

University of Applied Sciences and Arts of Southern Switzerland
Department of Environment Constructions and Design
Institute of Microbiology

SUPSI

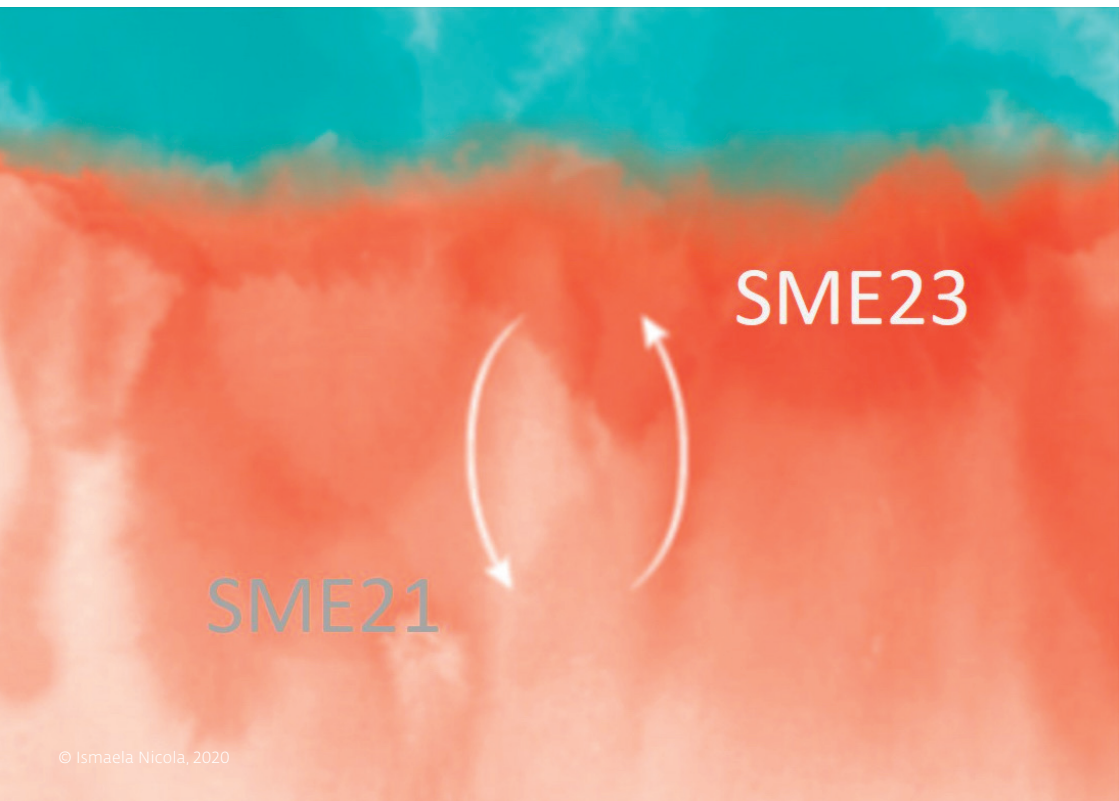
8th Swiss Microbial Ecology Meeting SME 2023

18–20 January 2023

Department of Environment Constructions and Design

Campus SUPSI Mendrisio

Sala polivalente



Welcome word

Dear colleagues,

On behalf of the organizing committee, welcome to the 8th Swiss Microbial Ecology Meeting (SME 2023) hosted at the new Campus of the Department of Environment Constructions and Design SUPSI (University of Applied Sciences and Arts of Southern Switzerland).

After the long pandemic situation that prevented inter-personal exchange, not only at the erased SME 2021, we are very pleased to finally be able to organize this conference all together in person. In fact, thanks to the informal, almost family-like atmosphere, that has always distinguished the SME, it would not have made sense to propose the meeting online. Also because of this reason, the scientific committee prepared a program by giving a lot of space to presentations selected from the abstracts: you can find all of them in the schedule. The SME 2023 program was then enriched by 9 invited speakers, who will span many aspects of microbial ecology, starting with the interrelationship between humans and microbes, which has been emerging more and more in recent years under the concept of "One Health", and moving from the more classical terrestrial and aquatic natural environments ecology.

