

SWISS SOCIETY FOR MICROBIOLOGY



Annual congress 2022

SwissTech Convention Center, EPFL Quartier Nord, Ecublens-Lausanne

August 30 – September 1, 2022

PROGRAM





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Congress organization

Prof. Christof Holliger, Environmental Biotechnology, EPFL, Lausanne President of the Congress

Prof. Gilbert Greub, Institute of Microbiology, CHUV, Lausanne Co-president

Prof. Pilar Junier, Institute of Biology, University of Neuchâtel Co-president

Clinical Microbiolgy

Adrian Egli; Jacques Schrenzel

Early career

Florian Tagini

Environmental Microbiology

Sara Mitri; Julia Vorholt

Lay Communication

Gilbert Greub; Pilar Junier

Molecular Microbiology

Martin Pilhofer: Hubert Hilbi

Mycology

Markus Kunzler; Alix Coste

Virology

Jérôme Gouttenoire; Ronald Dijkman

NCCR AntiResist

Urs Jenal: Anne-Cécile Hiebel

NCCR Microbiomes

Shini Sunagawa; Pascale Vonaesch

NRP72

Joachim Frey

NRP78

Marcel Salathé



Welcome to the SSM Annual Meeting and Assembly 2022.

The year 2022 is a special year for the SSM as the society will celebrate its **80th anniversary.** The first Annual Assembly of SSM was held in Lausanne in the year 1942. The 80th Annual Assembly will again be in Lausanne, namely at the SwissTech Convention Center STCC. It is organized by Gilbert Greub, Christof Holliger and Pilar Junier.

The motto of this special event is "Celebrating Microbiology Research". The different contributions will portray the latest microbiological discoveries not only at Swiss research institutions, but also from scientist around the world. The scientific program includes keynote presentations by Colomban de Vargas, Dominique Sanglard, Isabella Eckerle, and Susan Lea. In addition, we will have poster and oral presentations in the fields represented at the society, including clinical, molecular, and environmental microbiology, virology, mycology, and lay communication. Two new sessions organized by the Early Career Section will be also a novelty to the program. In addition, we are happy to announce special sessions highlighting the different research programs of national importance, namely the two NCCRs Antiresist and Microbiomes, and the two NRPs 72 (Antimicrobial Resistance) and 78 (Covid-19).

Thus, whatever your field and your background, you will find for sure the science you are looking for during these three days of a vibrant and exciting meeting in Lausanne with its plenary lectures, six parallel sessions, and numerous contributed talks and posters presented by promising young researchers.

Christof Holliger
President of the Congress

Pilar Junier Gilbert Greub Co-Presidency

Venue

SwissTech Convention Center, EPFL Rue Louis Favre 2, 1024 Ecublens www.stcc.ch

Registration

online on www.meeting-com.ch/Conferences & Meetings

Registration fee	Early fee	Late fee & onsite
	(before August 1, 2022)	(as of August 2, 2022)
Member*	CHF 300.00	CHF 400.00
Non-Member	CHF 350.00	CHF 450.00
PhD Student**	CHF 180.00	CHF 250.00

Gala Dinner on Wed August 31, 2022

CHF 120.00 (limited places)

Daily participation at 50% of the indicated late rate. Please contact the congress management.

* In order to benefit from the Member fee, the annual membership 2022 has to be duly paid to the society.

*** In order to benefit from the reduced fee, PhD students are required to send a document confirming their status to the Congress Management by fax or scanned within 7 days from the date of registration.

Congress office management

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Credits in demand to

FAMH in Microbiology Swiss Society for Infectious Diseases Animal Experimentation

Topics colour key

Clinical microbiology

Cell & molecular microbiology

Environmental microbiology

Lay communication & early careers

Mycology

NRP72

NRP78

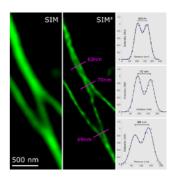
Virology

Revealing the vibrant sub-organelle network of life

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MARK

Engage your audience: my thesis in 180 seconds!

On Tuesday August 30, 2022 at 12h-12h45

Five young colleagues will show their ability to communicate their research to a non-expert audience.

Please participate to this session "Engage your audience. My thesis in 180 seconds", to support these five resaerchers and discover their area of research.

The session will be held at 12h on Tuesday 30th august in the auditorium C.

Awards will then be delivered during the award ceremony on 1st September

On Thursday September 1st, 2022 at 13h30

The Early Career commission is pleased and excited to introduce the "Journal Club Challenge", a session with a new format that will be held in Garden 4ABC. The participants select a paper from their field that has had an impact on their research (ideally a paper published over the past 2 years). The challenge is to present it in 5 minutes in the most captivating way. Each talk will be followed by a short time of questions & answers to make it interactive. The award for the best presentation will be CHF 300.—. Please join us for an exciting session!

Awards will then be delivered during the award ceremony on 1st September

Abstract book link

to be finalized

09.30 Registration FOYER
 10.30 Introduction Pilar Junier, Neuchâtel; Gilbert Greub, Lausanne; Christof Holliger, Lausanne

10.45-11.30

Keynote lecture Chair: Hubert Hilbi, Zurich K-01 Structural insights into directional switching in the bacterial flagellum Susan Lea, Frederick (US)

