

UNIVERSIDAD SAN FRANCISCO DE QUITO

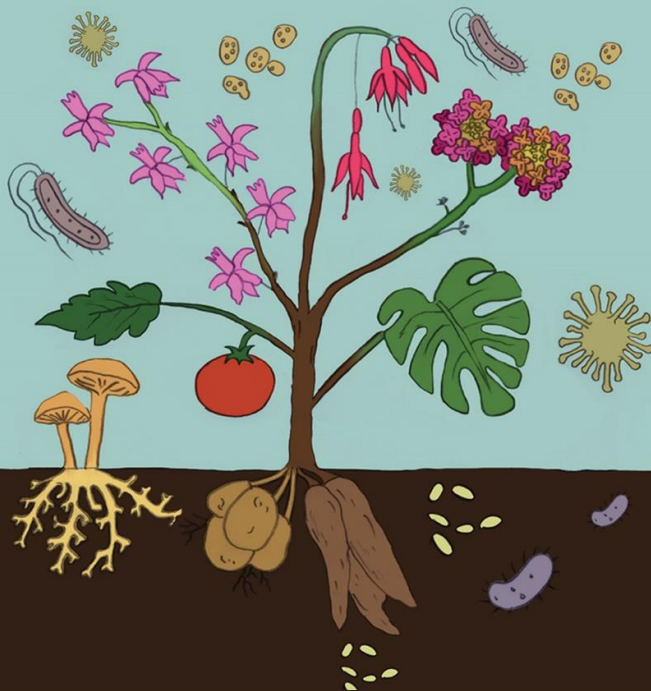
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# 4<sup>th</sup> Plant **Microbiome Symposium**

AUGUST 2023  
USFQ - QUITO - ECUADOR

# 4<sup>th</sup> Plant Microbiome Symposium



## Welcome

After successful editions in Sao Paulo, Amsterdam, and Dundee, and due to the great importance of the theme, Universidad San Francisco de Quito (USFQ) is proud to host the 4th Plant Microbiome Symposium in Quito, Ecuador, from August 1st to August 4th, 2023.

The 4th edition of the Plant Microbiome Symposium is this year's premier opportunity to connect with plant-microbiome colleagues from all over the world, where you can take advantage of outstanding plenary speakers, multiple networking events, poster fairs and receptions, in the conference and exhibition halls at the USFQ campus in Cumbaya in the valley situated East of Quito.

We welcome our Keynote speakers Jos Raaijmakers, Omri Finkel, Corné Pieterse, Britt Koskella, Joana Falcao Salles, Phil Poole, Mark Liles, Tsai Siu Mui, Gilles van Wezel, and our Invited speakers Chunxu Song, Mario Serrano, Rodrigo Mendes, Viviane Cordovez da Cunha, George Kowalchuk, Jessica Duchicela, Stephen Sherwood, and David Johnston-Monje, for kindly participating in this conference. We also welcome and thank everyone who submitted abstracts, and will be sharing their findings through short oral talks or poster presentations.

Thank you for joining us at what truly will be an exciting and memorable Plant Microbiome Symposium!

Feel very welcome at USFQ, and welcome to visit Ecuador!

On behalf of the local organizing committee,

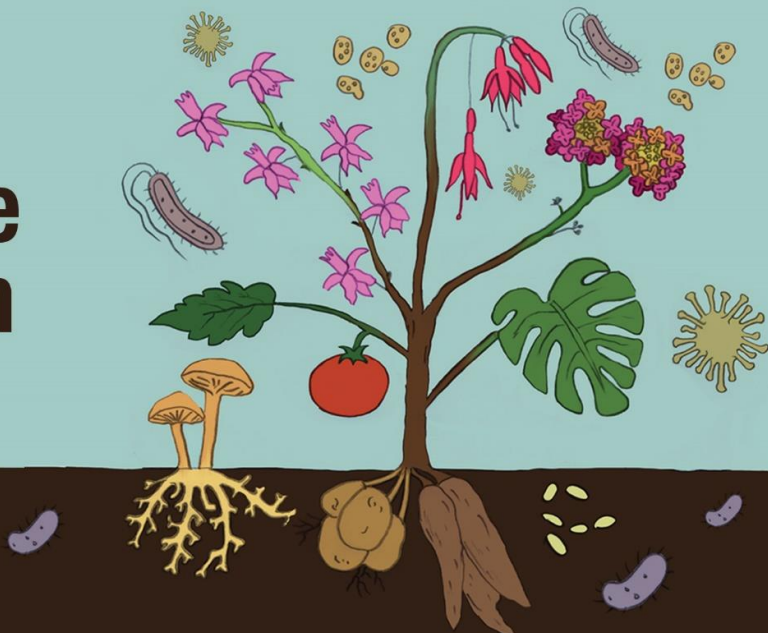
Pieter van 't Hof *PhD* and Antonio Leon-Reyes *PhD*

