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- **Opening & Keynotes**
- **Registration**
- **Welcome reception**
- **Lunch**
- **Coffee**
- **Poster Session I**
- **Poster Session II**
- **Closing**
We are pleased to welcome you to the second conference on the Ecology of Soil Microorganisms to be held in November/December 2015 in Prague. This is the second conference on the same topic after the first one organised in 2011 and we are happy to see that it has again attracted the attendance of more than 400 participants from all over the world. The conference should represent an interdisciplinary platform that offers as much interaction among various subjects within microbial ecology as possible. This includes questions addressing individual microbes, microbial communities as well as their interactions with the environment and other soil biota. We hope to link the modern molecular “omics” methods such as metagenomics, metatranscriptomics and metaproteomics with approaches based on soil chemical and biochemical analyses, the exploration of soil fauna and plant ecology. The other important goal of the conference is a wide scope covering the ecology of all microbes: bacteria and fungi as well as archaea and protozoa. Our aim is to bring experts from all these disciplines to a meeting where all can benefit from interactions and to promote in this way the research in the field of soil ecology.

We hope that you enjoy the programme of invited and contributed oral talks as much as we have enjoyed putting it together for you. Unfortunately, the limited time for oral contributions has resulted in several extremely interesting topics having to be presented as posters. Please do not miss either of the two poster sessions that considerably increase the diversity of the topics covered.

We would like to acknowledge the support of all those who have contributed to the conference organization, our sponsors, exhibitors and the members of our scientific committee. However, the major thanks go to all of you – the contributors to our rich five-day scientific programme. The conference is the fruit of your efforts, so please, enjoy it!

Petr Baldrian
Chair of the Organizing Committee
Organising committee
Petr Baldrian - chair
Institute of Microbiology of the Czech Academy of Sciences
Videňská 1083
14220 Prague 4, Czech Republic
Phone: +420723770570
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Members
Michael Schloter (Helmholtz Centre, Munich), Vendula Brabcová (Institute of Microbiology of the ASCR, Prague), Tomáš Cajthaml (Charles University, Prague), Alica Chroňáková (Biology Centre ASCR, České Budějovice), Anna Davidová (Institute of Microbiology of the ASCR, Prague), Dana Elhottová (Biology Centre ASCR, České Budějovice), Jan Frouz (Biology Centre ASCR, České Budějovice), Markéta Marečková (Crop Research Institute, Prague), Martin Pospíšek (Charles University, Prague), Hana Šantrůčková (University of South Bohemia, České Budějovice), Martina Štursová (Institute of Microbiology of the ASCR, Prague), Tomáš Větrovský (Institute of Microbiology of the ASCR, Prague)

Scientific committee
Petr Baldrian (Czech Republic)
Lynne Boddy (United Kingdom)
Jan Frouz (Czech Republic)
George Kowalchuk (The Netherlands)
Paolo Nannipieri (Italy)
Michael Schloter (Germany)
Christoph Tebbe (Germany)
Jan Dirk van Elsas (The Netherlands)

Keynote lectures
Michael Wagner (Austria): Nitrification revisited: The discovery of Comammox, cyanate-degrading nitrifiers, and reciprocal feeding
Francis Martin (France): Harnessing genomics for understanding tree-microbe interactions in forest ecosystems

Invited speakers
Jeremy Austin (Australia), Erland Bååth (Sweden), Petr Baldrian (Czech Republic), Lynne Boddy (United Kingdom), Michael Bonkowski (Germany), Bruce Budowle (United States of America), Tomáš Cajthaml (Czech Republic), Jeremy Austin (Australia), Jan Frouz (Czech Republic), Ellen Kandeler (Germany), George Kowalchuk (The Netherlands), Björn Lindahl (Sweden), Mari Moora (Estonia), David Myrold (United States of America), Paolo Nannipieri (Italy), James I. Prosser (United Kingdom), Marc-André Selosse (France), Angela Sessitsch (Austria), Christa Schleper (Austria), Michael Schloter (Germany), Kornelia Smalla (Germany), Søren J. Sørensen (Denmark), Christoph Tebbe (Germany), Leho Tedersoo (Estonia), Jan Dirk van Elsas (The Netherlands), Timothy Vogel (France)
GENERAL INFORMATION

Conference organisation
Institute of Microbiology of the Czech Academy of Sciences
Biologicals
Conference website
http://www.soilmicrobes.org

Conference Venue
TopHotel Prague, Blažimská 1781/4, Praha 4, Czech Republic
http://www.tophotel.cz/en

To reach the venue by public transport, take the metro to the station „Chodov“ and from there take the bus No 115 to the station “Městský archiv” (10 min). Bus departures from „Chodov“ are available at:
Please refer to the map for detail. Paid public parking is available on site.

