

17.6.2018 | SUNDAY

13:00-19:00 Doors open, registration & speakers service open

DAY 1

16:00-16:15	OPENING OF THE ESM2018 CONFERENCE Chairs: Taina Pennanen, Hannu Fritze
	<ul style="list-style-type: none"> • Music by a Quintet from the Academic Choral Society (Akateeminen laulu) • Opening Words, Mari Walls, President and CEO, Luke • Music by a Quintet from the Academic Choral Society (Akateeminen laulu)

MICROORGANISMS IN ECOSYSTEM FUNCTIONS AND HUMAN HEALTH	
16:15-17:00	Starvation amidst plenty: microbes, soil organic matter, and the role of water in regulating them, Joshua Schimel
17:00-17:30	Linking microbial belowground diversity and plant health, Gabriele Berg
17:30-18:00	The environment-microbiota-health axis: At the interface between soil and human microbiota, Lasse Ruokolainen
18:05-20:00	GET TOGETHER

18.6.2018 | MONDAY

08:00-18:00 Registration & speakers service open

DAY 2

MICROBES IN COLD ENVIRONMENTS Chairs: Sara Hallin, Krista Peltoniemi, lightning talks Sannakajsa Velmala	
08:30-09:00	Planctomycetes in boreal and subarctic peatlands: diversity patterns and potential functions, Svetlana Dedysh
09:00-09:15	Microbial activity along a climate gradient in the arctic, Jenni Hultman
09:15-09:30	Co-occurrence networks show response of microbial communities to warming in tundra soils, Mathilde Jeanbille
09:30-09:45	Geomicrobiology of glacier basal ice: a frozen or future soil? Robin Sen
09:45-10:00	Soil carbon and nitrogen cycling along a natural environmental gradient in Subarctic Mountain Birch forest: the fungal decoupling, Jeppe Aagaard Kristensen
10:00-10:30	COFFEE
10:30-11:00	Importance of methanotrophy in the C and N cycle, Hannu Fritze
11:00-11:20	Unusual acid-tolerant denitrifiers of permafrost affected peatlands drive massive N ₂ O emissions, Marcus A. Horn
11:20-11:35	An experimental roadmap for in-depth proteome analysis of the methane-oxidizing Methylocystis sp. strain SC2, Anna Hakobyan
11:35-11:50	Permafrost peatlands plants and their bacterial rhizobiome: stronger plant species-specific effects in permafrost than in active layer peat, Sylvain Monteux
11:50-11:55	Bacterial and fungal community composition but not richness or biomass follows plant primary succession in arctic inland sand dunes, Heli Juottonen
11:55-12:00	Patterns and predictors of methane production and methanogen community composition across peatlands globally, Michael Carson
12:00-12:05	Climate change in subarctic tundra - responses of microbial communities to changes in snow accumulation and soil temperature, Minna Männistö
12:05-12:10	Predominance of methanogens over methanotrophs contributes to high methane emissions in rewetted fens, Viktoria Unger
12:10-14:45	LUNCH
12:45-14:00	POSTER SESSION 1
MICROBES IN STRESSED ENVIRONMENTS Chairs: Anders Tunlid, Leho Tedersoo, lightning talks Sannakajsa Velmala	
14:05-14:20	Circumpolar microbiome pattern as determinant of subducted carbon vulnerability in Arctic permafrost soils, Jifí Bárta

