



SWISS SOCIETY FOR MICROBIOLOGY



Annual congress 2023

Lausanne University Hospital CHUV
Rue du Bugnon 46, 1011 Lausanne

August 30-31, 2023

PROGRAM



Congress office Management

Meeting.com Congress Organisation
Rue des Pâquis 1 • CH-1033 Cheseaux-sur-Lausanne
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Congress organization – Scientific committee

Prof. Gilbert Greub, Institute of Microbiology, CHUV, Lausanne

Alix Coste, Institute of Microbiology, CHUV, Lausanne

Clinical Microbiology

Adrian Egli, Basel; Jacques Schrenzel, Lausanne; Peter Keller, Bern

Early career

Florian Tagini, Lausanne

Environmental Microbiology

Cara Magnabosco, Zurich; Jürg Enkerli, Zurich

Lay Communication

Gilbert Greub, Lausanne

Molecular Microbiology

Hubert Hilbi, Zurich; Jan-Willem Veening, Lausanne

Mycology

Alix Coste, Lausanne; Jürg Enkerli, Zurich

Microbiomes

Pascale Vonaesch, Lausanne

Virology

Volker Thiel, Bern; Valeria Cagno, Lausanne

Dear Colleagues,

On behalf of the Scientific Committee, we are pleased to invite you to the upcoming annual congress of the Swiss Society for Microbiology on August 30-31, 2023 at Lausanne University Hospital CHUV, in Lausanne.

The scientific program includes keynote presentations by Mélanie Blokesch (Lausanne), Victor Nizet (San Diego, US) and Alex Probst (Essen, DE). In addition, we will have poster and oral presentations in the fields represented in the Society, as well as “My Thesis in 180 seconds” session, and a “Speed science” presentation. As novelty, there will be two sessions of “Elevator pitch presentations”, which is introduced for the first time this year at the SSM congress. This presentation format was originally developed in the world of business but has quickly caught on in the scientific community. The concept is easy: imagine that you are by chance in an elevator with a famous clinician or scientist and you want to introduce yourself and your work. You will have the time of an elevator ride to convince him/her to continue the discussion about your work afterwards. Thus, the poster selected for presentation as elevator pitch will initially have only 1 single slide and only 45 seconds to convince the audience to allow them more time to present their work.

You should expect interactive and dynamic sessions!

Do not miss this event, with interesting lectures and discussion to come.

We look forward to welcoming you in Lausanne on this occasion.

With kind regards,

Gilbert Greub and Alix Coste
Institute of Microbiology, CHUV, Lausanne

Venue

Lausanne University Hospital CHUV
Rue du Bugnon 46, 1011 Lausanne
www.chuv.ch

Registration

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

Registration fee	Early fee (until July 30, 2023)	Late fee & onsite (as of July 31, 2023)
MEMBER*	CHF 300.00	CHF 400.00
NON-Member	CHF 400.00	CHF 500.00
Student Member*	CHF 150.00	CHF 220.00
Student NON-Member**	CHF 200.00	CHF 270.00

Gala Dinner on Wednesday, August 30, 2023

CHF 120.00 (limited places)

At the Olympic Museum, Lausanne

Early career session – Tuesday, August 29, 2023

I participate in the early career session on Tue August 29, 2023 at 15h30

yes (included in the registration fees)

I participate in the early career evening on Tue August 29, 2023 at 18h00

yes (NOT included in the registration fees)

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 2023 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 info@meeting-com.ch

Gala Dinner

On Wednesday August 30, 2023 at the Olympic Museum, Quai d'Ouchy 1, 1006 Lausanne

From 18.00 Visit of the museum

19.30 Aperitif

20.00 Gala Dinner

Congress office management

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Credits in demand to

- FAMH in Microbiology
- Swiss Society for Infectious Diseases
- Animal Experimentation

Abstract book link

https://www.meeting-com.ch/fileadmin/user_upload/Abstract_books/SSM_2023_Abstract_Book.pdf



Session I on Wednesday, August 30, 2023 at 13.30-14.15
Session II on Thursday, August 31, 2023 at 12.05-12.45
Plenary Room César Roux

The elevator pitch is an innovative presentation format, which will be introduced for the first time this year at the SSM congress in 45-minute sessions on August 30 and 31, 2023, just before the poster sessions. This presentation format was originally developed in the world of business but has quickly caught on in the scientific community. The concept is easy: imagine that you are by chance in an elevator with a famous clinician or scientist and you want to introduce yourself and your work. You will have the time of an elevator ride to convince him/her to continue the discussion about your work afterwards.

There will be 15 candidates each day (total of 30) who will compete to get selected for a full 4-minute talk, based on a single slide.