Language
The official language of the conference is English.

Registration
Registration desk in Top Hotel Praha will be open in a foyer of the Top Congress Hall.
Opening hours:

Sunday, November 29 12:00-18:00
Monday, November 30 8:00-11:00
Tuesday, December 1 – Thursday, December 3 8:00-9:00

All participants will receive Certificate of attendance during registration.

Name badges
All conference participants, accompanying persons and exhibitors are kindly requested to wear their badges throughout the conference in order to be admitted to the lecture hall and other conference facilities. Name badges will be also required for the admission to the Gala Dinner.

Oral presentations
All oral presentations will be held in the Top Congress Hall.
Invited talks are scheduled for 22 minutes + 3 minutes for questions, contributed talks for 12 minutes + 3 minutes for questions. The talks in the “Trainbiodiverse” session will be for 10 minutes + 2 minutes for questions. Presentations should be prepared in Microsoft PowerPoint 2010-compatible format. The authors are responsible for checking the functionality of their presentations. The presenters’ computer will have an Internet access but we strongly recommend saving any web pages in the presentation offline. Speakers’ ready corner will be
available to all speakers from the beginning of registration until the end of the day’s program. The presentations should be submitted at latest one day before they are scheduled to the organizers in the Speakers’ ready corner.

**Poster presentations**

Poster presentations will be displayed in and around the Top Congress Hall. POSTER NUMBERS CORRESPOND TO THE PAGE NUMBERS IN THIS ABSTRACT BOOK. All posters will be displayed throughout the whole conference, from Sunday, November 29 until Thursday, December 3. The posters can be pinned up from 15:00 on Sunday and must be collected before 14:00 on Thursday. Pins will be provided by the organizers. Poster dimensions should not exceed 90 cm (width) x 150 cm (height). Posters with odd numbers will be presented by their authors during Poster session I (Monday), posters with even numbers during Poster session II (Tuesday). Presenting authors are requested to be available at their posters for informal discussion during their poster session.

The organizers are not responsible for any posters that have not been removed in time.

Student poster awards (100 EUR + diploma) will be awarded to five best posters presented by authors that are students. The winners will be announced on December 2 before Lunch.

**Internet access**

Wireless internet will be available in the conference hotel free of charge to all participants.

**Exhibitions**

Commercial exhibition will take place during the conference in the lobbies around the Top Congress Hall.

**Refreshments**

Lunches (hot buffet, Monday - Wednesday) and coffee breaks (coffee and tea) are included in the registration fee. Lunches will be served in the Hall Praha, coffee will be served in the foyer. Name badges should be used during lunches and coffee breaks. Please note that „Ecology of Soil Microorganisms“ is a nonsmoking conference.

**Welcome reception**

All conference participants are cordially welcome to join the Welcome reception to be held on Sunday, November 29 from 19:00 till 21:30 in the Hall Praha. The reception is included in the registration fee.

**Gala dinner**

Gala dinner will take place in the Hall Praha on Wednesday, November 2 between 19:15-22:15. Tickets ordered by the participants will be available at the registration desk. A limited number of tickets will be available for purchase at the registration desk for 1650 CZK.

**Liability and Insurance**
The organizer is not able to take responsibility whatsoever for injury, damage or loss involving persons and property during Conference. Participants are advised to take out their own personal travel and health insurance for their trip.
Public transport in Prague
There are three metro lines and a number of tramway and bus lines in Prague. Details on city transport system are available at the official Prague Public Transport website http://www.dpp.cz/en/.

Tickets:
Tickets are sold at yellow ticket machines (also in English, coins only), at ticket offices located at some metro stations, in newspapers stands, and at tourist information centers. Each ticket must be validated upon the entrance to the metro station or in the tram / bus to mark the start of the validity period.

Tickets cost 24 CZK (30 min) or 32 CZK (90 min since validation). It is possible to change between buses, trams and metro. This ticket is not valid on night trams and buses, on the Petřín funicular and on ferries. Ticket can be paid by SMS.

Taxi
You can find the contacts for recommended non-stop taxi call centres in Prague at the official website of Prague: http://www.praguewelcome.cz/en/

Currency
The currency is the Koruna (CZK). 1 EUR is approximately 28 CZK, 1 USD is approximately 25 CZK. Money can be exchanged at numerous exchange offices and in banks, as well as in some hotels, shops and restaurants, Euros can be often used as well (ask in advance). In most shops and restaurants, credit cards can be used.