4<sup>th</sup> PMS official website: <https://plantmicrobiome2023.usfq.edu.ec/>

# 4<sup>th</sup> Plant Microbiome Symposium

Conference

Venue



## 4<sup>th</sup> Plant Microbiome Symposium

UNIVERSIDAD SAN FRANCISCO DE QUITO

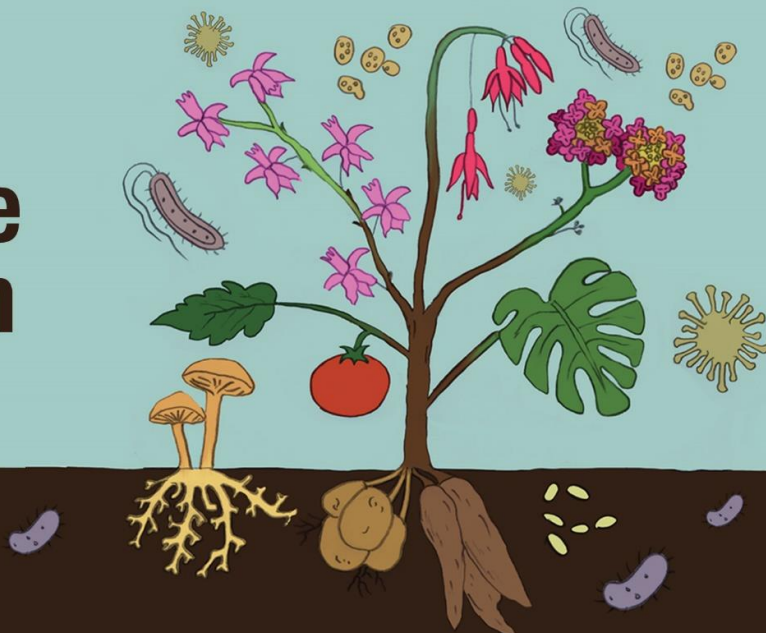


1. Teatro shakespeare
2. 1<sup>er</sup> piso Hayek
3. Tesorería Campus USFQ
4. Puente entre Hayek y Campus



# 4<sup>th</sup> Plant Microbiome Symposium

Tuesday  
August 1st



Time	Activity	Speaker
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08:00 - 09:00	REGISTRATION	
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09:00 - 09:15	OPENING	
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## Session 1:

### Plant microbiome assembly: Control by host and environmental factors

09:15 - 10:00	<b>KEYNOTE LECTURE</b> Breaking the witches' spell	<b>Jos Raaijmakers</b> <i>Netherlands Institute of Ecology Leiden University The Netherlands</i>
10:00 - 10:15	Effective seedling microbiota engineering using synthetic community inoculation on seeds	<b>Gontran Arnault</b> <i>University of Angers / INRAE France</i>
10:15 - 10:30	Untangling the Effects of Plant Genotype and Soil Conditions on the Assembly of Bacterial and Fungal Communities in the Rhizosphere of the Wild Andean Blueberry ( <i>Vaccinium floribundum</i> Kunth)	<b>Milton Gordillo</b> <i>Universidad San Francisco de Quito Ecuador</i>

10:30 - 11:00	COFFEE BREAK	
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LOBBY – SHAKESPEARE THEATER

11:00 - 11:30	<b>INVITED TALK</b> The call of the wild: Disentangling the mechanism of green foxtail microbiome for plant health	<b>Chunxu Song</b> <i>China Agricultural University China</i>
11:30 - 11:45	Uncovering Metabolic Interactions Between Bacterial and Fungal Microbial Communities in Arabidopsis root microbiota Using a High-Throughput 3D Printed Multichannel Bioreactor System	<b>Guillaume Chesneau</b> <i>Max Planck Institute for Plant Breeding Research Germany</i>
11:45 - 12:00	The rhizosphere microbiome of wild tomato in its center of origin	<b>Stalin Sarango flores</b> <i>Netherlands Institute of Ecology Leiden University The Netherlands</i>

