



# 7th

# Swiss Microbial Ecology Meeting

## SME 2019

### PROGRAM

**FNSNF**

FONDS NATIONAL SUISSE  
SCHWEIZERISCHER NATIONALFONDS  
FONDO NAZIONALE SVIZZERO  
SWISS NATIONAL SCIENCE FOUNDATION

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Swiss Academy of Sciences  
Akademie der Naturwissenschaften  
Accademia di scienze naturali  
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 SGM · SSM

 **ISME**

  
ÉCOLE POLYTECHNIQUE  
FÉDÉRALE DE LAUSANNE

THE INCREDIBLE  
DIVERSITY OF MICROBIAL  
ECOLOGY RESEARCH

**January 30-February 1, 2019**

Aquatis Conference Center,  
Lausanne

#### Scientific organisation

Christof Holliger  
Swiss Society for Microbiology, Lausanne

#### Congress organisation

meeting.com Congress organisation  
1033 Cheseaux-sur-Lausanne  
[www.meeting-com.ch](http://www.meeting-com.ch)

#### Online registration on

[www.meeting-com.ch/Conferences & Meetings](http://www.meeting-com.ch/Conferences%20&%20Meetings)

# General information

## Venue

Aquatis Hotel & Conference Center, Lausanne  
Route de Berne 148, 1010 Lausanne/Switzerland  
T +41 (0)21 654 24 24 – info@aquatis-hotel.ch – web aquatis-hotel.ch

## Registration & Congress secretariat

Meeting-com Congress Organisation  
Rue des Pâquis 1, CP 100, CH-1033 Cheseaux-sur-Lausanne  
T 021 312 92 61 – F 021 312 92 63 – nicole.giacomini@meeting-com.ch  
Online registration on [www.meeting-com.ch](http://www.meeting-com.ch)

## Accommodation

To be booked directly to the Aquatis Hotel at the rate of: CHF 130.00/single room/night or CHF 150.00/double room/night (breakfast included, city tax not included) - ([www.aquatis-hotel.ch](http://www.aquatis-hotel.ch)). Please, mention the conference when booking

## Language

The language of the congress is English.

## Credits

Credit points on demand to the SSM.

# Welcome word

Dear colleagues,

I would like to invite you to the next Swiss Microbial Ecology meeting SME 2019 that will be organized end of January 2019 in Lausanne, Switzerland.

It is now well recognized that the microbial world is full of biodiversity with microbes that have metabolic features and live styles that surprise us again and again. A similar diversity can be found in Switzerland with regard to research on the ecology of these microorganisms. The scientific committee composed of researchers working at EPFL reflects that perfectly well since their research topics go from bacterial response to environmental mechanics, over the ecology of viruses, stream biofilms, contaminated sites and wastewater treatment systems, the pathoecology of *Vibrio cholera* to geomicrobiology. The invited speakers that have accepted our invitation will make this an exciting event. However, only your participation with oral and poster presentation will make it a real success.

The meeting venue is the Aquatis Conference Center where there is also the largest freshwater aquarium-vivarium in Europe. An exclusive visit for SME2019 participants will allow to appreciate also this visible biodiversity in otherwise difficult to observe ecosystems.

I hope to welcome you beginning of next year in Lausanne,

Christof Holliger  
Swiss Society for Microbiology  
Lausanne

# Scientific committee

<b>Tom Battin</b>	EPFL ENAC IIE SBER
<b>Rizlan Bernier-Latmani</b>	EPFL ENAC IIE EML
<b>Melanie Blokesch</b>	EPFL SV GHI UPBLO
<b>Christof Holliger</b>	EPFL ENAC IIE LBE
<b>Tamar Kohn</b>	EPFL ENAC IIE LCE
<b>Alex Persat</b>	EPFL SV GHI UPPERSAT
<b>Pierre Rossi</b>	EPFL ENAC IIE GR-CEL

# Kind thanks to our sponsors

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Swiss Academy of Sciences  
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FÉDÉRALE DE LAUSANNE