However, the very dense program will have many moments of interaction, thanks in part to the beautiful sala polivalente on the Campus of the Department of Environment Constructions and Design SUPSI, which will allow us to conduct the entire congress, presentations, posters, and breaks all in the same room, increasing mutual exchange to the maximum.

Thank you all for attending SME 2023 in Mendrisio.

The organizers

Nicola Storelli and Mauro Tonolla

Institute of Microbiology

Department of Environment Constructions and Design SUPSI



"The sublacustrine springs of the meromictic Lake Cadagno; in the background the Alpine Biology Center (CBA)"

Wednesday, 18.01

11:00 - 14:00 Registration
14:00 - 14:15 Welcome word and short overview of the program from Mauro Tonolla, Nicola Storelli, *Institute of microbiology (IM) DACD SUPSI*

14:15 - 18:30 **SESSION I (plenary)** **Humans and microbes**

Chair: **Pamela Principi**, *Institute of Microbiology DACD SUPSI*

14:15 - 15:00 Invited speaker 1

Dr. Claudia Sorlini, *Foundation Cariplo (IT)*

"The role of the microorganisms in the ecological transition"

15:00 - 15:45 **Patrick Hilpisch**, *University of Neuchâtel*

"Nature-inspired microbial processes for urban biomining: harnessing the oxalate-carbonate pathway for lithium recovery"

Roger König, *Institute of Microbiology DACD SUPSI*

"Boosting the metabolism of electroactive microorganisms by conductive materials for biogas production"

Dr. Laëtitia Cardona, *EPFL Lausanne*

"Candidatus Accumulibacter metabolic adaptation under phosphorus limitation in wastewater treatment"

15:45 - 16:15 Coffee break – networking

Chair: **Cristina Fragoso-Corti**, *Institute of Microbiology DACD SUPSI*

16:15 - 17:00 Invited speaker 2

Dr. Michael Hoppert, *Universität Göttingen (DE)*

"Microbial colonization and biodeterioration of dimension stone and sculptures in outdoor environments"

17:00 - 17:45 **Dr. Dimitrios Terzis**, *EPFL Lausanne*

"A decade of progress and turning points in the understanding of MICP in building applications"

Dr. Fabio Palmieri, *University of Neuchâtel*

"One-step soft agar enrichment and isolation of human lung bacteria inhibiting the germination of *Aspergillus* spp. Conidia"

Dr. Eleonora Secchi, *ETH Zurich*

"What shapes bacterial biofilms? A Physics perspective"

17:45 - 18:30 Invited speaker 3

Dr. Célia M. Manaia, *Escola Superior de Biotecnologia, Universidade Católica Portuguesa (PT)*

"The environmental dimensions of antibiotic resistance in the context of One- and Global-Health"

18:30 - 21:00 **POSTER SESSION I**
Apéro, standing dinner, live music

Thursday, 19.01

08:45 - 12:30 **SESSION II (plenary)**
Terrestrial microbial ecology

08:45 - 09:30 Chairs: **Xavier Perret** and **Laure Weisskopf**, *University of Fribourg*
Invited speaker 4

Dr. Sofie Goormachtig, *VIB / Universiteit Gent (BEL)*
“**Catching rhizobia to introduce high protein containing soybean for a sustainable agriculture in Europe**”

09:30 - 10:15 **Dr. Sébastien Buisson**, *University of Fribourg*
“**Phyllosphere bacteria as biocontrol agents to limit the use of pesticides?**”

Dr. Joël F. Pothier, *ZHAW*
“**Bioprospecting efforts to discover new bioactive natural products from actinomycete isolates from Switzerland**”

Dr. Xingguo Han, *WSL*
“**Drivers of microbial activities and greenhouse gas emissions along a soil altitudinal gradient**”

10:15 - 10:45 Coffee break – networking

10:45 - 11:30 Chair: **Andrin Gross**, *WSL Birmensdorf*
Invited speaker 5
Dr. Martina Peter, *Swiss Federal Research Institute WSL*