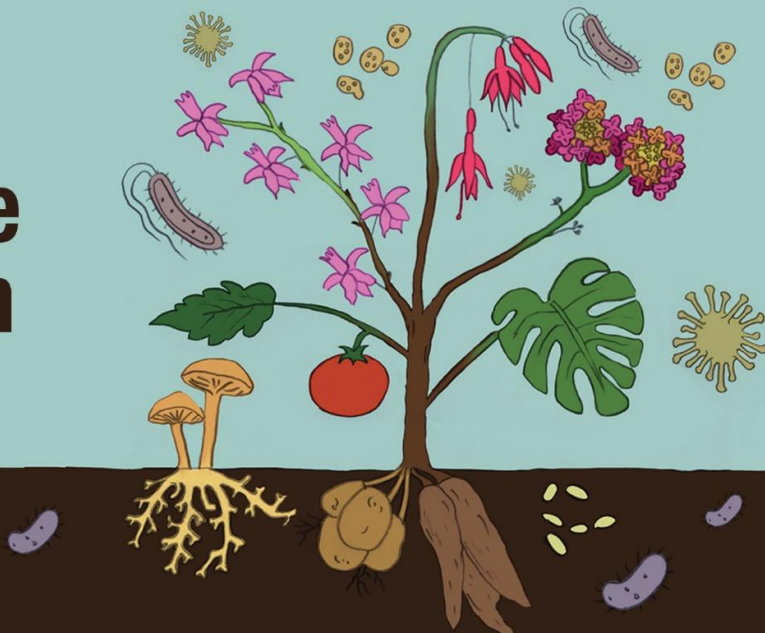
12:00 - 13:45	LUNCH	
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CAMPUS USFQ

# 4<sup>th</sup> Plant Microbiome Symposium

Tuesday

August 1st



## Session 2:

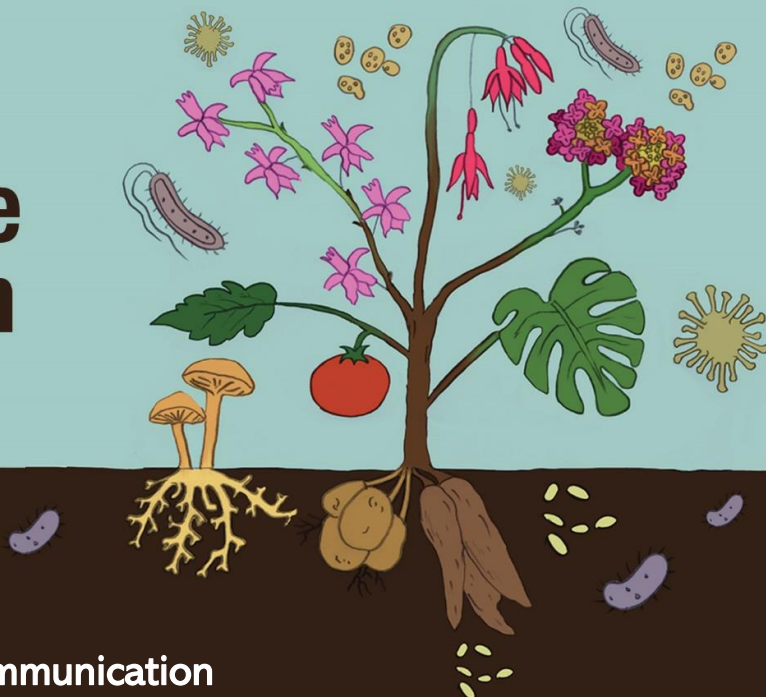
## Microbiome-associated plant phenotypes: Abiotic & biotic stress tolerance

