



SGM·SSM

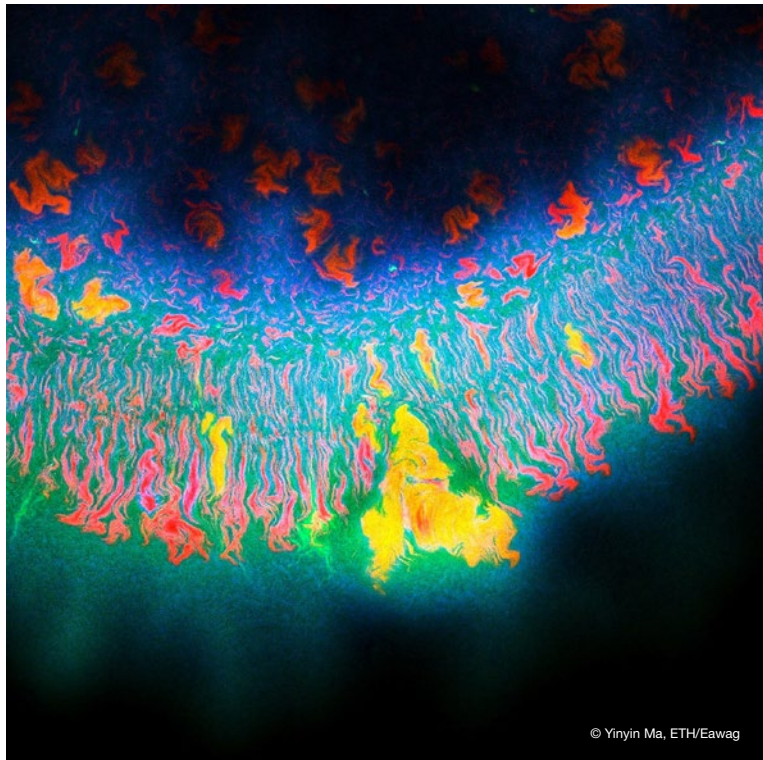
Swiss Society for Microbiology SSM

ANNUAL CONGRESS 2021

September 2-3, 2021

Full virtual event

Program



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Online registration on www.meeting-com.ch/
Conferences & Meetings

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Venue

full virtual event. A link will be sent to the participants in due time.

Registration

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

Congress office management

Meeting.com Sàrl Congress Organisation

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Submission of abstracts

online on www.ssm2021.exordo.com

handled by the Congress Office Management. All information or requirements at the above-mentioned address

Registration fee

Early fee

(before July 18, 2021)

Late fee & onsite

(as of July 19, 2021))

Member*

CHF 150.00

CHF 270.00

Non-Member

CHF 180.00

CHF 300.00

PhD Student**

CHF 60.00

CHF 80.00

* In order to benefit from the Member fee, the annual membership 2021 has to be duly paid to the SSM.

** 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.

Included in registration fee

Access to the conferences of the virtual meeting, organizational and technical equipment, webplatform set up, technical staff, certificate of attendance sent after the event.

Payment/confirmation

After your registration/payment you will receive our invoice/confirmation by e-mail to the address given by the registration.

Congress organization

David R. Johnson, Dpt of Environmental Microbiology, Swiss Federal Institute of Aquatic Science and Technology (EAWAG)

President of the SSM Annual Meeting 2021

Prof. Dr. Pilar Junier, Institute of Biology, University of Neuchâtel

President SSM-SGM 2019-2021

Scientific committee

Clinical Microbiology

Adrian Egli (BS), Claire Bertelli (VD), Vladimira Hinic (BS), Peter Keller (BE)

Environmental Microbiology

Pilar Junier (NE), David Johnson (ZH)

Molecular Microbiology

Hubert Hilbi (ZH), Jörg Jores (BE), Martin Pilhofer (ZH)

Mycology

Saskia Bindschedler (NE), Arnaud Riat (GE)

Virology

Caroline Tapparel (GE), Jérôme Gouttenoire (VD), Mirco Schmolke (GE)

Lay communication

Gilbert Greub (VD), Carole Kebbi Beghdadi (VD), Shawna McCallin (VD), Florian Tagini (VD)