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112

Call to the Czech Republic
The international country code of the Czech Republic is 420 (dial either 00420 or +420 if not already included at the beginning of the telephone number).

Electricity
230 Volts/50 Hz, type E electrical outlet. You can buy plug converters in electronic stores.

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1 – TopHotel Prague, conference venue
2 – Bus stop of bus 115 “Městský archiv”
3 – Bus stop of bus 115 “Chodov” going to the conference venue; transfer from / to metro line C, shopping centre
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Roche
Terragenome
Trainbiodiverse
SCIENTIFIC PROGRAMME

SUNDAY, 29 NOVEMBER 2015

12:00-16:30 Registration

Opening session (Michael Schloter)

16:45 Welcome - Petr Baldrian

17:15 Keynote: Michael Wagner: Nitrification revisited: The discovery of Comammox, cyanate-degrading nitrifiers, and reciprocal feeding

18:00 Keynote: Francis Martin: Unearthing the Roots of Fungal Symbioses

19:00-21:30 Welcome reception

MONDAY, 30 NOVEMBER 2015

8:00-11:00 Registration

Microbial Life in Contaminated and Anthropogenic Soils (Christoph Tebbe)

8:45 Michael Schloter: Reconstruction of microbial nutrient cycles in soil using metagenomic approaches (Invited lecture)

9:10 Timothy Vogel: Microbial Social Networks in Contaminated Soils (Invited lecture)

9:35 Tomáš Cajthaml: Insights into ecology during microbial bioremediation as assessed through advanced techniques – case studies (Invited lecture)

10:00 Matthias Kästner: Degradation of $^{13}$C-labelled pyrene in soil-compost mixtures and farmyard fertilized soil – turnover mass balances and community analyses

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

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

10:45 Antonios Michas: Soil - sediment microbial community adaptation due to a long history of oil contamination
11:00  **Anne Winding**: Biochar for soil carbon sequestration and P fertilization: effects on microbes and fauna

11:15-11:45  **Coffee**

**Decomposition and Carbon Cycling (Christoph Tebbe)**

11:45  **Paolo Nannipieri**: The microbial origin of humic substances (Invited lecture)

12:10  **Ellen Kandeler**: Microbial Colonisation and Resource Partitioning in Agricultural Soils (Invited lecture)

12:35  **Björn Lindahl**: Ectomycorrhizal fungi drive humus decomposition in boreal forest (Invited lecture)

13:00-14:30  **Lunch**

**Decomposition and Carbon Cycling (Lynne Boddy)**

14:30  **Rubén López-Mondéjar**: What do they eat? Exploring the substrate-specificity of microbial communities in the decomposition of C sources in a forest soil

14:45  **Annemiek 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  **Alexander Guhr**: Redistribution of soil water by saprotrophic fungi enhances carbon mineralization

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

15:30  **Anders Tunlid**: Spectroscopy and transcriptomics provide novel insights into soil organic matter decomposition mechanisms in ectomycorrhizal fungi

15:45  **Pankaj Trivedi**: Microbial regulation of carbon cycle: evidence from gene-enzyme relationship

16:00  **Edith Hammer**: Mycorrhizas: Pipeline or Director of Belowground C Fluxes?

16:15-16:45  **Coffee**

**Interactions among Micro- and Macroorganisms I (Lynne Boddy)**

16:45  **Angela Sessitsch**: The Hidden World Within Plants: Ecological Considerations and Functioning of Microbial Endophytes (Invited lecture)
17:10  **Jan Frouz**: The effect of soil fauna in decomposition activity of soil microflora (Invited lecture)

17:35  **Julia Stevens**: Recruitment of a beneficial rhizosphere community by the common dandelion (Taraxacum officinale) from different soil types

17:50  **Max-Bernhard Ballhausen**: The sapro-rhizosphere concept: Bacteria as secondary consumers of plant-derived carbon

18:05-19:45 **Poster session I** (all posters with ODD numbers)

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**TUESDAY, 1 DECEMBER 2015**

**Biodiversity and Functioning of Forest Soils (Jan Dirk van Elsas)**

8:45  **Petr Baldrian**: Forest microbiome - diversity, functioning and dynamics (Invited lecture)

9:10  **Lynne Boddy**: Giants of the soil microbial world: foraging cord-forming fungi (Invited lecture)