Time	Lecture	Speaker
	<b>KEYNOTE LECTURE</b>	<b>Omri Finkel</b> <i>The Hebrew University of Jerusalem Israel</i>
13:45 - 14:30	Utilizing <i>Chlamydomonas</i> to elucidate bacterial antagonism of plants	
14:30 - 14:45	Studies on root-associated ACC deaminase <i>Pseudomonas</i> strains under osmotic stresses	<b>Susan Mosquito</b> <i>Rothamsted Research United Kingdom</i>
14:45 - 15:00	A walk on the wild side: exploring the functional potential of Andean soil microbiomes to enhance tolerance of potato to late blight disease	<b>Dario X. Ramirez-Villacis</b> <i>Netherlands Institute of Ecology Utrecht University The Netherlands</i>
15:00 - 15:15	Impact of the fungal pathogen <i>Fusarium oxysporum</i> on the taxonomic and functional diversity of the common bean root microbiome	<b>Lucas William Mendes</b> <i>Center for Nuclear Energy in Agriculture University of Sao Paulo Brazil</i>
15:15 - 15:30	Downy-mildew associated resistobiomes	<b>Jelle Spooren</b> <i>Utrecht University The Netherlands</i>
15:30 – 16:00	COFFEE BREAK	LOBBY – SHAKESPEARE THEATER
	<b>INVITED TALK</b>	<b>Mario Serrano</b> <i>Universidad Nacional Autónoma de México Mexico</i>
16:00 - 16:30	Identification and characterization of plant biostimulants from amphibians' skin	
16:30 - 16:45	<i>Pseudomonas brassicacearum</i> control of the Root rot pathogen <i>Aphanomyces euteiches</i> via a novel nitroimidazole antibiotic	<b>Zayda Morales Moreira</b> <i>University of British Columbia Canada</i>
16:45 - 17:00	Effects of soil conditions on microbial communities associated with native plants in the hyper-arid core of the Atacama Desert	<b>Jonathan Fortt</b> <i>Universidad Católica del Norte Chile</i>
17:00 - 17:15	Volatile-mediated bacterial recruitment in the rhizosphere of tomato plants under an aboveground herbivory stress	<b>Muhammad Syamsu Rizaludin</b> <i>Netherlands Institute of Ecology The Netherlands</i>
17:15 – 19:15	POSTER SESSIONS	1ST FLOOR – HAYEK BUILDING

# 4<sup>th</sup> Plant Microbiome Symposium

Wednesday

August 2nd



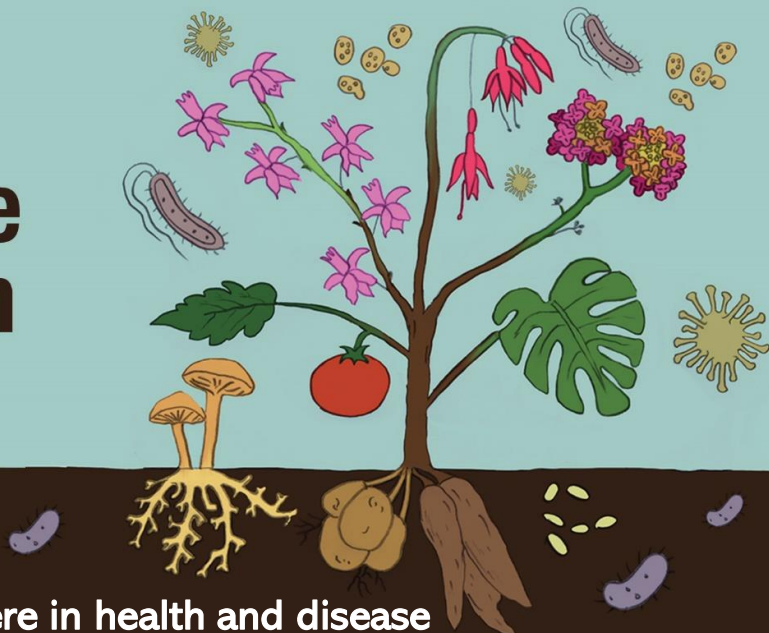
## Session 3: Plant microbiome communication