# Program

## Wednesday, January 30, 2019

12.00	Registration	
15.00	Welcome word	<b>PLENARY</b>
15.15-15.45	<b>Opening Keynote 1</b> <b>Unraveling Complex Interactions in Microbial Communities</b> Karsten Zengler, UC San Diego (US)	<b>PLENARY</b>
15.45-16.15	<b>Opening Keynote 2</b> <b>Why diversity matters: Symbiont heterogeneity provides multiple benefits to deep-sea mussels from hydrothermal vents</b> Nicole Dubilier, MPI Bremen (DE)	<b>PLENARY</b>
<b>16.15-16.45</b>	<b>Coffee break – networking</b>	<b>FOYER HOTEL</b>
16.45-18.30	<b>SESSION I</b> Chaired by Rizlan Bernier-Latmani	<b>PLENARY</b>
16.45-17.15	<b>One carbon metabolism of sulfate reducing bacteria</b> Alfons Stams, University of Wageningen (NL)	
17.15-17.30	<b>Microbial Ecology of anaerobic phototrophic sulfur bacteria in the meromictic Lake Cadagno</b> – Nicola Storelli, SUPSI, Bellinzona, Switzerland	
17.30-17.45	<b>Small-scale variability study of Freshwater Bacterioplankton</b> Natalia Krempaska, University of Zürich, Switzerland	
17.45-18.00	<b>Which parameters affect the nitrogen cycling microbial community composition in lake sediments?</b> – Kathrin Baumann, EAWAG, Kastanienbaum, Switzerland and EPFL, Lausanne, Switzerland	
18.00-18.15	<b>The Microbial N-Transforming Community and N Biogeochemistry in the Redox Transition zone of Lake Lugano</b> Jana Tischer, University of Basel, Basel, Switzerland	
18.15-18.30	<b>Effect of agricultural landscape on the dissemination of <math>\beta</math>-lactams and sulfonamides resistance genes in the lake of Brêt, Switzerland</b> – Amandine Laffite, University of Geneva, Switzerland	
<b>19.30-open end</b>	<b>Dinner and social event</b>	<b>AQUATIS HOTEL</b>

# Program

Thursday, January 31, 2019

08.30-10.15	<b>SESSION II</b> Chaired by Tamar Kohn	<b>PLENARY</b>	
08.30-09.00	<b>Ocean microbial community composition and gene expression at global scale</b> Shinichi Sunagawa, ETH Zürich (CH)		
09.00-09.15	<b>Environmental toxicity promotes positive interactions in a synthetic bacterial community</b> – Philippe Piccardi, UNIL, Lausanne, Switzerland		
09.15-09.30	<b>Effect of a mixed consortium of three bacillus strains on plant growth promotion of oat and its consequence on native microbial communities</b> – Isha Jamil, University of Neuchâtel, Neuchâtel, Switzerland		
09.30-09.45	<b>Manipulation from within – How does Functional Niche Occupancy impact a next Generation Probiotic?</b> – Clarissa Schwab, ETHZ, Zürich, Switzerland		
09.45-10.00	<b>Effect of Fluctuating Environmental Conditions on Spatial Self-organization and Community Stability</b> – Davide Ciccarese, ETHZ, Zürich, Switzerland and EAWAG, Dübendorf, Switzerland		
10.00-10.15	<b>Interactions within interactions: phage assemblages and their host microbiota in the honey bee gut</b> – Germán Bonilla-Rosso, UNIL, Lausanne, Switzerland		
<b>10.15-10.45</b>	<b>Coffee break – networking</b>		<b>FOYER HOTEL</b>
10.45-12.30	<b>SESSION III</b> Chaired by Melanie Blokesch	<b>PLENARY</b>	
10.45-11.15	<b>Evolution of Streptomyces – how to cope with life in a complex environment</b> Paul Hoskisson, University of Strathclyde (GB)		
11.15-11.30	<b>Mechanisms underlying the inhibition of Phytophthora infestans by cyanogenic Pseudomonas</b> – Abhishek Anand, University of Fribourg, Fribourg, Switzerland		
11.30-11.45	<b>Mycosphere Effects on Phage Transport and Retention</b> Lukas Y. Wick, Helmholtz Centre for Environmental Research (UFZ), Leipzig, Germany		
11.45-12.00	<b>Oxalotrophy as a biocontrol strategy</b> – Aislinn Estoppey, University of Neuchâtel, Neuchâtel, Switzerland		
12.00-12.15	<b>Overwintering honey bees exhibit a distinct gut microbiota composition</b> – Olivier Emery, UNIL, Lausanne, Switzerland		
12.15-12.30	<b>Sulfur cycling in the terrestrial deep subsurface</b> – Emma Bell, EPFL, Lausanne, Switzerland		
<b>12.30-13.30</b>	<b>Lunch</b>		<b>HOTEL RESTAURANT</b>
13.30-14.00	<b>Shapes, composition and preservation of photosynthetic microbial communities on the early Earth</b> Tanja Bosak, MIT Cambridge (US)		
14.00-15.00	<b>POSTER SESSION I – uneven poster numbers</b>	<b>PLENARY</b>	
<b>15.00-15.30</b>	<b>Coffee break – networking</b>		<b>FOYER HOTEL</b>
15.30-17.00	<b>SESSION IV</b> Chaired by Pierre Rossi	<b>PLENARY</b>	
15.30-16.00	<b>Ocean Sampling Day, an Example for Science 2.0?</b> Frank Oliver Glöckner, MPI Bremen (DE)		
16.00-16.15	<b>Effect of soil, climatic and biotic factors on bacterial communities across the diverse landscape of Switzerland</b> Johanna Mayerhofer – Agroscope, Zurich, Switzerland		
16.15-16.30	<b>Temperature Sensitivity of the high alpine soil microbiome</b> Johanna Donhauser - Swiss Federal Research Institute, Birmensdorf, Switzerland		
16.30-16.45	<b>Effects of freeze-thaw cycles frequencies on arctic and high-alpine soil microbial communities</b> – Carla Perez-Mon, Swiss Federal Research, Birmensdorf, Switzerland		
16.45-17.00	<b>Integrating metabolic versatility into spatially-explicit models of soil bacterial life</b> – Benedict Borer, ETHZ, Zürich, Switzerland		
17.00-18.00	<b>POSTER SESSION II – even poster numbers</b>	<b>PLENARY</b>	
<b>18.30-20.00</b>	<b>Visit of AQUATIS, the largest freshwater aquarium</b> Aquarium Aquatis Vivarium in Europe		
<b>20.00-open end</b>	<b>Individual dinner in Lausanne</b>		