9:35  **Martin Hartmann**: A decade of irrigation transforms the soil microbiome of a semi-arid pine forest

9:50  **Christina Hazard**: Genotypic Diversity Matters: Examining the diversity-ecosystem function relationship with ectomycorrhizal fungi

10:05  **Fabian Bergkemper**: Phosphorus depletion in forest soils shapes bacterial communities towards phosphorus recycling systems

10:20-10:50 **Coffee**

10:50  **David Myrold**: Microbial Community Response to Timber Harvest (Invited lecture)

11:15  **Leho Tedersoo**: Tree diversity and sampling effects on soil fungi, protists and meiofauna as revealed by multiplex ITS metabarcoding (Invited lecture)

11:40  **Hui Sun**: Microbial community shifts in structure and potential function across a boreal forest fire chronosequence

11:55  **Eva Weber**: Unravelling the ecological function of abundant but uncultivated Thaumarchaeota in acidic forest soils
12:10  **Katerina Soldanova**: Can we keep using soil ribosomal RNA as indicator of microbial activity?

12:25-14:00 **Lunch**

**Soil Biogeochemistry and Nutrient Cycling (Paolo Nannipieri)**

14:00  **James Prosser**: Bacterial ammonia oxidisers vs. archaeal ammonia oxidisers: who wins in soil, when and why? (Invited lecture)

14:25  **Søren Sørensen**: The communal gene pool in soil (Invited lecture)

14:50  **Sara Hallin**: Niche partitioning among N₂O reducing microorganisms and their importance as N₂O sinks

15:05  **Dagmar Woebken**: Combining stable isotope labeling experiments and single-cell analysis techniques to detect active microorganisms in soil

15:20  **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  **Jan Dirk van Elsas**: The soil fungal-bacterial interactome - Mechanisms of interaction, with special emphasis on *Burkholderia terrae* (Invited lecture)

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

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

17:10  **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 transcriptomics

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

17:40  **Joana Falcao Salles**: Alien escape: impacts of bacterial invasions on soil microbial communities

18:00-19:40 **Poster session II** (all posters with EVEN numbers)
Biodiversity and Functioning of Agricultural Soils (Jan Frouz)

8:45 Christoph Tebbe: Microbiology of soil primary organo-mineral complexes and particulate organic matter (Invited lecture)

9:10 George Kowalchuk: Links between patterns of soil microbial diversity and sustainable soils (Invited lecture)

9:35 Michael Bonkowski: The diversity and functions of protists in soil: problems and progress (Invited lecture)

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

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

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

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

11:00-11:30 Coffee

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

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

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

Interactions among Micro- and Macroorganisms (Jan Frouz)

12:15 Marc-André Selosse: Life strategy and life cycle of Tuber melanosporum: a pioneer hermaphrodite with high spore bank and functional dioecism (Invited lecture)
12:40 Mari Moora: Arbuscular mycorrhizal fungal communities: global and local patterns and their potential drivers (Invited lecture)

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

13:20 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 (Søren Sørensen)

15:00 Søren Sørensen: Introduction to TRAINBIODIVERSE

15:12 Anne Schöler: DNA extraction methods have little impact on microbial community composition as assessed by amplicon sequencing

15:24 Barbara Bahnmann: Fungal communities across a mixed temperate forest: Are local site properties the most influential or does whose your neighbour matter?

15:36 Claudia De La Cruz Perera: Plasmid community adaptation in long-term copper contaminated soil as revealed by a comparative mobilome approach

15:48 Valentina Imparato: Dynamics of microbial communities in pre-exposed and pristine soils in response to high concentration of biochar

16:00 Inês Nunes: Coping with copper: Soil active bacterial communities following 100 years of exposure

16:12 Samuel Jehan Auguste Jacquinod: TBD

16:24 Irshad Ul Haq: Motility, stress responses and nutrients acquisition revealed by transcriptional profiling of Burkholderia terrae upon confrontation with a fungal host

16:36 Jean-Sebastien Beaulne: Large Scale Spatial Analysis of Bacterial Communities in Lake Sediments, the Role of Physico-Chemical Parameters, Spatial Distance, Land Cover and Tropical Storms

16:48 João Raimundo: Disentangling fine soil fauna-microbial interactions in mediating key soil processes under different land-use intensity systems and climate change scenarios

17:00-17:30 Coffee
17:30 Laura Sanguino: Using CRISPRs to learn about virus-host interactions in the environment

17:42 Maria de Vries: Phylogenetic and taxonomic diversity of glycoside hydrolase family 5 and 48-cellulase genes in agricultural soil