Time	Lecture	Speaker
<b>08:30 - 09:15</b>	<b>KEYNOTE</b> Coumarin communication along the microbiome-root-shoot axis	<b>Corné Pieterse</b> <i>Utrecht University</i> <i>The Netherlands</i>
<b>09:15 - 09:30</b>	The key role of mannitol and mannitol utilization cluster ( <i>mtl</i> ) genes in biofilm formation and plant root attachment by the plant growth-promoting <i>Pseudomonas granadensis</i> CT364	<b>Eva Cea Torrecassana</b> <i>Newcastle University</i> <i>United Kingdom</i>
<b>09:30 - 09:45</b>	Identification of specialized root exudates associated with microbiome assembly of wild and domesticated tomato	<b>Jie Hu</b> <i>Netherlands Institute of Ecology</i> <i>NIOO-KNAW</i> <i>The Netherlands</i>
<b>09:45 - 10:00</b>	Impact of <i>Bacillus subtilis</i> eps and TasA genes defective on rhizosphere microbiome assembly of tomato	<b>Caroline Sayuri Nishisaka</b> <i>EMBRAPA Environment / ESALQ /</i> <i>Universidade do Sao Paulo</i> <i>Brazil</i>
<b>10:00 – 10:30</b>	<b>COFFEE BREAK</b>	<b>LOBBY – SHAKESPEARE THEATER</b>
<b>10:30 - 11:00</b>	<b>INVITED TALK</b> Microbiome-plant conversation in the rhizosphere	<b>Rodrigo Mendes</b> <i>EMBRAPA Environment</i> <i>Brazil</i>
<b>11:00 - 11:15</b>	Aphid infestation changes metabolic activity and composition of bacterial communities in the wheat rhizosphere	<b>Sandra Cortés-Patiño</b> <i>Rothamsted Research</i> <i>The University of Nottingham</i> <i>United Kingdom</i>
<b>11:15 - 11:30</b>	Identification of the conserved <i>iol</i> gene cluster involved in rhizosphere competence in <i>Pseudomonas</i>	<b>Juan José Sánchez Gil</b> <i>Utrecht University</i> <i>The Netherlands</i>
<b>11:30 - 11:45</b>	<i>Bacillus</i> modulates key developmental traits and production of secondary metabolites in response to the plant cell wall polymer pectic homogalacturonan	<b>Farah Boubsi</b> <i>TERRA Teaching and Research Center</i> <i>University of Liège</i> <i>Belgium</i>
<b>11:45 – 13:30</b>	<b>LUNCH</b>	<b>CAMPUS USFQ</b>

# 4<sup>th</sup> Plant Microbiome Symposium

Wednesday

August 2nd



## Session 4: The plant phyllosphere in health and disease

Time

Lecture

Speaker

13:30 - 14:15	<b>KEYNOTE LECTURE</b> The plant phyllosphere in health and disease	<b>Britt Koskella</b> <i>University of California, Berkeley United States of America</i>
14:15 - 14:30	Ultra-high resolution amplicon sequencing reveals cross-kingdom antagonists and synergists driving fungal infections in the wheat phyllosphere	<b>Luzia Stalder</b> <i>University of Neuchâtel / ETH Zurich Switzerland</i>
14:30 - 14:45	Production and degradation of indole 3-acetic acid in the phyllosphere microbiome	<b>Johan Leveau</b> <i>University of California, Davis United States of America</i>
14:45 - 15:15	<b>INVITED TALK</b> Ecology and functional diversity of phyllosphere yeasts	<b>Viviane Cordovez da Cunha</b> <i>Netherlands Institute of Ecology The Netherlands</i>
15:15 - 15:30	Activity and diversity of prophages harbored by wheat phyllosphere bacteria	<b>Peter Erdmann Dougherty</b> <i>University of Copenhagen Denmark</i>
15:30 - 15:45	Genomics, transcriptomics and metabolomics of phyllosphere yeasts	<b>Linda Gouka</b> <i>Netherlands Institute of Ecology The Netherlands</i>