Credits

Accreditation by the FAMH in Microbiology

Thursday 02.09.21

6 Credits

Friday 03.09.21

6 Credits

Accreditation by the Swiss Society for Infectious Diseases

Thursday 02.09.21

on request

Friday 03.09.21

on request

Accreditation for animal experimentation education

on request

Dear colleagues,

On behalf of the scientific committee, it is my great pleasure to welcome you to the annual congress of the Swiss Society for Microbiology on September 2nd and 3rd, 2021. We all live in very interesting times right now, and one consequence is that the conference will occur completely virtually. While at first glance this may appear as a negative, we strongly believe there are also positives. For example, rather than the scientific committee consisting of individuals primarily from the host location, our scientific committee is composed of individuals from research institutions and universities located throughout all of Switzerland (Geneva, Lausanne, Neuchâtel, Basel, Zürich, and Dübendorf). We therefore hope to offer a unified "Swiss" experience.

I am happy to announce an exciting scientific program comprising three keynote lectures from leaders in their fields and a total of 21 parallel sessions covering all aspects of microbiology (Clinical Microbiology, Environmental Microbiology, Molecular Microbiology, Mycology, and Virology). The program includes national and international invited speakers along with a number of contributed oral presentations selected from the submitted abstracts. The program also includes an exciting virtual poster session with ample time for stimulating discussions.

I am looking forward to an exciting meeting and I hope that many of you will join us!

Best regards and stay safe,



David R. Johnson
President of the SSM annual congress 2021

11.45-12.00 Introduction

David Johnson, Dübendorf; Pilar Junier, Neuchâtel

12.00-12.30 SPONSORED SYMPOSIUM BY ROCHE



Beyond the pandemic: the new normal in infectious diseases

Chair: Raphael Hafen, Roche

12.00-12.30 Microbiology diagnostics beyond the pandemic

M-01 Adrian Egli, Basel

12.30-12.45 Short break

12.45-13.45

KEYNOTE 1

Chairs: David Johnson, Dübendorf; Pilar Junier, Neuchâtel

12.45-12.50 Introduction

12.50-13.45 title tbd

K-01 Volker Thiel, University of Bern

13.45-14.00 Short break

14.00-15.15

Vidéo-clip

SESSION 1 **AUTOMATION IN CLINICAL BACTERIOLOGY** **CM 1**

Chair: Gilbert Greub, Lausanne

14.00-14.30 Automation in clinical bacteriology

M-02 Abdessalam Cherkaoui, Geneva

14.30-14.45 Increasing MALDI-TOF mass spectral quality increases the resolution of species identification

S-01 Aline Cuénod, Basel

14.45-15.00 Rapid detection of bacterial urinary tract infections using reporter phage-mediated bioluminescence

S-02* Susanne Meile, Zurich

15.00-15.15 Rapid identification of positive blood cultures: Multiplex-PCR versus MALDI-TOF mass spectrometry – Evaluation of the BioFire® FilmArray® Blood Culture Identification 2 Panels and comparison to the MBT Sepsityper IVD Kit

Angelika Ströhle, Niederwangen

* student paper

14.00-15.15

Vidéo-clip



SESSION 2 **ENVIRONMENTAL MICROBIOLOGY** **EM 1**

Chairs: Michael Daniels, Zurich; Rudolf Rohr, Fribourg

14.00-14.30 Exudate-microbiome interactions on Maize roots

M-03 Klaus Schlaeppi, Basel

14.30-14.45 Uncharted biosynthetic potential of the global ocean microbiome

S-04* Lucas Paoli, Zurich

14.45-15.00 Swiss River Resistome - the fate of antimicrobial resistance released into surface waters

S-05 Helmut Bürgmann, Dübendorf

15.00-15.15 Life in the Swiss underground and implications for the habitability of other planets

S-06 Cara Magnabosco, Zurich

SESSION 3 **SIGNAL TRANSDUCTION** **MM 1**

Chair: Justine Collier, Lausanne

14.00-14.30 The complexity of acid stress response: from receptors and translational regulation to phenotypic heterogeneity