11.30-12.00

	Plenary posters 1 Chair: Jacques Schrenzel, Geneva
11.30-11.33 PF/P-01	An unstable beta-helix protein in the outer membrane is a stress sensor of converging signaling pathways that promote antibiotic uptake – Jordan Costafrolaz, Geneva
11.35-11.38 PF/P-02*	Fusobacterium necrophorum: association of pathogenic determinants with three clinical presentations Alessia Carrara, Lausanne
11.40-11.43 PF/P-03*	Promising antagonistic activity of Streptomyces spp. metabolites against multiple pathogens of potato plants Alisson Gillon, Fribourg
11.45-11.48 PF/P-04	Discovery of a novel solitary DNA methyltransferase that represses endonuclease- dependent DNA damage in Caulobacter crescentus – Noémie Matthey, Lausanne
11.50-11.53 PF/P-05	A Malassezia pachydermatis genotype potentially associated with fluconazole resistance – Sonja Kittl, Bern

^{*} Student paper

12.00-12.45

12.00-12.45	ENGAGE YOUR AUDIENCE Chairs: Pilar Junier, Neuchâtel; Gilbert Greub, Lausanne
12.00-12.03 S-01*	My thesis in 180 seconds: GUMICOV – Yangji Choi, Lausanne
12.05-12.08 S-02*	My thesis in 180 seconds: Dysbiosis and inflammation in Osteoarthritis – Kajetana Bevc, Zurich
12.10-12.13 S-03	My thesis in 180 seconds: Microbial strategies to successfully colonize and persist in the phyllosphere Lucas Hemmerle, Lausanne
12.15-12.18 S-04*	My thesis in 180 seconds – Laetitia Le Caous, Bern
12.20-12.23 S-05*	My thesis in 180 seconds: How to study antibiotic resistance by gluing bacteria to a diving board – Christèle Aubry, Lausanne

12.45-14.00 Lunch break	EXHIBITION
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SESSION 1	Clinical Microbiology – Rapid diagnostics AUDITORIUM C Chairs: Gladys Martinetti Lucchini, Bellinzona; Peter Keller, Bern
14.00-14.30 M-O1	Automation in microscopy – Oliver Nolte, St.Gallen
14.30-14.45 S-06	Rapid detection of bacterial urinary tract infections using reporter phage-mediated bioluminescence – Matthew Dunne, Zurich
14.45-15.00 S-07	Urinary tract infection diagnostics: Use of fluorescence flow cytometry to reduce bacterial culturing Eva Hitz/Michael Oberle, Aarau
15.00-15.15 S-08	Evaluation of the NeuMoDx™ SARS-CoV-2 Assay Workflow during the 5th Swiss COVID-19 Wave – Konrad Egli, Liebefeld
15.15-15.30 S-09*	Impact of total laboratory automation on time to results of urine cultures – Antonios Kritikos, Lausanne

^{*} Student paper

SESSION 2	Molecular Microbiology - Bacterial physiology and cell biology Chairs: Yolanda Schaerli, Lausanne; Martin Pilhofer, Zurich
14.00-14.30 M-02	M. tuberculosis cell wall metabolism and antibiotic tolerance Michael Berney, New York (US)
14.30-14.45 S-10	Cell wall synthesis and remodeling dynamics determine bacterial division site architecture and cell shape Andrea Vettiger, Harvard (US)
14.45-15.00 S-11	Bacteriocins and mobilization of a human commensal as a new strategy to inhibit the opportunistic human pathogen S. pneumoniae – Johann Mignolet, Lausanne
15.00-15.15 S-12*	O-antigen phase variation promotes the co-existence of Salmonella and virulent phages during intestinal colonization Anouk Bertola, Basel
15.15-15.30 S-13*	Identifying how the SMC motor works by identifying new conformational states – Ophélie Gosselin, Lausanne

SESSION 3	NRP78 (« COVID-19 ») Science, implementation, Communication Chairs: Gilbert Greub, Lausanne; Marcel Salathé, Lausanne
14.00-14.20 M-03	Experience-based recommendations: questioning science-policy relations through the lens of the SociocoViD Implementation project – Nolwenn Bühler, Lausanne
14.20-14.40 M-O4	– Michel Gilliet, Lausanne
14.40-15.00 M-05	New technology for large-scale SARS-CoV-2 serology Sebastian Maerkl, Lausanne
15.00-15.20 M-06	The COVID-COG project: Science, Communication, Implementation – Julie Péron, Geneva
15.20-15.30	Discussion

^{*} Student paper

14.00-15.30

SESSION 4	NCCR Microbiomes Chairs: Sara Mitri, Lausanne; Christian von Mering, Zurich
14.00-14.30 M-07	Culturing and managing complex soil microbiomes Jan Roelof van der Meer, Lausanne
14.30-14.45 S-14*	Investigating bacterial interactions in miniature environments using picoliter-droplet cultivation – Maxime Batsch, Lausanne
14.45-15.00 S-15*/P-31*	Path to reproducible assembly of synthetic and semi-natural soil bacterial communities in soil growing systems Senka Causevic, Lausanne
15.00-15.15 S-16*/P-32*	Monitoring of total and ESBL-producing Escherichia coli in influent of Swiss wastewater treatment plants Sheena Conforti, Dübendorf
15.15-15.30 S-17	Isolation of Candidatus Accumulibacter phosphatis using microfluidic-based approaches – Lukas Hemmerle, Lausanne
SESSION 5	NRP72 GARDEN 5ABC Chairs: Jean-Claude Piffaretti, Massagno; Joachim Frey, Bern
14.00-14.30 M-08	Control Points to reduce spread of antibiotic resistance: A One- Health approach – Andrea Endimiani, Bern
14.30-14.45 S-18*	Whole genome sequence-based characterization of human and animal MRSA from different veterinary and farm settings in Switzerland – Javier Eduardo Fernandez, Bern