“**Insights into ectomycorrhizal ecology and evolution from below-ground hidden ascomycetes**”

11:30 - 12:30 **Moritz Kaufmann**, *ZHAW*
“**Effects of chitin soil amendment on lettuce growth and its rhizobiome composition in two different soils**”

Dr. Saskia Bindschedler, *University of Neuchâtel*
“**Harnessing bacteria and fungi for the biorecovery of valuable compounds in anthropogenic waste**”

Dr. Natacha Bodenhausen, *Research Institute of Organic Agriculture FiBL*
“**Prediction of the composition of soil fungal communities based on physico-chemical soil data**”

Matteo Buffi, *University of Neuchâtel*
“**Development of an inexpensive and fast method to study and quantify modularity in filamentous fungi at both the mycelial and hyphal scales**”

12:30 - 14:00 Standing lunch

14:00 - 14:45 Chair: **Laure Weisskopf**, *University of Fribourg*
Invited speaker 6

Dr. Paolina Garbeva, *The Netherlands Institute of Ecology*
“**The fundamental mechanisms of microbial chemical interactions and communication**”

14:45 - 17:45	SESSION III (plenary) Aquatic microbial ecology 1
14:45 - 15:30	Chair: Mauro Tonolla , <i>Institute of Microbiology DACD SUPSI</i> Dr. Adrian-Stefan Andrei , <i>UNIZH, Limnological Station</i> “Evolution of Rickettsiales genomic architectures along the free-living/ host-associated spectrum” Lucas Serra Moncadas , <i>UNIZH, Limnological Station</i> “Ecogenomics approaches to unravel lifestyle strategies and evolutionary processes that shaped hallmark freshwater bacterial lineages” Sami Zhioua , <i>University of Neuchâtel</i> “Benthic cyanobacteria population dynamics in Swiss rivers: an ecological and metagenomic approach to predict cyanobacterial toxic blooms”
15:30 - 16:00	Coffee break – networking
16:00 - 16:45	Chair: Andreas Bruder , <i>Institute of Microbiology DACD SUPSI</i> Invited speaker 7 Dr. Isabel Fernandes , <i>University of Minho (PT)</i> “Aquatic hyphomycetes: bringing a key microbial group into the spotlight”
16:45 - 17:45	Dr. Diego Gonzalez , <i>University of Neuchâtel</i> “Comparative genomics of Microcoleus “anatoxicus”, a bloom-forming, dog-killing benthic cyanobacterium” Astrid Rutzer , <i>Sustainserv GmbH</i> “Effects of the fungicide azoxystrobin and wastewater effluent on microbial communities and a key amphipod shredder” Danaé Bregnard , <i>University of Neuchâtel</i> “Assessment of the bacterial and fungal diversity in deep geothermal fluids around Europe” Dr. Ester Eckert , <i>CNR-IRSA</i> “Zooplankton released free enzymes impact on the natural transformation of bacteria”
17:45 - 19:00	POSTER SESSION II Apéro
19:30	Gala Dinner at Hotel Coronado in Mendrisio

Friday, 20.01

09:00 - 12:30 **SESSION IV (plenary)**
Aquatic microbial ecology 2

09:00 - 09:45 Chair: **Federica Mauri**, *Institute of Microbiology DACD SUPSI*
Invited speaker 8
Dr. Diego Fontaneto, *CNR-IRSA Verbania Pallanza (IT)*
"Dynamic nature of natural selection can promote intraspecific variation within a cyanobacterial species in Lake Zürich"

09:45 - 10:30 **Sandro Ginesi**, *UNIZH, Limnological Station*
"Dynamic nature of natural selection can promote intraspecific variation within a cyanobacterial species in Lake Zürich"

Marie Dannenmann, *UNIZH, Limnological Station*
"Small-scale variability of copiotrophic bakterioplankton communities over the course of a planktothrix rubescens bloom in Lake Zurich"

Dr. Alizée Le Moigne, *UNIZH, Limnological Station*
"A global pattern of trait diversification shapes functional redundancy in stochastically assembled bacterial communities"