14:20-14:35	Fine scale niche differentiation among amoebal communities of dark-spored myxomycetes determined by landscape structures as well as biotic factors, Mathilde Borg Dahl
14:35-14:50	Permafrost as an active microbial ecosystem: pushing up against the thermodynamic limits of life, Mary-Cathrine Leewis
14:50-15:05	Stable Isotope Probing Reveals a Sub-zero-Active Bacterial Community in Arctic Tundra Soils, Preshita Gadkari
15:05-15:10	Time to Wake Up! - Mycelia Enable Bacterial Activity in Dry and Oligotrophic Environments, Anja Worrich
15:10-15:15	Insights into long-term drought, storms and rewetting effects on streambed microbial diversity, Giulia Gionchetta
15:15-15:20	Secret collaborations: plant-associated Archaea and their interaction with their hosts, Julian Taffner
15:20-15:25	Role of secondary plant metabolites in the ecology of soil microorganisms, Ondrej Uhlik
15:25-15:55	COFFEE
NEW METHODOLOGICAL APPROACHES	
15:55-16:15	Soil microbial responses to drought and exotic plants shift carbon metabolism in a semi-arid ecosystem, David Lipson
16:15-16:30	Legacy of drought affects microbial community composition and activity induced by root exudation, Angela Straathof
16:30-17:00	The known and the unknown in soil microbial ecology, Petr Baldrian
17:00-17:20	Information in droplets - towards single-cell sequencing in microbiology%M-CEPASTEBIN%, Marja Tiirola
17:20-17:35	Methods, Measurements, and Models of In Situ pH of the Soils of Wisconsin, Michael Braus
17:35-17:40	Drought and climate change induced shifts in the plant community favor specific soil bacterial communities with contrasting functional characteristics, Mika Tarkka
17:40-17:45	Micro-RIP: Functional analysis of uncultivated microbes using radioisotope probing, David Hopkins
17:45-17:50	Plant growth stage drives microbiome community assembly, interaction patterns and functionality, Jie Hu
17:50-17:55	Performance of plant-microbial-soil system as affected by plant species and N availability, Eva Kastovska
17:55-18:00	The evolutionary legacy of microbial taxa impacts ecosystem functioning, Marta Goberna
19:00-20:30	HELSINKI CITY RECEPTION, City Hall, address Pohjoisesplanadi 11-13

INTERACTIONS OF MICROORGANISMS WITH BIOTIC AND ABIOTIC ENVIRONMENT

Chairs: Peter Baldrian, Aurélie Deveau

08:30-09:00	Plant-microorganism interactions under climate warming-induced range shifts: consequences for ecosystem functioning, Wim van der Putten
09:00-09:20	Impacts of long term rice cultivation on soil microbial diversity: A synthesis, Yong-Guan Zhu
09:20-09:35	Soil legacy effects on plant endophytes and plant-feeding caterpillars, S. Emilia Hannula
09:35-09:55	Bacterial War on Fungi, Wietse de Boer
09:55-10:10	Volatile organic compounds link distant microbial community composition to plant growth and health, Raza Waseem
10:10-10:40	COFFEE
10:40-11:10	Soil microbial community analyses - From habitat filtering to interactions, Christoph C. Tebbe
11:10-11:25	How does spatial heterogeneity affect decomposition dynamics? Arjun Chakrawal
11:25-11:40	Utilization of soil organic nitrogen by arbuscular mycorrhizal fungi - mechanisms and players, Jan Jansa
11:40-11:55	Interactions between grassland plants and arbuscular mycorrhizal fungi are selective, Maarja Öpik
11:55-12:10	Distinct fungal guilds respond differently to the availability and diversification of plant and carbon resources, Rasmus Kjoller
12:10-12:45	LUNCH
12:45-14:00	POSTER SESSION 2

FUNGI AND THEIR FUNCTIONS IN SOIL

Chairs: David Myrold, Jenni Hultman, lightning talks Sannakajsa Velmala

14:05-14:35	Using genomics to understand the role of soil fungi in forest ecosystems, Annegret Kohler
14:35-14:50	Spectroscopy and transcriptomics provide novel insights into the decomposition of soil organic matter by fungi, Anders Tunlid
14:50-15:05	Mycorrhizal types differ in ecophysiology and ecosystem functioning, Leho Tedersoo
15:05-15:20	Macroecology analyses of millions of fruit body records: Environmental drivers of phenology and species assemblies across Europe, Håvard Kauserud

