17.6.2018 | SUNDAY

DAY 1

13:00-19:00 **Doors open, registeration & speakers service open**

16:00-16:15	**OPENING OF THE ESM2018 CONFERENCE** **Chairs:** *Taina Pennanen, Hannu Fritze* • 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

DAY 2

08:00-18:00 **Registeration & speakers service open**

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 N2O 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, **Jiří 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 Subzero-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 semiarid 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%MCEPASTEBIN%, **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

19.6.2018 | TUESDAY

DAY 3

08:00-17:00 Registeration & speakers service open

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 Kjøller**
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 Weikl**
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 Streptomycetes 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

20.6.2018 | WEDNESDAY

DAY 4

08:00–17:00 Registeration & speakers service open

MICROBES AND PROCESSING OF SOIL ORGANIC MATTER

Chairs: *Aino Smolander, Sue Grayston, lightning talks Sannakajsa Velmala*

09:00–09:30	Microbial hotspots and hot moments in soil, **Yakov Kuzyakov**
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 CO2, CH4, N2O, VOCs and amines, **Jussi Heinonsalo**
12:05–12:10	What controls the response of N2O and CH4 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 N2O 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: *Wietse de Boer, Jarkko Hantula, lightning talks Sannakajsa Velmala*

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 Tláskal**
18:10–18:15	New biocontrol applications against Heterobasidion 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 Osmia bicornis larvae, is inhibited by soil bacteria isolated from the species' nests, **Anna Voulgari 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

21.6.2018 | THURSDAY

DAY 5

08:00–14:00 Registeration & speakers service open

SUSTAINABILITY OF SOILS

Chairs: *Cindy Prescott, Katri Rankinen*

08:35–09:05	Introduction to Sustainable Deveopment 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**