10:30 - 11:00 Coffee break – networking

11:00 - 11:45 Chair: **Nicola Storelli**, *Institute of Microbiology DACD SUPSI*
Invited speaker 9
Dr. Niels-Ulrik Frigaard, *University of Copenhagen (DK)*
"Cyanobacteria and red-light biology in Australian beachrock"

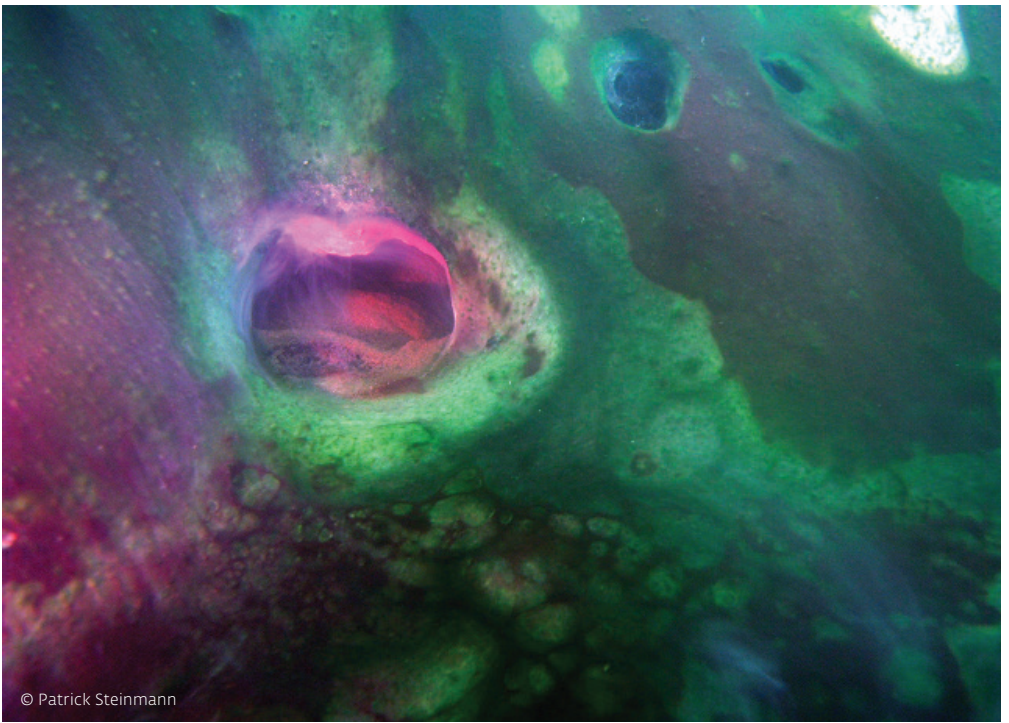
11:45 - 12:45 **Francesco Di Nezio**, *Institute of Microbiology DACD SUPSI*
"Bioconvection: eco-physiological implications in a natural environment"

Dr. Richard J. Henshaw, *ETHZ*
"Elucidating the role of pre-lysis viral infection of cyanobacteria on bacterial chemotaxis using microfluidics"

Dr. Helmut Buergerman, *EAWAG*
"Nitrogen transformation potential and expression in Swiss lake sediments"

Dr. Fabian Fischer, *HESSO Valais*
"Microbial fuel cell's diversity changes during voltage reversal repair"

12:45 - 13:00 **CONCLUDING REMARKS**
Best poster and presentation ceremony
Outlook to SME 2025 with Jakob Pernthaler, *University of Zurich, Limnological Station*



© Patrick Steinmann

"Bacterial mat in the sublacustrine springs of the meromictic Lake Cadagno."

With the support of



sc | nat

Swiss Academy of Sciences
Akademie der Naturwissenschaften
Accademia di scienze naturali
Académie des sciences naturelles

In collaboration with



Venue

SUPSI
Department of Environment
Constructions and Design

Campus Mendrisio
Via Flora Ruchat-Roncati 15
6850 Mendrisio