15:20-15:25	Tree-to-Maize Nutrient Transfer via Mycorrhizal Networks in Low-Input Maize Cropping Systems?, Janina Dierks
15:25-15:30	Soil fungal communities in paddy soils after carbon amendment at blooming stage, Vanessa Otero Jiménez
15:30-15:35	Nutrient demand as dominant driver of resource allocation into extracellular enzyme synthesis in soil, Svenja Stock
15:35-15:40	Compositional changes through repeated years of summer drought in fungi (non-ECM) associated with roots of beech and spruce, Fabian Weigl
15:40-15:45	Fine root foraging strategies of Norway spruce seedlings with contrasting future phenotypes in response to nutrient-rich patches, Sannakajsa Velmala
15:45-15:50	Cover crop mixtures increase microbial functional diversity during decomposition, Sytske Drost
15:50-16:20	COFFEE
16:20-16:35	Contribution of saprotrophic and ectomycorrhizal fungi to organic P mobilization in forest soils, Ellen Kandeler
16:35-16:50	Changes of ectomycorrhizal communities along a nitrogen deposition gradient and with soil depth, Lucienne de Witte
16:50-17:10	The mycorrhiza-root interphase of spruce is under genetic control of the host and adaptive to soil characteristics, Taina Pennanen
17:10-17:15	Suppression of mycorrhizal fungi (AMF) mycelium by soil microbiota, Carla Cruz-Paredes
17:15-17:20	Arbuscular mycorrhizal fungi stimulate organic phosphate mobilization by changing bacterial community structure under field conditions, Gu Feng
17:20-17:25	Bacteria in ericoid roots and mycospheres, Sari Timonen
17:25-17:30	May Matsutake mycorrhiza-associated Streptomyces distinguish friend and foe in shiro, the evidences from in vitro studies, Lu Min Vaario
18:15-24:00	BOAT TRANSPORT TO ISLAND KLIPPAN, boat leaves from address Ehrenströmintie 14
19:00-23:30	CONFERENCE DINNER, Restaurant Saaristo

45 min opening lecture (45min)

30 min presentation (25min)

20 min presentation (15min)

15 min presentation (12min)

5 min lightning talk (4min)

Poster Session

Social Program or Meal

MICROBES AND PROCESSING OF SOIL ORGANIC MATTER	
Chairs: <i>Aino Smolander, Sue Grayston, lightning talks Sannakajsa Velmala</i>	
09:00-09:30	Microbial hotspots and hot moments in soil, Yakov Kuznyakov
09:30-10:00	Microbial Carbon Pump and its Significance for Carbon Sequestration in Soils, Chao Liang
10:00-10:15	The fate of carbon in hot spots: linking decomposition processes to microbial key players, Karolin Müller
10:15-10:30	Increased activity of surviving bacteria facilitate functional resistance to recurrent disturbances: a modelling study, Sara König
10:30-10:45	Global distribution of mycorrhizal host plants explained by climate and soil properties, Milagros Barcelo
10:45-11:15	COFFEE
11:15-11:35	Linking biogeographical patterns of microbial distributions to the modelling of soil functions and associated ecosystem services, Nadia Soudzilovskaia
11:35-11:50	Depolymerization of organic matter as a bottleneck for carbon cycling, Delphine Derrien
11:50-12:05	The plant-microbial impacts on soil processes with direct climate feedbacks: conclusions from studies on CO ₂ , CH ₄ , N ₂ O, VOCs and amines, Jussi Heinonsalo
12:05-12:10	What controls the response of N ₂ O and CH ₄ fluxes to warming: Changes in microbiological or physical soil properties?, Sven Marhan
12:10-12:15	Glucose induced priming effect of soil organic matter decomposition in boreal forest soils with different C:N ratios, Kristiina Karhu
12:15-12:20	Bacterial and fungal turnover of litter-derived DOC in top- and subsoil of a beech forest, Sebastian Preusser
12:20-12:25	Does the distribution of the functions of microbial community in soil particles follow the pattern of organic C turnover?, Lingling Shi
12:25-12:30	The impact of restriction of photosynthetic carbon flow on fungal and bacterial communities in boreal forest soils, Outi-Maaria Sietiö
12:30-12:35	Sticky Dead Microbes, Kate M. Buckeridge
12:35-13:10	LUNCH
13:10-14:25	POSTER SESSION 3
14:30-14:45	Soil C/N and legacy effects of fertilization controls denitrifying and DNRA bacteria affecting N retention, loss and N ₂ O emissions, Sara Hallin