M-04 Kirsten Jung, LMU München (DE)

14.30-14.45 Round-shaped Vibrio cholerae: a two-component system determines cell shape

S-07* Leonardo Rocha, Lausanne

14.45-15.00 Urine osmolarity enables L-form conversion and survival of uropathogenic Escherichia coli during exposure to cell-wall inhibitor fosfomycin

S-08* Frederic Normandeau, Lausanne

15.00-15.15 A non-invasive method for time resolved observation of microbial processes inside a host

S-09 Markus Arnoldini, Zurich

* student paper

14.00-15.15

Vidéo-clip



SESSION 4

MEDICAL MYCOLOGY

MY 1

Chair: Alix Coste, Lausanne

14.00-14.30 Invasive fungal superinfections in patients with severe COVID19
M-05

Arnaud Fekkar, Sorbonne University (FR)

14.30-14.45 Candida albicans commensalism in the oral mucosa
S-10

Salomé LeibundGut-Landmann, Zurich

14.45-15.00 Candida albicans and the host: the secrets of adaptation
S-11*

Ricardo Fróis-Martins, Zurich

15.00-15.15 Using in vivo transcriptomics to identify new, potential antifungal targets in Candida glabrata
S-12

Sanne Schrevels, Lausanne

SESSION 5

VIRUSES AND VIRULENCE FACTORS

VI 1

Chair: Jérôme Gouttenoire, Lausanne

14.00-14.30 Genome stability vs variability in herpesviruses and implications for virulence
M-06

Klaus Osterrieder, City University of Hong Kong (HKG) & Freie Universität Berlin (DE)

14.30-14.45 Investigation of the AAV2 uncoating mechanism
S-13*

Sereina Sutter, Zurich

14.45-15.00 Heparan sulfate binding mediates Enterovirus A71 virulence in immunosuppressed mice
S-14

Han Kang Tee, Geneva

15.00-15.15 Virus community in vectors and reservoir species
S-15

Jakub Kubacki, Zurich

15.15-15.45 Coffee break

* student paper

15.45-17.00

Vidéo-clip



SESSION 6

DIGITALISATION

CM 2

Chair: Adrian Egli, Basel

15.45-16.15 Early recognition of sepsis using machine learning
M-07

Karsten Borgwardt, ETH Zürich

16.15-16.30 Computer-aided medical microbiology monitoring tool: a strategy to adapt to the SARS CoV-2 epidemic and that highlights RT-PCR consistency
S-16

Linda Mueller, Lausanne

16.30-16.45 Predicting human gut microbiota status from cytometric fingerprints of microbes
S-17

Birge Ozel Duygan, Lausanne

16.45-17.00 Surveillance of antimicrobial resistance in Neisseria gonorrhoeae in Switzerland needs to improve: analysis of data from the Swiss Centre for Antibiotic Resistance, 2004 to 2020
S-18

Andreas Kronenberg, Bern

SESSION 7

STRUCTURE / FUNCTION

EM 2

Chairs: Klaus Schlaeppi, Basel; Cara Magnabosco, Zurich

15.45-16.10 Association of bacterial community types, functional microbial processes, and lung disease in cystic fibrosis airways
M-08

Stefanie Widder, Medical University of Vienna (AT)

16.10-16.30 Relating productivity and diversity in microbial communities: a theoretical and empirical approach
M-09

Rudolf Rohr, University of Fribourg

16.30-16.45 Coexistence and interactions on a single compound within a bacterial community
S-19

Rita Di Martino, Lausanne

16.45-17.00 Quantifying the consequences of metabolic interactions on single cell dynamics in microbial consortia
S-20*

Michael Daniels, Dübendorf

* student paper

15.45-17.00

SESSION 8 **EVOLUTION OF PATHOGENS** MM 2

Chair: Rolf Kümmerli, Zurich

- 15.45-16.15** **Evolution of microbe-host interactions in protists**
M-10 Matthias Horn, University of Vienna (AT)
- 16.15-16.30** **The large GTPase atlastin/Sey1 promotes pathogen vacuole formation in Legionella-infected Dictyostelium**
S-21* Dario Hüsler, Zurich
- 16.30-16.45** **An analog to digital converter controls bistable activation of a widespread bacterial conjugative element**
S-22 Nicolas Carraro, Lausanne
- 16.45-17.00** **Host derived metabolites shape microbial colonization in the gut of the western honey bee (*Apis mellifera*)**
S-23 Andrew Quinn, Lausanne