# Program

**Friday, February 1, 2019**

08.30-10.15 **SESSION V** **PLENARY**

Chaired by Tom Battin

08.30-09.00 **Mining zebrafish microbiota reveal broad-spectrum individual and community-level resistance to infection by fish pathogens**

Jean-Marc Ghigo, Institut Pasteur, Paris (F)

09.00-09.15 **Predatory Behavior of Vibrio Cholerae Strains Highlight possible Adaptations to Different Lifestyles**

Natália Carolina Drebes Dörr, EPFL, Lausanne, Switzerland

09.15-09.30 **Priority Effects Influence Microbiota structure in the Arabidopsis Phyllosphere**

Charlotte Carlström, ETHZ, Zürich, Switzerland

09.30-09.45 **Dormancy and spores' formers: Investigate non-standard models**

Mathilda Hayoz, University of Neuchâtel, Neuchâtel, Switzerland

09.45-10.00 **Nutrient fluctuations characteristic of microscale heterogeneity reduce bacterial growth rates**

Jen Nguyen, ETHZ, Zürich, Switzerland and MIT, Massachusetts Cambridge, USA

10.00-10.15 **Following Horizontal Gene Transfer in real time**

Marc Garcia-Garcera, UNIL, Lausanne, Switzerland

**10.15-10.45 Coffee break – networking** **FOYER HOTEL**

10.45-12.30 **SESSION VI** **PLENARY**

Chaired by Alexandre Persat

10.45-11.15 **Persistent airway infections – genomic and phenomic dynamics**

Soren Molin, DTU Copenhagen (DK)

11.15-11.30 **Small-scale Heterogeneity in Drinking Water Biofilms**

Lisa Neu EAWAG, Dübendorf, Switzerland

11.30-11.45 **Influence of Wastewater Composition on the Microbial Communities of Aerobic Granular sludge**

A. Adler, EPFL, Lausanne, Switzerland

11.45-12.00 **Effects of light / dark diel cycles on the versatile metabolism of purple non-sulfur phototrophic bacteria and their translation for water resource recovery**

Marta Cerruti, Delft University of Technology, Delft, The Netherlands

12.00-12.15 **The influence of flow and geometric constraints on bacterial transport and attachment**

E. Secchi, ETHZ, Zürich, Switzerland

12.15-12.30 **Microcystin removal by mature biofilms during membrane water filtration**

