animal excrements - drivers of microbial diversity in soil

9:25-9:50 Christoph Tebbe - Microbial diversity on soil particle surfaces and their response to soil organic matter

9:50-10:05 Erick Cardenas - Microbial community analysis of the rhizosphere of two biofuel crops

10:05-10:20 Andrew Bissett - Long term land use effects on the structure and function of soil microbial communities

10:20-10:35 Pierre-Alain Maron - Relationship between microbial diversity and soil organic matter turnover

10:35-11:10 Coffee

11:10-11:35 Soren Sorensen - Investigation of prokaryotic diversity by tag-encoded amplicons pyrosequencing of soils with urban waste fertilizer and manure added

11:35-12:00 Heike Schmitt - Antibiotic resistance in the environment: manure and waste water as sources for resistance genes in soil and water

12:00-12:15 Gera Hol - Microbial diversity and agricultural soil ecosystem services

12:15-12:30 Jan Jansa - Do microbes have geography or environment just selects? On the arbuscular mycorrhizal fungi and quantitative PCR

12:30-12:45 Andreas Reim - Counter-gradients of methane and oxygen: how methanotrophs shape their environment and limit their own activity

12:45-14:15 Lunch

### **Microbial Diversity and Processes in Forest Soils (L. Boddy)**

14:15-14:40 Petr Baldrian - Decomposition processes in forest soils: identification of active microorganisms

14:40-15:05 Melanie Kuffner - The effect of seasonal changes and resource limitation on forest soil communities

15:05-15:30 Hakan Wallander - The importance of ectomycorrhizal fungi for carbon sequestration in forest soil

15:30-15:45 Kathrin Ackermann - Nitrogen cycling in natural and artificial nutrient gradients in northern boreal forests

15:45-16:00 Petra Fransson - Improving process-level understanding of the roles of fungal mycelia in carbon sequestration and release

16:00-16:15 Carolyn Churchland - A novel stem-injection stable-isotope-labelling and probing technique successfully traces carbon belowground in 22-year-old Sitka spruce

16:15-16:50 Coffee

**Interaction among Micro- and Macroorganisms in Soils (D. Elhottová)**

16:50-17:15 Marc-André Selosse - How mycorrhizal fungi may change plant's life: mycoheterotrophy and mixotrophy

17:15-17:40 Martin Zobel - Diversity patterns of AM fungi and plants - is there any link?

17:40-17:55 Jan Frouz - Soil fauna slow down microbial decomposition of organic matter

17:55-18:10 Jennifer Krumins - Rhizosphere herbivory and microbial communities in soil

18:15-19:45 Poster session II (Soil Organic Matter Decomposition and Enzymes in the Soil Environment: From Molecules to Communities - Agricultural Soils: Biodiversity and Functioning - Microbial Diversity and Processes in Forest Soils - Microbial Biodegradation Processes - Methods in Soil Microbial Ecology: Challenges and Limitations)

**Saturday, April 30**

**Microbes in the Changing Environment: Global Climate Change and Soils under Human Impact (T. Cajthaml)**

9:00-9:25 Heribert Insam - Greenhouse gas emission and anaerobic digestates

9:25-9:50 George Kowalchuk - Drivers of soil-borne microbial diversity

9:50-10:15 Erland Baath - Temperature effects on bacterial and fungal growth in soil

10:15-10:30 Serita Frey - Linking microbial dynamics and soil carbon storage in a temperate forest exposed to chronic nitrogen additions

10:30-10:45 Verena Hammerl - Impact of extreme weather events on the microbial function of soil

10:45-11:00 Alica Chroňáková - Aerobic methane oxidizers across a gradient of cattle impact in an upland soil

11:00-11:30 Coffee

11:30-11:55 Kornelia Smalla - Unravel the complex response of soil bacteria to phenanthrene - potentials and limitations of the molecular methods used

11:55-12:10 Stephanie Reischke - Temperature dependence: time shift in fungal and bacterial growth

12:10-12:25 Petra Straková - Carbon dynamics in peatlands under changing hydrology: Effects of water level drawdown on litter quality, microbial activity and community composition and litter decomposition rates

12:25-12:40 Allan Strand - Influence of rhizomorph presence upon the persistence of temperate forest fine roots: summary of a 10 year FACE study

12:40-12:55 Sylvie Nazaret - Soils as reservoir of opportunistic human bacterial pathogens and impact of agricultural practices

12:55-13:10 Klára Řeháková - Phototrophs in the high altitude – their ecological demands and roles

13:10-13:25 Ursula Peintner - High soil-fungal activity under snow at soil temperatures below 0°C

13:25-14:55 Lunch

19:30-22:30 Conference dinner

## Sunday, May 1

### **Microbial Biodegradation Processes (M. Hofrichter)**

- 9:00-9:25 Tomas Cajthaml - Biodegradation of polychlorinated biphenyls by ligninolytic fungi: application and insight into physiology of the degradation  
9:25-9:40 Aurelie Cebren - Influence of plants and root exudates on PAH-degrading bacteria in aged-polluted soils  
9:40-9:55 Lukas Wick - Relevance of fungal networks for the bioremediation of organic contaminants  
9:55-10:10 Ondřej Uhlík - Phylogenetic and metabolic diversity of aromatics-utilizing bacteria  
10:10-10:25 Stephan Schulz - Abundance, activity and diversity of alkB harbouring bacteria in different soil layers during plant litter decay  
10:25-10:40 Martina Macková - Alteration of microbial community structure in contaminated soil by different plant species

10:40-11:10 Coffee

### **Soil Organic Matter Decomposition and Enzymes in the Soil Environment: From Molecules to Communities (J. D. van Elsas)**

- 11:10-11:35 Martin Hofrichter - New fungal peroxidases, their biochemical properties, transcription and expression in wood and leaf-litter  
11:35-12:00 Matthew Wallenstein - Extracellular enzymes in soils: what do we really know?  
12:00-12:25 Kathrin Riedel - Who is Who in litter decomposition: Metaproteomics reveals major microbial players and their functions related to biogeochemistry and climate  
12:25-12:40 Evgenia Blagodatskaya - Carbon use efficiency depends on microbial growth strategies in the rhizosphere and root-free soil  
12:40-12:55 Mary Beth Leigh - Lignocellulose utilizing microorganisms in Alaskan boreal forest soil  
12:55-13:10 Inga Bodeker - ClassII peroxidases from ectomycorrhizal fungi in soil organic matter decomposition  
13:10-13:25 Ellen Kandeler - Multiple-scale distribution and function of soil microorganisms

13:25-14:00 Conference closing

14:00-14:30 Takeaway lunch