15:45 – 16:15 COFFEE BREAK

LOBBY – SHAKESPEARE

## Session 5: Defining the ecological rules of plant microbiome assembly

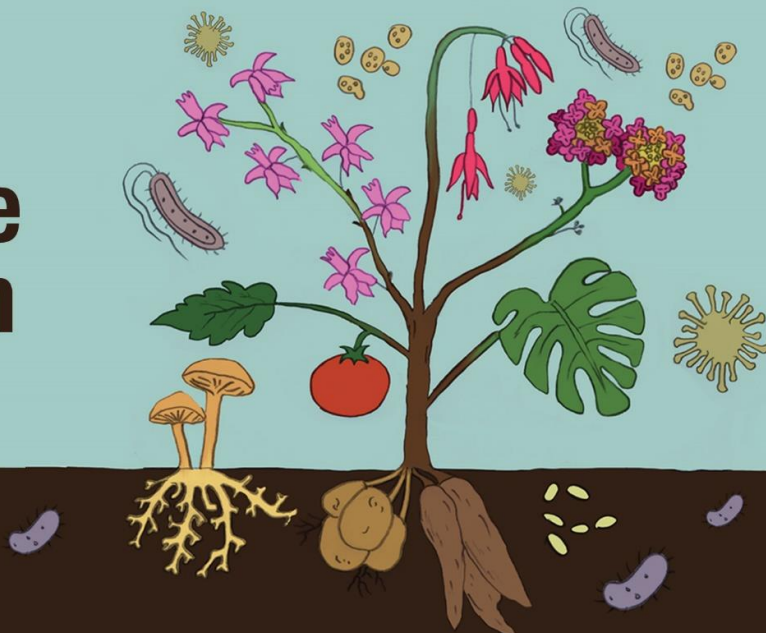
16:15 - 17:00	<b>KEYNOTE LECTURE</b> Defining the ecological rules of plant microbiome assembly	<b>Joana Falcao Salles</b> <i>University of Groningen The Netherlands</i>
17:00 - 17:15	Ecological and environmental drivers of virus co-infection in wild plant populations	<b>Hanna Susi</b> <i>University of Helsinki Finland</i>
17:15 - 17:30	Exploring plant invasion in the Galapagos Islands	<b>Antonio León Reyes</b> <i>Universidad San Francisco de Quito Ecuador</i>
17:30 - 17:45	Seed saving and microbiome cycling	<b>Mason Kamalani Chock</b> <i>University of California, Berkeley United States of America</i>
17:45 - 18:15	<b>INVITED TALK</b> <i>To be announced</i>	<b>George Kowalchuk</b> <i>Utrecht University The Netherlands</i>



# 4<sup>th</sup> Plant Microbiome Symposium

Thursday

August 3rd



## Session 6: Plant mechanisms to interact with beneficial microorganisms

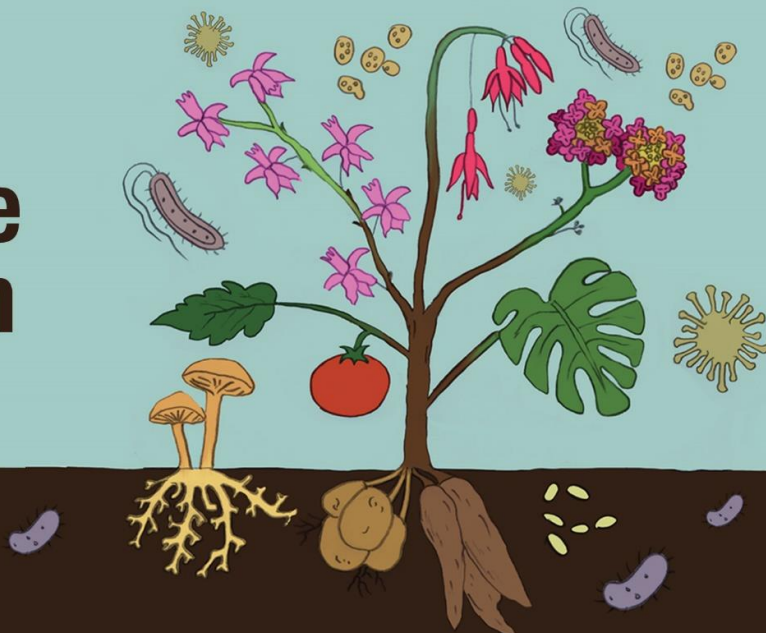
Time	Lecture	Speaker
<b>KEYNOTE LECTURE</b>		
08:30 - 09:15	From microbiome to molecular analysis of plant microbe interactions	<b>Philip Poole</b> University of Oxford United Kingdom
09:15 - 09:30	The unsuspected mutualism between <i>Rhizophagus irregularis</i> and <i>Bacillus velezensis</i> confers enhanced biocontrol functionality	<b>Adrien Anckaert</b> University of Liège Gembloux Agro-Bio Tech Belgium
09:30 - 09:45	Metatranscriptomics captures dynamic shifts in mycorrhizal coordination in boreal forests	<b>Simon Roy Law</b> Commonwealth Scientific and Industrial Research Organisation (CSIRO) - Australia
09:45 - 10:00	The interplay of dual plant colonization by Soybean Mosaic Virus and arbuscular mycorrhizal fungi of field- and greenhouse-grown soybean plants	<b>Sietske van Bentum</b> Utrecht University The Netherlands
10:00 – 10:30	<b>COFFEE BREAK</b>	<b>LOBBY – SHAKESPEARE THEATER</b>
<b>INVITED TALK</b>		
10:30 - 11:00	Symbionts as filters of plant colonization of islands: Tests of expected patterns and environmental consequences in the Galapagos	<b>Jessica Duchicela</b> Universidad de las Fuerzas Armadas Ecuador
11:00 - 11:15	<i>Solanum tuberosum</i> Group Phureja endophyte microbiome characterization and its bacterial endophyte functionality against phytopathogens	<b>Estefania Peña-Zuniga</b> Universidad San Francisco de Quito Ecuador
11:15 - 11:30	"Cry for help" upon pathogen attack across the Brassicaceae family	<b>Melissa Uribe Acosta</b> Utrecht University The Netherlands
11:30 - 11:45	Characterization and biocontrol potential of a new <i>Bacillus nakamurai</i> strain isolated in Burundi	<b>François Nimbeshaho</b> Gembloux AgroBio Tech Faculty University of Liège - Belgium
<b>INVITED TALK</b>		
11:45 - 12:15	Putting microbiology to work: Enabling farmer-led ecosystem restoration through ecological literacy and farmer-led experimentation	<b>Stephen Sherwood</b> Fundacion EkoRural - Ecuador Wageningen University The Netherlands
12:15 – 14:00	<b>LUNCH</b>	<b>CAMPUS USFQ</b>