Marisa O.D.Silva, University of Zürich, Switzerland

12.30-13.00 **CONCLUDING REMARKS, POSTER PRIZE** **PLENARY**  
**OUTLOOK TO SME 2021**

**13.00 Lunch upon registration** **HOTEL RESTAURANT**

# Poster presentations

- P 01** Synthetic Community Experiments show a role of Community Diversity and Key Players in Plant Protection in Arabidopsis Thaliana
- P 02** Antibiotic resistance on bacterial seed banks in sediments from environments with contrasting human impact
- P 03** Resistance, resilience and ecological stability of anammox consortia to transient oxygen disturbances
- P 04** Microbial carbon utilization in dry and wet Arctic tundra soils under elevated temperature
- P 05** The taxis physiology of the purple sulfur bacterium Chromatium okenii
- P 06** Local cell distribution and habitat fragmentation affects the spread of plasmids in SOIL bacterial populations
- P 07** CO<sub>2</sub> and H<sub>2</sub>S Assimilation rate of most important Phototrophic Sulfur Bacteria from the Lake Cadagno Chemocline
- P 08** The abundance and diversity of viruses in alpine stream biofilms
- P 09** Imaging the aerobic granular sludge microbial community using light-sheet fluorescence microscopy
- P 10** Systemic: System Efficiency of Microbial Consortia
- P 11** To spore or not to spore an insight into the environmental sporobiota
- P 12** Quantification of phage-to-host ration by next generation sequencing
- P 13** Anaerobic Biodegradation of organohalide pollutants: a crucial step towards the elucidation of proteins involved
- P 14** Spatial niches and temporal dynamics of planktonic freshwater methanotrophs
- P 15** Diversity of the insect pathogenic fungi Metarhizium spp. and Beauveria spp. in soils of three different habitats
- P 16** Dissimilarities in polyphosphate accumulation between shewanella loihica and the model bacterium shewanella oneidensis
- P 17** The assembly of finished genomes from low complex communities and novel insights we gain into strain diversity and an active phage systems
- P 18** RDHK Family, Regulators dedicated to Organohalide Respiration - Sequence Diversity and Functional Prediction
- P 19** Harnessing the Power of Plant-associated Bacteria for Crop Protection
- P 20** Dissecting the Bistable Switch Governing the Activity of a Mobile Element in Pseudomonas
- P 21** Hydration dynamics alters species composition of a representative soil bacterial community inhabiting unsaturated porous Microcosms
- P 22** Crowdsourcing and functional redundancy in the mobile gene pool of the honey bee gut microbiota
- P 23** Flow plays a key role in determining the bacterial degradation dynamics of prototype marine aggregates.
- P 24** Unveiling biofilm architectural differentiation in sedimentary environments
- P 25** An automated system for OCT imaging of biofilms
- P 26** Biodiversity in soils: the role of fungal driven dispersal in the spatial structuration of bacterial competitors
- P 27** The fungal microbiota: who is there and why?
- P 28** Inactivation of humal viral pathogens by protists: toward biocontrol of viral contaminants?
- P 29** Biofilm formation in porous media: a microfluidic approach
- P 30** Quantifying the dynamics of motility and chemotaxis of marine bacteria in situ
- P 31** Differential gene expression of pseudomonas veron II 1YdBTEX2 in different polluted soils: an overview of how microorganisms adapt to polluted environments
- P 32** High-throughput monitoring of microbial community assembly in controlled microenvironments to understand the building blocks of the ocean's microbiome
- P 33** Harnessing bacterial fungal interactions for the biorecovery of valuable metallic compounds in industrial waste
- P 34** Isolation of bacterial fungal couples and their interaction with AG and CU in order to ensue nanoparticles (NPS)
- P 35** Endofungal bacteria – New insights into bacterial-fungal coexistence
- P 36** DIRECT MEASUREMENT OF THE PHYCOSPHERE VIA RAMAN MICROSCOPY
- P 37** Pheno-chip: A single cell photo-phenomic platform
- P 38** Dissecting promoter bistability of ICEclc
- P 39** Manganese-iron-supported sulfate-dependent anaerobic oxidation of methane by candidatus methanoperedens in lacustrine sediments
- P 40** Current and future spatial distribution of the tick Ixodes ricinus – host of the Rhabdochlamydiae bacterial pathogens – in Switzerland

# Registration form

**7th Swiss Microbial Ecology Meeting – SME 2019**

**January 30-February 1, 2019 – Aquatis Conference Center, Lausanne**

## Registration and payment online through

[www.meeting-com.ch](http://www.meeting-com.ch)



Title \_\_\_\_\_

Institution \_\_\_\_\_

First name \_\_\_\_\_

Family name \_\_\_\_\_

Street/Address \_\_\_\_\_

Postal code/City/Country \_\_\_\_\_

E-mail \_\_\_\_\_

## Registration fee

PhD Student

CHF 350.00

Pis and Postdoc

CHF 450.00

Lunch, Friday 1.2.19

CHF 35.00 TTC

## Included in registration fee

Access to the conferences, certificate of attendance, congress documents, coffee breaks & lunch on 31.1.19, dinner & social event on 30.1.18 at the Aquatis Hotel. Lunch on Fri 01.02.19 not included (upon registration, as above)

## Payment/confirmation

After your registration/payment, you will receive our invoice/confirmation by email to the address given when registering. Payment by credit card upon registration online is possible and requested for all foreign registration.

## Accommodation

To be booked directly to the Aquatis Hotel at the rate of: CHF 130.00/single room/night or CHF 150.00/double room/night (breakfast included, city tax not included) - ([www.aquatis-hotel.ch](http://www.aquatis-hotel.ch)). Please, mention the conference when booking

## Cancellation

Written notification is required for all cancellations and changes. In case of cancellation 30 days prior the event, the refund of the amount paid will be done net of CH 60.00 for administrative costs. Thereafter no refund possible. Administrative costs will be charged to no shows. Legal jurisdiction is Lausanne.