IVI-UO	nearm approach - Andrea Endimiani, bern
14.30-14.45 S-18*	Whole genome sequence-based characterization of human and animal MRSA from different veterinary and farm settings in Switzerland – Javier Eduardo Fernandez, Bern
14.45-15.00 S-19*	In-vitro activity of aztreonam in combination with newly- developed ß-lactamase inhibitors against Enterobacterales and Pseudomonas aeruginosa producing metallo-ß-lactamases Christophe Le Terrier, Fribourg
15.00-15.15 S-20*	Resistell nanomotion-based AST : an innovative technology to study tolerance in Escherichia coli – Christèle Aubry, Lausanne
15.15-15.30 S-21	Next-generation bacteriophages: new approaches for rapid diagnostics and efficient control of antibiotic-resistant pathogens – Martin J. Loessner, Zurich
15.30-15.45 S-22	Meta-omics provides new perspectives on resistomes of aquatic environments – Helmut Bürgmann, Dübendorf

15.30-16.00 Coffee break

EXHIBITION

^{*} Student paper

SESSION 6	Clinical Microbiology - Panel PCRs Chairs: Andrea Zbinden, Zurich; Gilbert Greub, Lausanne
16.00-16.30 M-09	Pro – Nina Khanna, Basel
16.30-17.00 M-10	Con – Peter Keller, Bern
17.00-17.15 S-23	Performance of the rapid molecular assay BioFire FilmArray Meningitis/Encephalitis for diagnosis of CNS infections: a three- year retrospective study – Giorgia Caruana, Lausanne
17.15-17.30 S-24	Characterization of the resistance pattern of Swiss MDR TB isolates by phenotypic drug susceptibility testing and genotypic resistance analysis over the last decade Bettina Schulthess, Zurich

SESSION 7	Molecular Microbiology - Bacterial signalingand quorum sensing Chair: Sara Mitri, Lausanne
16.00-16.30 M-11	The different functions of cellular appendages in cyanobacterial behaviour – Annegret Wilde, Freiburg (DE)
16.30-16.45 S-25	Membrane vesicle-mediated bacterial communication of Legionella Pneumophila – Mingzhen Fan, Zurich
16.45-17.00 S-26	CcrM-mediated methylation of the multipartite genome of Agrobacterium tumefaciens promotes its replication Justine Collier, Lausanne
17.00-17.15 S-27	Heterogeneous single cell responses underlie host-pathogen signaling during pneumococcal infection Vikrant Minhas, Lausanne
17.15-17.30 S-28*	Making of Zygotes: Fission Yeast Zygotic Development Is Regulated by a Facultative Component of P-Bodies Ayokunle Araoyinbo, Lausanne

^{*} Student paper

SESSION 8	NCCR Antiresist – M&E Chairs: Linda Mueller, Nyon; Christoph Dehio, Basel
16.00-16.30 M-12	– John McKinney, Lausanne
16.30-16.45 S-29	Establishing an in vitro lung tissue model to study colonization, virulence and drug treatment of lung infections at high temporal and spatial resolution – Leoni Swart, Basel
16.45-17.00 S-30	Pseudomonas aeruginosa contracts mucus to rapidly form biofilms in tissue-engineered human airways Tamara Rossy, Lausanne
17.00-17.15 S-31*	The pneumococcal essentialome under antibiotic-induced stress – Bevika Sewgoolam, Lausanne
17.15-17.30 S-97	Antimicrobial susceptibility in E. coli and Pasteurellaceae at the beginning and at the end of the fattening process in veal calves: comparing 'outdoor veal calf' and conventional operations Jens Becker, Bern

SESSION 9	Environmental Microbiology Chairs: Pilar Junier, Neuchâtel; Jurg Enkerli, Zurich
16.00-16.30 M-13	Consequences of shoving, sliding, and swimming on microbial range expansion – David Johnson, Dübendorf
16.30-16.45 S-32*	Lysis by phages can help establish metabolic interactions in bacterial communities – Emanuele Fara, Dübendorf
16.45-17.00 S-33	Functional response of the aerobic granular sludge microbiome to a complexification of the synthetic wastewater Laetitia Cardona, Lausanne
17.00-17.15 S-34	How BioEncounters at the microscale prime microbial interactions in the ocean – Jonasz Slomka, Zurich
17.15-17.30 S-35	Cross-feeding interactions shaped Rickettsiales genomic architectures along the parasite/free-living spectrum Adrian-Stefan Andrei, Zurich

^{*} Student paper

SESSION 10	Joint Virology/NRP78 Chairs: Isabella Eckerle, Geneva; Volker Thiel, Bern
16.00-16.30 M-14	Real-time to Real-life: The promise & utility of phylogenetics in pandemics – Emma Hodcroft, Bern
16.30-16.45 S-36	Distinct phenotype of SARS-CoV-2 Omicron BA.1 in human primary cells but no increased host range in cell lines of putative mammalian reservoir species – Manel Essaidi-Laziosi, Geneva
16.45-17.00 S-37	Deciphering the function of NSP1 ribosome binding during SARS-CoV-2 infection – Silvio Steiner, Bern
17.00-17.15 S-38*	Analysis of the sequences of alpha, delta and omicron outbreaks in educational settings in Geneva – Mathilde Bellon, Geneva
17.15-17.30 S-39	Recoding of the SARS-CoV-2 genome generated a live- attenuated vaccine that induced full protection from COVID-19 in vivo – Güliz Tuba Barut, Bern

17.30-17.45	Short break	EXHIBITION

17.45-18.45 **General assembly** (Open to members only)

