



SGM·SSM

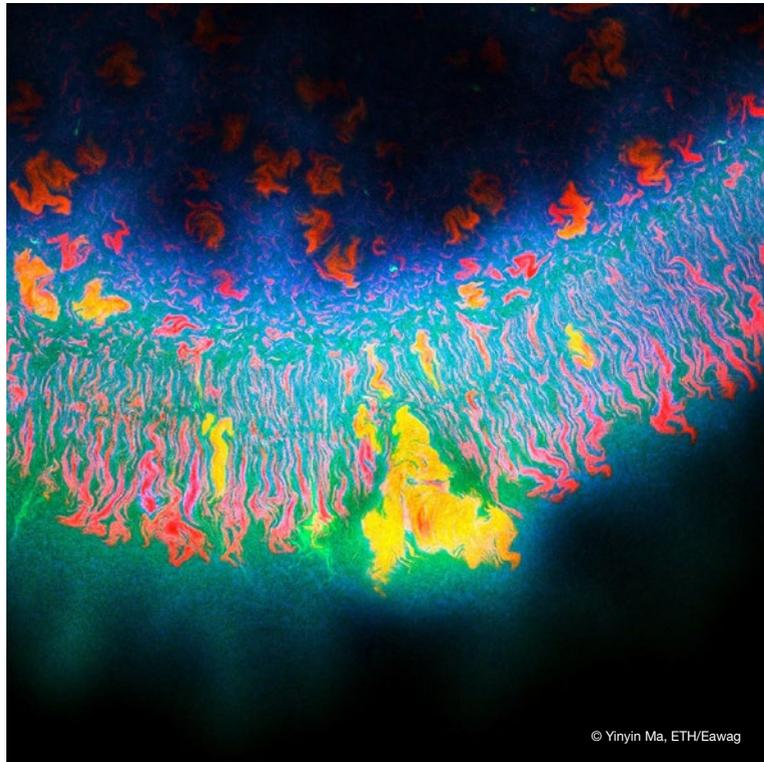
**Swiss Society for Microbiology SSM**

# ANNUAL CONGRESS 2021

**September 2-3, 2021**

**Full virtual event**

Program



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Online registration on [www.meeting-com.ch/](http://www.meeting-com.ch/)  
Conferences & Meetings

General information	3
Organization	4
Welcome word	5
Program 02.09.21	6-11
Program 03.09.21	12-18
Kind thanks to our sponsors	19

## Venue

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

## Registration

online on [www.meeting-com.ch](http://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](http://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**  
S-03\* 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**  
Pilar Junier, Neuchâtel

**17.45 END OF THE SSM ANNUAL MEETING 2021**

\* student paper

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