SESSION 9 **ENVIRONMENTAL MYCOLOGY** MY 2

Chair: Jürg Enkerli, Zurich

- 15.45-16.15** **Hidden fairy rings and males: insights into the ecology and lifecycle of the Burgundy truffle**
M-11 Martina Peter, WSL, Birmensdorf
- 16.15-16.30** **Diversity and sexuality of Swiss morels**
S-24* Melissa Cravero, Neuchâtel
- 16.30-16.45** **Does spatial and temporal separation of the European cockchafer affect the population structure of its most prevalent fungal pathogen?**
S-25* Chiara Pedrazzini, Zurich
- 16.45-17.00** **Microbes for the archaeological wood conservation**
S-26 Sathiyarayanan Ganesan, Neuchâtel

* student paper

15.45-17.00

SESSION 10 **HOST RESPONSE TO VIRAL INFECTIONS** VI 2

Chair: Caroline Tapparel, Geneva

- 15.45-16.15** **Infection and immune control of human oncogenic gamma-herpesviruses in vivo**
M-12 Christian Münz, University of Zürich
- 16.15-16.30** **Pulmonary mesenchymal stem cells are engaged in distinct steps of host response to respiratory syncytial virus infection**
S-27 Melanie Brügger, Bern
- 16.30-16.45** **Mechanical strength as a parameter in immunogenicity evaluation of antigen-carrying virus like particles**
S-28 Milad Radiom, Zurich

17.00-17.15 Short break

17.15-18.15

KEYNOTE 2

Chairs: David Johnson, Dübendorf; Pilar Junier, Neuchâtel

- 17.15-17.20** **Introduction**
- 17.20-18.15** **CRISPR interference-based synthetic circuits for precise control of gene expression**
K-02 Yolanda Schaerli, University of Lausanne

18.15 END OF DAY 1

* student paper

- CM Clinical Microbiology
- EM Environmental Microbiology
- MM Molecular Microbiology
- MY Mycology
- VI Virology

08.15-08.30 Short introduction
David Johnson, Dübendorf; Pilar Junier, Neuchâtel

08.30-09.30 GENERAL ASSEMBLY **OPEN TO MEMBERS ONLY**
Chair: Pilar Junier, Neuchâtel
Board Committee

09.30-09.45 Short break

09.45-12.00

E-POSTER SESSIONS

CHATROOMS

09.45-12.00 CLINICAL MICROBIOLOGY (CM)
Chair: Florian Tagini, Lausanne

09.45-12.00 ENVIRONMENTAL MICROBIOLOGY (EM)
Chair: Josep Ramoneda, Dübendorf

09.45-12.00 MOLECULAR MICROBIOLOGY (MM)
Chairs: Jan Roelof van der Meer, Lausanne; Jörg Jores, Bern

09.45-12.00 VIROLOGY (VI)
Chair: Jérôme Gouttenoire, Lausanne

12.00-12.45 Lunch break

12.45-13.45

KEYNOTE 3

Chairs: David Johnson, Dübendorf; Pilar Junier, Neuchâtel

12.45-12.50 Introduction

12.50-13.45 Azoles here, azoles there, are azoles used everywhere?
From agriculture to zoo
K-03
Michaela Lackner, University of Innsbruck (AT)

13.45-14.00 Short break

14.00-15.15

Vidéo-clip 

SESSION 11 **MYCOBACTERIA** **CM 3**

Chair: Peter Keller, Bern

14.00-14.30 Nontuberculous mycobacteria - old and new challenges in the diagnostic lab
M-13
Bettina Schulthess, University of Zürich

14.30-14.45 Method development for pre-clinical validation of Resistell nanomotion-based antibiotic susceptibility test for tuberculosis
S-29
Anthony Vocat, Lausanne