AUDITORIUM C

Chair: Jacques Schrenzel, Geneva SSM Board Committee

19.00	Aperitif	EXHIBITION
20.00	END OF DAY 1	

^{*} Student paper

08.00 Registration FOYER

08.45-09.30

Keynote lecture

AUDITORIUM C

Chairs: Alix Coste, Lausanne; Markus Kuenzler, Zurich

K-02 Drug resistance in fungal pathogens from

the clinic and the environment

Dominique Sanglard, Lausanne

09.30-10.00

	Plenary posters 2 Chair: Jérôme Gouttenoire, Lausanne
09.30-09.33 PF/P-06	Nanomotion technology with the help of machine learning allows for highly accurate classification of antibiotic susceptibility of various pathogens – Alexander Sturm, Muttenz
09.35-09.38 PF/P-07	Assessment of cell tropism and evaluation of immune markers induced after in vitro rVSV-ZEBOV infection in cell lines and human primary cells – Catia Alvarez, Geneva
09.40-09.43 PF/P-08	The GENeva PHage (GENPH) biobank against carbapenem- resistant and hypervirulent Klebsiella pneumoniae Diego Andrey, Geneva
09.45-09.48 PF/P-09	Tick-borne encephalitis virus nonstructural protein 1 lgG enzyme-linked immunosorbent assay for differentiating infection versus vaccination antibody Response Rahel Ackermann-Gäumann, la Chaux-de-Fonds
09.50-09.53 PF/P-10	Mechanisms of waterborne virus removal by protists: toward biocontrol of viral pathogens? – Margot Olive, Dübendorf
09.55-09.58 PF/P-11*	Prediction of SARS-CoV-2 infection clusters by geographic analysis and based on viral genome sequence Yangji Choi, Lausanne

10.00-10.30 Coffee break

EXHIBITION

^{*} Student paper

SESSION 11	Clinical Microbiology – One Health Chairs: Claire Bertelli, Lausanne; Adrian Egli, Zurich
10.30-11.00 M-15	Animals and dissemination of clinically important antimicrobial resistance: tracking carbapenemases – Vincent Perreten, Bern
11.00-11.30 M-16	Clinical Microbiology – One Health Anders Rhod Larsen, Copenhagen (DK)
11.30-11.45 S-40*/P33*	The faecal microbiome of agropastoral children in the Somali Region of Ethiopia is significantly different from other traditional and industrialized communities – Simon Yersin, Lausanne
11.45-12.00 S-41	Multi-country outbreak of monophasic Salmonella Typhimurium sequence type (ST) 34 linked to chocolate products – the Swiss situation – Magdalena Nüesch-Inderbinen, Zurich

SESSION 12	Lay Communication Chairs: Pilar Junier, Neuchâtel; Massimo Caine, Geneva
10.30-11.00 M-17	The International Microbiology Literacy Initiative Kenneth Timmis, Braunschweig (DE)
11.00-11.15 S-42	Microbes go to school - Enhancing microbiology literacy through service-learning - Saskia Bindschedler, Neuchatel
11.15-11.30 S-43*	Lay communication on the risk of tick-borne diseases: a comparative study of the Swiss media landscape from 2000 to 2020 – Carole Kebbi Beghdadi, Lausanne
11.30-11.45 S-44*	MyKrobs: a tool to teach medical students Antonios Kritikos, Lausanne
11.45-12.00	Round Table

^{*} Student paper

SESSION 13	Fundamental Mycology Chair: Claudio de Virgilio, Fribourg
10.30-11.00 M-18	Mechanisms of cell-cell fusion – Sophie Martin, Lausanne
11.00-11.15 S-45	Heterologous expression of <i>Hanseniaspora sp.</i> transporters in <i>Saccharomyces cerevisiae</i> identifies a pantothenate symporter that is used to obtain this vitamin from other organisms Maria Paula Rueda, Agroscope
11.15-11.30 S-46	The G-patch protein Tma23 is a novel Prp43 cofactor involved in early pre-60S Assembly – Alfonso Méndez-Godoy, Fribourg
11.30-11.45 S-47	Exploring complex genetic suppression interactions Betül Ünlü, Lausanne
11.45-12.00 S-48*	Fungal drops: a novel method for the observation of fungal modularity and Coordination – Matteo Buffi, Neuchâtel

SESSION 14	Virology Chairs: Caroline Tapparel, Geneva; Jérôme Gouttenoire, Lausanne
10.30-11.00 M-19	Ultrastructure of influenza virus vRNP assembly at the plasma membrane – Yohei Yamauchi, Zurich
11.00-11.15 S-49*	Characterization of novel candidate factors impacting HIV life cycle – Beril Mersinoglu, Lausanne
11.15-11.30 S-50*	Characterization of the innate immune response in the respiratory epithelium of human, porcine, and bovine during influenza virus infection – Laura Ialoli, Bern
11.30-11.45 S-51	A genome-wide CRISPR/Cas9 screen identifies a role for early endosomes in Hepatitis E virus RNA replication Noémie Oechslin, Lausanne
11.45-12.00 S-52*	Generation and characterization of a fluorescent Influenza D reporter virus – Lukas Probst, Bern

^{*} Student paper

SESSION 15	NCCR Microbiomes – GARDEN 5ABC Modelling and assessing microbiomes Chairs: Yolanda Schaerli, Lausanne; Shinichi Sunagawa, Zurich
10.30-11.00 M-20	The Microbe Atlas: A global survey of microbial diversity Christian von Mering, Zurich
11.00-11.15 S-53*	Towards taxon-specific growth prediction in microbial communities by metatranscriptomics – Melanie Stäubli, Zurich
11.15-11.30 S-54*	Linking spatial self-organization and environmental change in expanding microbial communities – Philipp Tandler, Zurich
11.30-11.45 S-55	Probing interactomes of bee, mice & soil communities: what controls diversity and growth? – Sebastian Burz, Lausanne
11.45-11.48 PF/P-12*	Accumulibacter populations coexisting in a phosphorus- removing bioreactor show differences in gene expression Pilar Natalia Rodilla Ramírez, Lausanne
11.50-11.53 PF/P-13	Controlling species within a small bacterial synthetic community Andrea Dos Santos, Lausanne
11.55-11.58 PF/P-14	Using 'OMICS' to investigate molecular mechanisms helping predatory bacterium Bdellovibrio bacteriovorus to escape exhausted bacterial prey remnants – Simona Huwiler, Zurich