# 4<sup>th</sup> Plant Microbiome Symposium

Thursday

August 3rd



## 4th PMS - SOCIAL PROGRAM:

Time	Activity
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14:00 - 15:15	Bus transfer to historic centre of Quito
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15:15 - 17:30	Guided Quito City tour
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17:30 - 18:00	Bus transfer to Social Evening at <b>PIM'S PANECILLO QUITO</b>
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18:00 - 23:00	Conference Dinner and Social Evening at <b>PIM'S PANECILLO QUITO</b>
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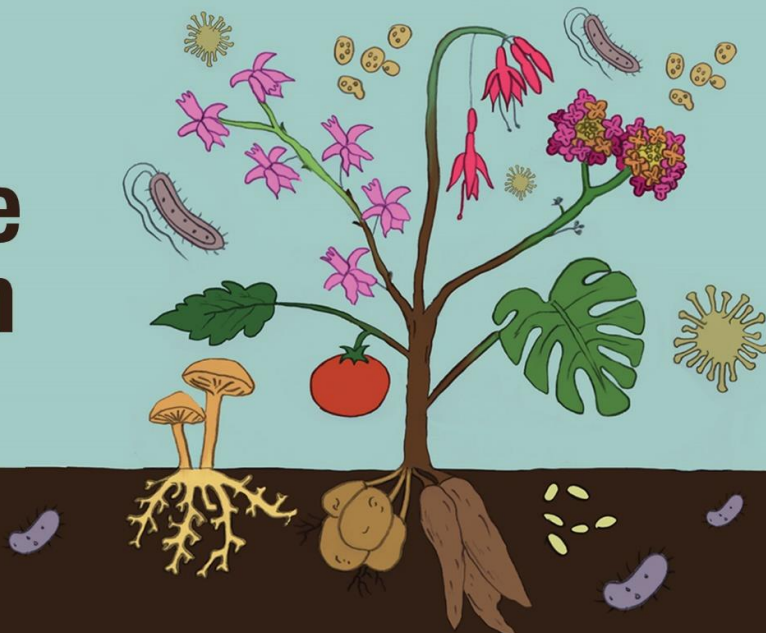


23:00	Bus transfer to hotels Quito
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# 4<sup>th</sup> Plant Microbiome Symposium