14.45-15.00 Nanomotion-based Antimicrobial Susceptibility Test: an Innovative Method to Study Intracellular Bacteria such as Chlamydia trachomatis and Waddlia Chondrophila
S-30*
Christèle Aubry, Lausanne

15.00-15.15 Mycoplasma pneumoniae prevalence before and during the COVID-19 pandemic: results of a global survey, 2017-2021
S-31
Patrick Meyer Sauteur, Zurich

SESSION 12 **ENG & CONTROL** **EM 3**

Chairs: Sara Mitri, Lausanne; Astrid Stubbusch, Dübendorf

14.00-14.30 From synthetic communities to the dark matter of screening
M-14
Sven Panke, ETH Zürich

14.30-14.45 A classifier to identify bacterial strains in non-fluorescent time-lapse microscope images
S-32
Helena Todorov, Lausanne

14.45-15.00 A theoretical comparison of artificial community selection methods
S-33*
Björn Vessman, Lausanne

15.00-15.15 Exploring the potential of wastewater enzymes to transform antimicrobial peptides
S-34*
Natalie Wichmann, Dübendorf

* student paper

14.00-15.15

Vidéo-clip



- SESSION 13 **CELLULAR MICROBIOLOGY** MM 3
 Chair: Hubert Hilbi, Zurich
- 14.00-14.30** **The ability of *Yersinia* to persist in gut-associated lymphatic tissues**
 M-15
 Petra Dersch, University of Münster (DE)
- 14.30-15.00** ***Chlamydia* - Host cell interactions at the crossroad of metabolism and immune defence**
 M-16
 Thomas Rudel, University of Würzburg (DE)
- 15.00-15.15** **Heterogeneity in iNOS expression is linked to differential control of *Mycobacterium tuberculosis* growth by macrophages**
 S-35
 Ophélie Rutschmann, Lausanne

- SESSION 14 **FUNDAMENTAL MYCOLOGY** MY 3
 Chairs: Markus Künzler, Zurich; Claudio de Virgilio, Fribourg
- 14.00-14.30** **Incompatibility in *Podospora* and transkingdom conservation of regulated cell death pathways**
 M-17
 Sven Saupe, University of Bordeaux (FR)
- 14.30-14.45** **Characterization of the gene repertoires of the *Pneumocystis jirovecii* major surface glycoprotein in patients**
 S-36*
 Caroline Meier, Lausanne
- 14.45-15.00** ***Candida albicans* & *Aspergillus niger* interaction – New insights into a fungal-fungal interaction**
 S-37
 Fabio Palmieri, Neuchâtel
- 15.00-15.15** **Creating an artificial fungal highway**
 S-38*
 Thierry Kuhn, Neuchâtel

* student paper

14.00-15.15

Vidéo-clip



- SESSION 15 **HIV, HEPATITIS AND ANTIVIRAL THERAPIES** VI 3
 Chair: Karin Metzner, Zurich
- 14.00-14.20** **Towards the HIV cure: delivering Crispr-Cas into the CD32+ T cell reservoir**
 M-18
 Ben Berkhout, University of Amsterdam (NL)
- 14.20-14.45** **Single cells facing HIV M-19**
 M-19
 Angela Ciuffi, University of Lausanne
- 14.45-15.00** **A novel anti-influenza combined therapy characterized using single cell RNA-sequencing**
 S-39
 Chiara Medaglia, Geneva
- 15.00-15.15** **Antiviral activity of geneticin against SARS-COV-2**
 S-40*
 Grégory Mathez, Lausanne
- SESSION 16 **LAY COMMUNICATION**
 Chair: Saskia Bindschedler, Neuchâtel
- 14.00-14.15** **Microbes go to school: using microbiology and service learning to connect scientists and society**
 S-41*
 Mathilda Fatton, Neuchâtel
- 14.15-14.30** **Impact of the COVID_19 pandemic on Swiss media communication**
 S-42
 Arnav Sandu, Lausanne
- 14.30-14.45** **KROBS and MyKROBS: two playful card games to develop people's awareness of pathogenic microorganisms**
 S-43
 Gilbert Greub, Lausanne