12.00-12.45

Exclusive symposium by RUWAG THE MICROBIOLOGY LABORATORY OF THE FUTURE Chair: Oliver Nolte, Zentrum für Labormedizin, St.Gallen 12.00-12.20 M-21 Fully-automated EUCAST rapid antimicrobial susceptibility testing (RAST) from positive blood cultures: diagnostic accuracy and implementation – Abdessalam Cherkaoui, HUG, Geneva 12.20-12.45 Artificial Intelligence in Laboratory Data Management Bart Gordts, MD, clinical microbiologist and independant clinical consultant for Copan WASP (IT) and Dialex Biomedica (BE)

^{*} Student paper

12.45-14.00 Lunch break & Poster session (even numbers) EXHIBITION & POSTER AREA

SESSION 16	Role of the Swiss Society for Microbiology auditorium c in Clinical Microbiology Chairs: Gilbert Greub, Lausanne (Past president 2016-2018); Jacques Schrenzel, Geneva (President 2022-2024)			
14.00-14.30 M-23	The CCCM-SSM during the SARS-CoV-2-pandemics: validation of tests, EQA, FAQ and guidelines – Adrian Egli, Zurich (Chair of the section clinical microbiology)			
14.30-15.30	Clinical diagnostic microbiology, then and now? The view of (past) SSM presidents			
14.30-14.40	Raymond Auckenthaler, Geneva			
14.40-14.50 M-24	Jacques Bille, Lausanne			
14.50-15.00	Jean-Claude Piffaretti, Massagno			
15.00-15.10 M-25	Gilbert Greub, Lausanne			
15.10-15.20	Jacques Schrenzel, Geneva			
15.20-15.30	Questions			

SESSION 17	Molecular Microbiology - Bacterial secretion and transport Chairs: Silvia Ardissone, Lausanne; Joerg Jores, Bern		
14.00-14.30 M-26	Molecular mechanisms of mycobacterial siderophore import Markus Seeger, Zurich		
14.30-15.00 M-27	The molecular basis of FimT-mediated DNA uptake during natural transformation of bacteria – Manuela Hospenthal, Zurich		
15.00-15.15 S-56*	Molecular mechanism of ixotrophy behavior in a predatory marine bacterium – Yun-Wie Lien, Zurich		
15.15-15.30 S-57	Antibiotic-tolerant reservoirs of Salmonella are determined by bacterial secretion machinery – Joshua Newson, Zurich		

SESSION 18	Environmental Microbiology Chair: Mauro Tonolla, Mendrisio	
14.00-14.30 M-28	Artificial microbial consortia for the conversion of lignocellulosic biomass or CO2 to chemicals – Michael Studer, Zollikofen	
14.30-14.45 S-58*	Probiotic control of Legionella in building plumbing systems: a two-sided approach towards identifying and characterising antagonistic bacteria – Alessio Cavallaro, Dübendorf	
14.45-15.00 S-59*	Ammoniphilus oxalaticus: oxalotrophy and biocontrol of fungal pathogens – Aislinn Estoppey, Neuchâtel	
15.00-15.15 S-60	Pest insect biological control based on microbial communities of pathogen suppressive soils – Pilar Vesga, Lausanne	
15.15-15.30 S-61*	The potential of Actinomycetes to control potato late blight Ola Abdelrahman, Fribourg	

^{*} Student paper

SESSION 19	NCCR Microbiomes Chair: Sigfried Hapfelmeier, Bern		
14.00-14.30 M-29	NCCR Microbiomes Consortium - Emma Slack, Zurich		
14.30-14.45 S-62*	Metagenomics analysis of gut microbiota in COVID-19 patients Yangji Choi, Lausanne		
14.45-14.48 PF/P-15	Uncoupling of invasive bacterial mucosal immunogenicity from pathogenicity – Eileen Haring, Bern		
14.50-14.53 PF/P-16*	Microbiota profiling by metagenomics and flow cytometry on Clostridioides difficile infection patients Elena Montenegro Borbolla, Lausanne		
14.55-14.58 PF/P-17*	Microbiota and host response in Salmonella Typhimurium infection (mistic) – Carmen Chen, Lausanne		
15.00-15.15 S-63*	Directly probing microbe-microbe interactions in Clostridioides difficile infection – Luca Beldi, Bern		
15.15-15.30 S-64	Towards being specific with mucosal vaccines using biophysical clues from antibody-bacterial glycan interactions Milad Radiom, Zurich		

SESSION 20	NCCR Antiresist – NA Chair: Urs Jenal, Basel	
14.00-14.30 M-30	Digging through the Data: Computational Tools for Genome Mining and Antibiotic Discovery – Nadine Ziemert, Tübingen (DE)	
14.30-14.45 S-65	Antibiotic tolerance in Pseudomonas aeruginosa generated by self-induced toxin-mediated interference with NAD metabolism Isabella Santi, Basel	
14.45-15.00 S-66	High-content screening identifies a critical role for P pili in early adhesion of uropathogenic Escherichia coli to bladder cells Thomas Simonet, Lausanne	
15.00-15.15 S-67*/P-34*	Phage paride exploits bacterial stress responses to kill antibiotic-tolerant cells – Enea Maffei, Basel	
15.15-15.30 S-68	Targeting protein folding pathways and PBP2a stability to restore broad β -lactam sensitivity in methicillin resistant Staphylococcus aureus (MRSA) – Mélanie Roch, Geneva	