17:54 Salvador Lladó: Are the most abundant bacteria real key players in forest soil processes? A multi-omics approach

18:06 Shamima Pathan: Seasonal variation and distribution of total and active microbial community of β-glucosidase encoding genes in coniferous forest soil

18:18 Stephanie Jurburg: Autogenic succession in the soil microbial community

18:30 Susana Santos: Effects of land use on soil ciliate diversity

18:42 Sara Gallego: TBD

18:54 Divyashri Baraniya: Proteolytic soil communities and protease activity in rhizosphere of maize plants with different Nitrogen Utilizing Efficiencies (NUE)

19:15-22:15 Conference dinner

THURSDAY, 3 DECEMBER 2015

Microbes in the Changing Environment (George Kowalchuk)

8:45 Erland Bååth: Bacterial growth responses to drying/rewetting and freezing/thawing – a tale of two patterns (Invited lecture)

9:10 Christa Schleper: Zooming in on the Functional Heterogeneity of Ammonia Oxidizing Archaea in Arctic Soils (Invited lecture)

9:35 Kornelia Smalla: Plasmid-mediated adaptation of soil bacteria to pollutants (Invited lecture)

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

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

10:30 Christian Poll: Impact of climate change on carbon cycling and soil microorganisms in an arable ecosystem
10:45  **Marc Buée**: Ectomycorrhizal and non-symbiotic fungi respond differentially to climatic parameters: what is the link with host susceptibility to climate change?

11:00-11:30 **Coffee**

11:30  **Jiří Bártá**: Vulnerability of cryoturbated carbon to climate change

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

12:00  **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 (George Kowalchuk)**

12:15  **Bruce Budowle**: Maturation of the Field of Microbial Forensics (Invited lecture)

12:40  **Jeremy Austin**: Predicting the origin of soil evidence: high throughput eukaryote sequencing and MIR spectroscopy applied to a crime scene scenario (Invited lecture)

13:05  **Sandrine Demaneche**: Microbial Soil Community Analyses for Forensic Science - Application to a Blind Test

**13:20-14:00 Conference closing**
Decomposition and Carbon Cycling

90. Tobias Arnstadt - Log decay of *Fagus sylvatica* in temperate forests and the significance of lignin modifying enzymes for the degradation process
91. Chris Bamminger - Divergent effects of pyrochar and hydrochar on greenhouse gas emissions and microbial abundances in an arable soil
92. Andrea Burešová - Composition and activity of microbial community during decomposition of plant litter on two contrasting localities
93. Juliana Conceição - The management system can influence the physiological function and social interaction of phosphate solubilizing bacteria isolated rhizosphere of *Carica papaya* L.
94. Ivana Eichlerová - Decomposition traits and enzyme production of saprotrophic fungi are shaped by the combination of their ecophysiology and taxonomy
95. Lia del Pilar Fernández - Soil bacterial diversity from different animal settlements in maritime Antarctica
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<td>Hokyung Song - Abandoned tropical tin mine site shows changes in microbial community with restoration</td>
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348. Gangavarapu Subrahmanyam - Abundance and diversity of ammonia oxidizing archaea and bacteria in long-term industrial effluent polluted soils, Gujarat, Western India

349. Karel Švec - Composition of fungal and bacterial communities in mercury polluted areas

350. María Touceda-González - Molecular characterization of the rhizobacterial communities of two Ni-hyperaccumulating subspecies of Alyssum serpyllifolium endemic to the Iberian Peninsula.

351. Gustavo Valdecantos - Biotic and abiotic factors affect the colonization and the dynamics of bacterial community assemblage in irradiated soil microcosms

352. María Vásquez Murrieta – Metal tolerance and biosorption potential of endophytic fungi isolated from Bahia absinthifolia

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354. Franco Widmer - Effects of different nanoparticles on soil microbial community structures and plant-microbe interactions

355. Yucheng Wu - Responses of Thaumarchaeotal community in agricultural soils to acidification and polycyclic aromatic hydrocarbons contamination

356. Lijuan Yan - Comparative phylogenetic analysis of bacterial community dynamics during multi-year bioremediation of oil-contaminated soil in a boreal climate

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357. Cecile Gubry-Rangin - Molecular adaptation of the ammonia monooxygenase amoA gene during the ancient and rapid diversification of terrestrial Thaumarchaeota

358. Eline van Asperen - Establishing dung fungal spores as a proxy for herbivore abundance - an experimental approach