Friday

August 4th



## Session 7:

Technological advances and translational application to crops and soil health

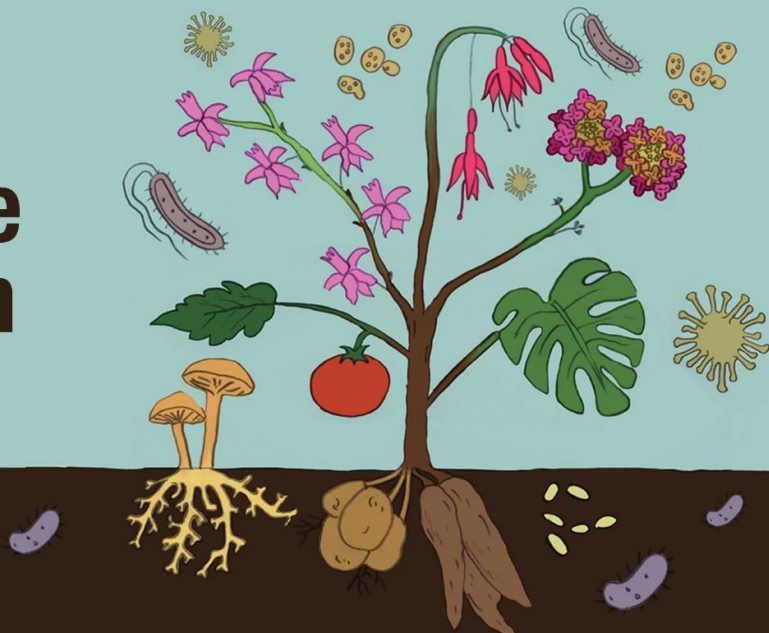
Time	Lecture	Speaker
<b>08:45 - 09:30</b>	<b>KEYNOTE LECTURE</b> Soil microbiomes as a source of novel biosynthetic gene clusters and plant growth-promoting rhizobacteria	<b>Mark Liles</b> <i>Auburn University</i> <i>United States of America</i>
<b>09:30 - 09:45</b>	Probing the leaf micro-environment with whole cell yeast biosensors to establish principles of microbiome coexistence	<b>Julian A. Liber</b> <i>Duke University</i> <i>United States of America</i>
<b>09:45 - 10:00</b>	Rice straw recycling increased soil microbial functional diversity during the decomposition of rice straw	<b>Vanessa Otero Jiménez</b> <i>National University of Colombia</i> <i>Colombia</i>
<b>10:00 - 10:15</b>	The UK Crop Microbiome CryoBank Resource	<b>Payton Yau</b> <i>Scotland's Rural College (SRUC)</i> <i>United Kingdom</i>
<b>10:15 - 10:30</b>	Investigating the potential roles of plant microbial communities in the differential competitive ability between weedy and cultivated <i>Oryza sativa</i>	<b>Rachel Tavares</b> <i>University of Massachusetts Amherst</i> <i>United States of America</i>
<b>10:30 - 11:00</b>	<b>COFFEE BREAK</b>	<b>LOBBY – SHAKESPEARE</b>
<b>11:00 - 11:15</b>	Microbiome-based prediction of potato growth in the field	<b>Yang Song</b> <i>Utrecht University</i> <i>The Netherlands</i>
<b>11:15 - 11:30</b>	Plant-microbe and plant-plant interactions favouring iron content in crop plants	<b>Barbara Pivato</b> <i>Research for Agriculture, Food and Environment - INRAE</i> <i>France</i>
<b>11:30 - 11:45</b>	Grapevine Trunk Disease and the Fungal Mycobiome of Oregon Vineyards (USA)	<b>Jessie Zimmerman</b> <i>Oregon State University</i> <i>United States of America</i>
<b>11:45 - 12:15</b>	<b>INVITED TALK</b> Seed Transmitted Microbes are foundational to the Microbiomes of Crop Plants and have Agricultural Potential	<b>David Johnston-Monje</b> <i>Max Planck Tandem Group in Plant Microbial Ecology</i> <i>Universidad del Valle</i> <i>Colombia</i>
<b>12:15 - 14:00</b>	<b>LUNCH</b>	<b>CAMPUS USFQ</b>



# 4<sup>th</sup> Plant Microbiome Symposium

Friday

August 4th



Special Closing Keynotes: *Plant microbiomes in a changing world*

Time	Lecture	Speaker
14:00 - 14:30	<b>SPECIAL CLOSING KEYNOTE</b> <i>Plant Microbiomes in a changing world</i>	<b>Tsai Siu Mui</b> Center for Nuclear Energy in Agriculture University of Sao Paulo Brazil
14:30 - 15:00	<b>SPECIAL CLOSING KEYNOTE</b> <i>Plant Microbiomes in a changing world</i>	<b>Gilles van Wezel</b> Leiden University The Netherlands
15:00 - 15:45	<b>CLOSING CEREMONY</b>	



15:45 – 17:00 FAREWELL DRINKS

TO BE ANNOUNCED