^{*} Student paper

15.30-16.00 Coffee break

EXHIBITION

16.00-17.30

SESSION 21	Clinical Microbiology - Diagnostic challenges Chairs: Bettina Schulthess, Zurich; Damien Jacot, Lausanne		
16.00-16.30 M-31	Diagnostic of lyme borreliosis: the laboratory challenge Reto Lienhard, La Chaux-de-Fonds		
16.30-16.45 quizz	Metagenomic results – how to trust them? Jacques Schrenzel, Geneva		
16.45-17.00 M-32	Diagnostic challenges, rare, but dangerous Adrian Egli, Zurich		
17.00-17.15 M-33	Clinical cases & quizz Alix Coste, Lausanne		
17.15-17.30 S-69	Suspected infection with emerging Rickettsia africae in a South African returnee from Switzerland – Dominique Hilti, Buchs		

SESSION 22	Molecular Microbiology - Cellular microbiology Chair: Jan-Willem Veening, Lausanne	
16.00-16.30 M-34	Intracellular niche formation of entero-invasive bacterial pathogens – Jost Enninga, Paris (FR)	
16.30-16.45 S-70	Iron starvation induces functional type II toxin-antitoxin modules in Waddlia Chondrophila – Silvia Ardissone, Lausanne	
16.45-17.00 S-71*	The Legionella-driven Ptdlns(4)P gradient at LCV-ER membrane contact sites promotes Vap-, OSBP-, and Sac1-dependent pathogen vacuole remodeling – Simone Vormittag, Zurich	
17.00-17.15 S-72	Mechanism of cyclic-β-glucan export by ABC transporter Cgt of Brucella – Jaroslaw Sedzicki, Basel	
17.15-17.30 S-73*/P-35*	Secretion of IL-1β by macrophages infected with M. tuberculosis enhances bacterial control in bystander macrophages Ophélie Butschmann, Lausanne	

^{*} Student paper

SESSION 23	Environmental Mycology Chair: Jurg Enkerli, Zurich		
16.00-16.30 M-35	Biodiversity of soil fungi – from communities to species and strains – Johanna Mayerhofer, Zurich		
16.30-16.45 S-74	Food authenticity: a case study of species determination in Morchella mushrooms using a centroid-based approach Melissa Cravero, Neuchâtel		
16.45-17.00 S-75	The first genome-wide association performed on the traits of a mutualist, mycorrhizal fungus – Erica McGale, Lausanne		
17.00-17.15 S-76	Inhibition potential of beehives-associated bacterial strains against Aspergillus Spp – Fabio Palmieri, Neuchâtel		
17.15-17.30 S-77*	Do the insect pathogenic fungal species <i>Beauveria brongniartii</i> and <i>B. pseudobassiana</i> occupy different ecological niches? Chiara Pedrazzini, Agroscope		

SESSION 24	Early Career - Microbiologists of tomorrow GARDEN 4ABC Chairs: Hanna Marti, Zurich; Florian Tagini, Lausanne		
16.00-16.15 M-36	– Philipp Engel, Lausanne		
16.15-16.30 M-37	- Danuta Cichocka, Muttenz/Lausanne		
16.30-16.45 M-38	From the bench to the public arena – Massimo Caine, Geneva		
16.45-17.00 M-39	– Eleonora Ciarlo, Lausanne		
17.00-17.15 M-40	– Adrian Egli, Zurich		
17.15-17.30	Open discussion		

^{*} Student paper

SESSION 25	NCCR Antiresist – Tech Chairs: Nina Khanna, Basel; Marek Basler, Basel	
16.00-16.30 M-41	CRISPRi meets metabolomics: a platform for rapid functional annotation of compound libraries – Mattia Zampieri, Zurich	
16.30-17.00 M-42	Dissecting the interactions between commonly used drugs and the human gut microbiota – Lisa Maier, Tübingen (DE)	
17.00-17.15 S-78	Developing CRISPRi-seq for clinical S. pneumoniae strains to understand dissemination during infection Amelieke Cremers, Lausanne	
17.15-17.30 S-79*/P-36*	Targeting the essential BAM complex with nanobodies to identify bio-antibiotics active against gram-negative ESKAPE pathogens – Johanna Buchheit, Zurich	

19.00-night Aperitif - Gala Dinner

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END OF DAY 2

^{*} Student paper

08.00 Registration FOYER

08.45-09.30

Keynote lecture AUDITORIUM C

Chair: Christof Holliger, Lausanne

K-03 Assessing the world ocean microbiome

Shinichi Sunagawa, Zurich

09.30-10.00

	Plenary posters 3 Chairs: tbd	
09.30-09.33 PF/P-18	Low sensitivity of POC-PCR for Streptococcus agalactiae carriage screening in pregnant women Rahel Wampfler, Niederwangen	
09.35-09.38 PF/P-19*	Secretor status association analysis with pneumococcal carriage in infants – Katharina Bacher, Bern	
09.40-09.43 PF/P-20	The drawback of false positive MRSA results with rapid PCR screening during an outbreak – Dominique Blanc, Lausanne	
09.45-09.48 PF/P-21	Pathogen prevalence in ticks parasitizing humans Aurélie Scherler, Neuchâtel	
09.50-09.53 PF/P-22*	Deimmunization of peptidoglycan hydrolases for therapeutic treatment against systemic S. aureus infections Léa Zinsli, Zurich	
09.55-09.58 PF/P-23	16S amplicon-based metagenomics for pathogen detection in routine diagnostic clinical microbiology Sedreh Nassirnia, Lausanne	