14:45-15:00	The effect of plants on methane flux of upland soils and methanogenic and methanotrophic microorganisms in the rhizosphere, Nadine Praeg
15:00-15:15	Bacterial synthesis of storage compounds - a neglected dimension of the carbon cycle, Kyle Mason-Jones
15:15-15:30	Coupled metagenomic-chemical analyses of degrading fungal necromass and its contribution to soil organic carbon, Louise Egerton-Warburton
15:30-15:45	Nutrient content affects the turnover of fungal biomass in forest topsoil and the composition of associated microbial communities, Vendula Brabcová
15:45-16:00	Deciphering the structure of decomposer food web and functional relevance of microbial communities in the C flow in forest soil, Rubén López -Mondéjar
16:00-16:30	COFFEE
REGULATORY MECHANISMS OF MICROBES BY VIRUSES AND ANTAGONISM	
Chairs: <i>Wietse de Boer, Jarkko Hantula, lightning talks Sannakajsa Velmala</i>	
16:30-17:00	Complex fungal communities in 3-dimensional space: emergent properties in antagonistic mechanisms, Lynne Boddy
17:00-17:20	Virus communities of forest fungi inhabiting decomposing wood and tree roots, Eeva Vainio
17:20-17:50	Major genetic elements that spur horizontal gene transfers across bacteria in the mycosphere, Jan Dirk van Elsas
17:50-18:05	Multiple phages therapy agents keeps pathogens in check by generating disproportional resistance costs, Xiaofang Wang
18:05-18:10	Functional characterization of bacteria associated with dead wood based on genome and metagenome annotation, Vojtěch Tláškal
18:10-18:15	New biocontrol applications against <i>Heterobasidion</i> spp, Jarkko Hantula
18:15-18:20	Interactions of Polyporales fungi: enzyme activities, release of VOCs and progress of spruce wood decomposition upon three-species cohabitation experiments, Tuulia Mali
18:20-18:25	Fungal growth, lethal to solitary bee <i>Osmia bicornis</i> larvae, is inhibited by soil bacteria isolated from the species' nests, Anna Voulgaris Kokota
18:25-18:30	ACC deaminase positive bacteria - Serving dual role of Protector and Benefactor for plants under salinity stress, Gautam Anand

Social media and useful addresses:

#ESM2018, @Esm2018

www.luke.fi/esm2018

SUSTAINABILITY OF SOILS

Chairs: *Cindy Prescott, Katri Rankinen*

08:35-09:05 Introduction to Sustainable Development Goals by using soil-human microbiota as a case, **Eeva Furman**

09:05-09:50 What do we demand from our soils?, **Rachel Creamer**

09:50-10:10 Connecting Microbial Communities to Soil Health, **David Myrold**

10:10-10:25 Integrating diverse environmental microbiota into everyday life of urban dwellers, **Aki Sinkkonen**

10:25-10:55 **COFFEE (WITH SANDWICHES)**

Chairs: *Jussi Heinonsalo, Pekka Vanhala, lightning talks Sannakajsa Velmala*

10:55-11:25 Where has our scientific tea break brought us? Overview of recent TBI developments, **Judith Sarneel**

11:25-11:30 Termites, teabags and tropical savannahs, **Stuart W. Smith**

11:30-11:35 Long-term climate regime modulates the impact of short-term climate variability on decomposition in alpine grassland soils, **Inge Althuizen**

11:35-11:40 TeaTime4Schools: How to put decomposition into practice, **Taru Sandén**

11:40-11:45 Global change effects on litter breakdown in tidal wetlands: implications from a global survey using the Tea Bag Index, **Peter Mueller**

11:45-11:50 Occurrence of plant growth promoting *Ochrobactrum* and *Bacillus* sp. in the nodules of *Vigna radiata*, **Mohsin Tariq**

11:50-11:55 Exploring microbial functional resilience in a Canadian agricultural system using dry soil archives, **Lori Phillips**

11:55-12:10 Carbon and nutrient cycling in organic agriculture: a chronosequence approach, **Sophie Q. van Rijssel**

12:10-12:25 The role of fungi in restoring old fields, **Elly Morriën**

12:25-13:00 **CLOSING CEREMONY**