15.15-15.45 **Coffee break**

* student paper

15.45-17.00

SESSION 17 **NEXT GENERATION SEQUENCING** **CM 4**

Chair: Claire Bertelli Lombardo, Lausanne

15.45-16.15 Revealed! Hidden typing stories retold with genomes

M-20 Helena Seth-Smith, University Hospital Basel

16.15-16.30 Microbiota controls the maintenance of Salmonella virulence

S-44* Ersin Gül, Zurich

16.30-16.45 Assessment of SARS-CoV-2 genome sequencing: quality criteria and low frequency variants

S-45 Damien Jacot, Lausanne

16.45-17.00 Using genomic data to establish the genus Phytobacter on the list of clinically relevant Enterobacteriaceae

S-46 Fabio Rezzonico, Zurich

SESSION 18 **BIOFILMS** **EM 4**

Chair: Christof Holliger, Lausanne

15.45-16.15 Regulation of biofilm formation by flow and substrate mechanics

M-21 Alex Persat, EPFL

16.15-16.30 Gut Microbiota as a Key Player in Mammalian Arsenic Metabolism

S-47* Mohana Mukherjee, Bern

16.30-16.45 Spatial community coalescence creates genetic and functional novelty in surface-attached microbial communities

S-48 Josep Ramoneda, Dübendorf

16.45-17.00 Negative interactions dominate strain-level diversity in the honey bee gut microbiota

S-49* Silvia Brochet, Lausanne

* student paper

15.45-17.00

SESSION 19 **BACTERIAL SECRETION AND TRANSPORT** **MM 4**

Chair: Martin Pilhofer, Zurich

15.45-16.15 Dynamic of the *Pseudomonas aeruginosa* type VI secretion system (T6SS) and multimodal delivery of antibacterial toxins

M-22 Alain Filloux, Imperial College London (GB)

16.15-16.30 A thylakoid-anchored contractile injection system in *Cyanobacteria*

S-50 Gregor Weiss, Zurich

16.30-16.45 A putative fatty acid transporter required for intracellular growth of *Legionella pneumophila*

S-51* Pia Stauffer, Zurich

16.45-17.00 *Listeria* and its cell wall teichoic acids: a love and hate relationship

S-52 Yang Shen, Zurich

Vidéo-clip



SESSION 20 **ANTIFUNGAL RESISTANCE** **MY 4**

Chair: Philipp Bosshard, Zurich

15.45-16.15 Emerging treatment failure in dermatophytosis: genotyping and resistance testing in *T. mentagrophytes*

M-23 Philipp Bosshard, University of Zürich

16.15-16.45 The threat of parallel emergence of fungicide resistance in agriculture

M-24 Daniel Croll, University of Neuchâtel

16.45-17.00 YeastOne and Micronaut-AM antifungal susceptibility assays comparison

S-53 Alix Coste, Lausanne

* student paper

Vidéo-clip



- SESSION 21 **INFLUENZA AND RESPIRATORY VIRUSES** VI 4
 Chair: Mirco Schmolke, Geneva
- 15.45-16.15** **Dynamic cortactin phosphorylation limits influenza A virus uptake by Counterfacing infection-triggered filopodia induction**
 M-25
 Silke Stertz, University of Zürich
- 16.15-16.30** **Influenza A virus protein NS1 prevents ER stress induction through its ability to bind CPSF30: a strategy to improve the current live attenuated influenza vaccine**
 S-54
 Beryl Mazel-Sanchez, Geneva
- 16.30-16.45** **A LC3-interacting motif in the M2 protein is important for efficient release of infectious influenza A virus**
 S-55*
 Christiana Cismaru, Bern
- 16.45-17.00** **External quality assessment of SARS-CoV-2 sequencing: a pilot trial across 15 European laboratories**
 S-56
 Fanny Wegner, Basel

17.00-17.15 Short break

17.15-17.45 POSTER AWARDS

- 17.15-17.45 Awards** (with the kind support of BioMérieux)
 David Johnson, Dübendorf
- Save the date – **next SSM meeting 2022**
 Pïlar Junier, Neuchâtel

17.45 END OF THE SSM ANNUAL MEETING 2021

* student paper

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