10.00-10.30	Coffee break	EXHIBITION

^{*} Student paper

SESSION 26	Clinical Microbiology - Next generation sequencing - what is new for diagnostics Chairs: Helena Seth-Smith, Zurich; Jacques Schrenzel, Geneva	
10.30-11.00 M-43	Microbiome and mycobiome analysis in atopic dermatitis – Philipp Bosshard, Zurich	
11.00-11.15 S-80	Nanopore selective sequencing of SARS-CoV-2 genomes in clinical samples – Alban Ramette, Bern	
11.15-11.30 S-81	Comparison of Nanopore R10.4 long-read versus Illumina short-read whole-genome sequencing for Klebsiella pneumoniae in silico typing performances – Diego Andrey, Geneva	
11.30-11.45 S-82*	zDB: bacterial comparative genomics made easy Alessia Carrara, Lausanne	
11.45-12.00 S-83	Epidemiological links and antimicrobial resistance of clinical Salmonella enterica ST198 isolates: a nationwide microbial population genomic study in Switzerland – Michael Biggel, Zurich	

SESSION 27	Chairs: Tamar Kohn, Lausanne; Leo Eberl, Zurich	
10.30-11.00 M-44	The evolution and ecology of siderophore bioremediation in soil microbes – Siobhan O'Brien, Dublin (IE)	
11.00-11.15 S-84*	Lipopolysaccharides as double-edge swords in phage tail- like particles mediated kin competition in environmental Pseudomonas – Clara Margot Heiman, Lausanne	
11.15-11.30 S-85	Genome resolved metagenomics reveals the impact of AMR strain inoculation and antibiotic treatment in complex microbiota in vitro – Florentin Constancias, Zurich	
11.30-11.45 S-86*/P-37*	Targeted Genome Mining Reveals the Psychrophilic Clostridium estertheticum Complex as a Potential Source for Novel Bacteriocins, Including Cesin A – Joseph Wambui, Zurich	
11.45-12.00 S-87	The role of skin bacterial volatiles in host finding by mosquitoes and biting midges and implications for their control Niels Verhulst, Zurich	

^{*} Student paper

SESSION 28	Virology Chairs: Valeria Cagno, Lausanne; Angela Ciuffi, Lausanne	
10.30-11.00 M-45	Single cell biology uncovering mechanisms in virus infection variability – Urs Greber, Zurich	
11.00-11.15 S-88	Recombinant Hepatitis E Viruses Harboring a Split Luciferase Tag in the ORF2 Protein – Maliki Ankavay, Lausanne	
11.15-11.30 S-89	A single respiratory tract infection early in life reroutes healthy microbiome development and affects adult metabolism in a preclinical animal model – Mirco Schmolke, Geneva	
11.30-11.45 S-90	Inactivation mechanisms of influenza A virus within the micro- environment of expiratory bioaerosols identified by whole virus mass-spectrometry – Shannon David, Lausanne	
11.45-12.00 S-91*	An RNA replicon system to investigate promising inhibitors of feline infectious peritonitis coronavirus – Kimberly Schmied, Bern	

SESSION 29	NCCR Microbiomes Chairs: Pascale Vonaesch, Lausanne; Philipp Engel, Lausanne
10.30-11.00 M-46	– Alyson Hockenberry, Zurich
11.00-11.15 S-92*	Enhancing phage therapeutics through in situ production and release of heterologous antimicrobial effectors Jiemin Du, Zurich
11.15-11.30 S-93*/P-38*	Multiomics profiling of pneumococcal stress responses Vincent de Bakker, Lausanne
11.30-11.45 S-94*	The maintenance of Salmonella virulence is promoted by the gut microbiota during mild colitis in mice – Ersin Gül, Zurich
11.45-12.00 S-95	Wheat rhizosphere microbiomes obtained throughout reinoculation cycles from two soils select a similar microbiota Daniel Garrido-Sanz, Lausanne
12.00-12.15 S-96	Microbe-microbe communication in the plant microbiota and its impact on plant health – Laure Weisskopf, Fribourg

^{*} Student paper

SESSION 30	Joint NRP/NCCR Antiresist Chair: Dirk Bumann, Basel	
10.30-11.00 M-47	The outer membrane insertase as a target for novel antibiotics Sebastian Hiller, Basel	
11.00-11.15 S-98	ariations of intrinsic cell oxidation cause coenzyme A shortage leading to antibiotic tolerance in a human pathogen Pablo Manfredi, Basel	
11.15-11.30 S-99	Genome stability during serial sub-culturing in hyperepidemic multidrug-resistant Klebsiella pneumoniae and Escherichia coli Pablo Manfredi, Basel	

12.00-12.35

	Plenary posters 4 Chair: Emma Hodcroft, Bern	
12.00-12.03 PF/P-24	Preliminary results from a prospective, observational, cross- sectional, single-arm study investigating nanomotion-based technology (Resistell AST) for rapid antibiotic susceptibility testing for Gram-negative bacteremia – Giorgia Caruana, Lausanne	
12.05-12.08 PF/P-25	Chlamydia suis undergoes interclade recombination, promoting Tet-island exchange – Hanna Marti, Zürich	
12.10-12.13 PF/P-26	A bovine blood-based ex vivo platform to dissect host-pathogen interactions – Thomas Démoulins, Bern	
12.15-12.18 PF/P-27*	Bacterial genes required for tolerance to reactive oxygen species: from host defense to potential antibiotic targets Myriam Roth, Geneva	
12.20-12.23 PF/P-28*	The role of large fission GTPases for Legionella pneumophila infection – Ana Katic, Zurich	
12.25-12.28 PF/P-29	Photodynamic therapy using 5-ALA and daylight for prevention of periprosthetic joint infections – Julia Prinz, Zurich	
12.30-12.33 PF/P-30*	Establishment of a novel and rapid selective whole genome amplification and sequencing protocol for African Swine Fever Virus – Matthias Licheri, Bern	

^{*} Student paper

12.45-14.00 Lunch break & Poster session (odd numbers) EXHIBITION & POSTER AREA

SESSION 31	Early Career – Journal Club Challenge Chairs: Florian Tagini, Lausanne; Hanna Marti, Zurich	
14.00-14.05	Introduction	
14.05-14.15 S-100*	Glycolytic reprograming in Salmonella counters NOX2-mediated dissipation of ΔpH, <i>Nature Communications</i> Myriam Roth, Geneva	
14.15-14.25 S-101	#Proinflammatory CD20 + T cells contribute to CNS-directed autoimmunity, Science translational Medicine Sudharshana Sundaresan, Zurich	
14.25-14.35 S-102*	Clinical targeting of HIV capsid protein with a long-acting small molecule, Nature – Grégory Mathez, Lausanne	
14.35-14.45 S-103*	Pathways for horizontal gene transfer in bacteria revealed by a global map of their plasmids, <i>Nature Communications</i> Alessia Carrara, Lausanne	
14.45-14.55 S-104*	Mass-immigration determines the assembly of activated sludge microbial communities, <i>PNAS</i> Pilar Natalia Rodilla Ramírez, Lausanne	
14.55-15.05 S-105*	Caloric restriction disrupts the microbiota and colonization resistance, <i>Nature</i> – Sedreh Nassirnia, Lausanne	
15.05-15.15 S-106*	Age and the aging process significantly alter the small bowel microbiome, <i>Cell Reports</i> Elena Montenegro Borbolla, Lausanne	
15.15-15.30	Closure and award	

^{*} Student paper

SESSION 32	Molecular Microbiology - Bacteriophages and Horizontal gene transfer Chair: Grégory Resch, Lausanne	
14.00-14.30 M-48	No need to catch 'em all: Systematic exploration of phage-host interactions with the BASEL collection – Alexander Harms, Basel	
14.30-15.00 M-49	Biophysics and modeling of R-type pyocin contraction Petr Leiman, Galveston (US)	
15.00-15.15 S-107	Investigating the transcription activation and partitioning roles of the bi-functional BisD protein of the integrative and conjugative element ICEclc – Nicolas Carraro, Lausanne	
15.15-15.30 S-108*	Phage therapy to exclude multidrug-resistant encapsulated pathogenic Escherichia coli from the gut Louise Larsson, Zurich	

SESSION 33	Medical Mycology Chairs: Salomé Leibundgut-Landmann, Zurich Frédéric Lamoth, Lausanne	
14.00-14.30 M-50	Unlocking the Mycobiota: Fungal Reservoirs, Drug Resistance, and Clinical Outcomes – Tobias Hohl, New York (US)	
14.30-14.45 S-109*	Gene repertoires of the <i>Pneumocystis jirovecii</i> major surface antigen within infected patients from different geographical locations – Caroline Meier, Lausanne	
14.45-15.00 S-110*	Card9 and MyD88 differentially regulate IL-17-producing T cell subsets in the Malassezia-colonized skin – Meret Tuor, Zurich	
15.00-15.15 S-111	Fungal Testing Tools to Diagnose Invasive Fungal Infections in Allogeneic Hematopoïetic Cell Transplant Recipients between 2010 and 2019 – Arnaud Riat, Geneva	
15.15-15.30 S-112	Adaptation of the Micronaut-AM test for Aspergillus spp. Antifongigram – Melissa Frund, Lausanne	

^{*} Student paper

14.00-15.30

SESSION 34	Environmental Microbiology Chairs: Johanna Mayerhofer, Zurich; Jan Roelof van der Meer, Lausanne	
14.00-14.30 M-51	pH control of indoor air as a strategy to reduce the transmission of respiratory viruses – Tamar Kohn, Lausanne	
14.30-14.45 S-113	It takes two times two to tango – cryoEM structure resolution of the membrane- bound tetrachloroethene reductive dehalogenase complex – Julien Maillard, Lausanne	
14.45-15.00 S-114	Viral inactivation by quaternary ammonium compounds: A systematic review – Anne Vescovi, Dübendorf	
15.00-15.15 S-115*	Intracellular sulphur globules guide bacterial gravitaxis in dynamic chemical gradients – Francesco Di Nezio, Geneva	
15.15-15.30 S-116	5.30 Bacterial proteolytic enzymes as biological scissors in the fate of enteroviruses in natural ecosystems Marie-Hélène Corre, Lausanne	

15.30-16.00	Coffee break	EXHIBITION
16.00-16.15	SSM Awards	AUDITORIUM C
	Pilar Junier, Neuchâtel; Jacques Schrenzel, Geneva	
	SSM Encouragement Award 2022	
	SSM PhD Award 2022	
	Poster Awards	

16.15-17.00

	Keynote lecture Chairs: Alexandra Trkola, Zurich; Volker Thiel, Bern	AUDITORIUM C
K-04	Viruses emerging in a crisis-stricken wor challenges in prevention and preparedne Isabella Eckerle, Geneva	

17.00 END OF THE SSM ANNUAL MEETING 2022

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Auditorium C (Foyer Cloud area – level L2)
Garden 2ABC, Garden 3ABC, Garden 4ABC, Garden 5ABC
(Garden area – level L0)
Exhibition, catering and posters (Garden area – level L0)

Exhibition, catering and posters (darden area lever Ec

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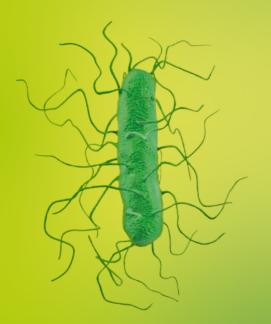




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