In the first part all authors will have **1 minute to present 1 slide to convince the jury (= audience) of the quality of their work** as such

- 15 seconds time to change speaker and to allow the audience to read the **Poster Number / Authors Names / Title**
- 45 seconds to present the slide

Then, the audience will vote (using smart phone & QR code) to select the 5 best speakers, who will then have each 4 minutes (4 slides) to present the end of their presentation.

If the first introduction is convincing and intriguing, the 5 best speakers will be selected for the second part and the jury will let you talk about your abstract for additional **3 minutes (+ 1 minute for discussion)**.

Thus all 30 speakers must prepare their "initial slide" and "4 additional slides", however, only 33% of the speakers will have the chance to present all their slides.

You should expect an interactive and dynamic session!

On Wednesday, August 30, 2023 at 16.15-17.00
Plenary Room César Roux

Speed science is a session where posters are highlighted in 3-minute time slot, in addition to a poster in paper format.

- The allocated speaking time is 3 minutes and no time for discussion
- The moderators will ensure that the time limit is not exceeded.

Be prepared for an exciting session!

On Thursday August 31, 2023 at 09.30-10.00

Plenary room César Roux

Selected abstracts from the submission process from PhD and MD PhD students will present their thesis in 180 seconds using lay words.

There will be a price for the best presentation. But it is not the quality of the science that is considered at all here. The jury will consider the following criteria :

- Timing
 - Story telling
 - Humor
 - Illustrations
 - Keep it simple
 - Art of speaking
-
- The talks will be exactly 180 seconds (3mn) each
 - No question/discussion since it is based on a talk of 180 seconds exactly
 - The moderators will ensure that the time limit is not exceeded.

Be prepared for a dynamic session!

You will have the possibility to try the Krobs/My Krobs games during the poster/lunch break on both days, as well as from 17h to 18h on August 31, 2023. The location will be indicated on site :

- **Wednesday, 30.08.23 during lunch break (12.30-13.30)**
- **Thursday, 31.08.23 during lunch break (12.45-14.00)**
- **Thursday, 31.08.23 after the meeting (17.00-18.00)**



On Thursday August 31, 2023 at 16.00-16.15

Plenary room César Roux

During the meeting, you may be lucky and win one of the following awards :

- Best Oral Presentation : 5 Awards (one per section) in the context of the annual meeting presentations.
- Poster Award : 3 Awards selected during the annual meeting by an ad-hoc award committee
- My thesis in 180 seconds award : 1 award will be given to the best presentation

All the above mentioned awards as well as the SSM Encouragement Award will be presented at the end of the meeting during the very last session.

The SSM encouragement award is given to young investigators in the field of microbiology for achievements that are outstanding in terms of their originality and of particular scientific value. Achievements in the field of teaching as well as research and development are taken into consideration as well. The Award is given for a work that has been carried out in Switzerland or that is closely connected with our country. To know more about the rules, please go to <https://www.swissmicrobiology.ch/society/awards>

EARLY CAREER SESSION

CHARLOTTE OLIVIER

15.30-16.30 Grant writing
Nele Gheldof, Lausanne

16.30-17.00 Coffee break

17.00-18.00 Resilience

17.00-17.15 Student's point of view – Kannan Venugopal, Zurich

17.15-17.30 PI's point of view – Angela Ciuffi, Lausanne

17.30-17.45 PhD student association representative's point of view
– Hammam Antar, Lausanne

17.45-18.00 Open discussion

As from 18.00 Early Career evening with apero in the city and burgers
(not included in the congress fees)

07.30 Registration **FOYER**

08.45-08.55 Introduction **CÉSAR ROUX**
Alix Coste, Gilbert Greub, Lausanne

08.55-09.25

KEYNOTE 1 **CÉSAR ROUX**

Chairs: Alix Coste, Gilbert Greub, Lausanne

K-01 **Molecular secrets of 7th pandemic *Vibrio cholerae***
Mélanie Blokesch, Lausanne

09.30-10.30

SESSION 1 **SCIENCE AND POLICY** **CÉSAR ROUX**
Chairs: Pascale Vonaesch, Lausanne; Adrian Egli, Zurich

09.30-10.00 **Disease modelling and its contribution to decision making** –
M-01 Narimane Nekkab, Basel

10.00-10.15 **Reorientation of the Coordinated Medical Service – a Journey**
S-01 **Has Begun** – Tenzin Lamdark, Basel

10.15-10.30 **IVDR: applications of the In Vitro Diagnostic Ordinance**
S-02 **in Switzerland and possible impacts** –
Alix Coste and Gilbert Greub for CCCM-SSM

SESSION 2 **MACHINE LEARNING IN MICROBIOLOGY** **ALEXANDRE YERSIN**
Chairs: Birge Özel Duygan, Lausanne; Peter Keller, Bern

09.30-10.00 **Early detection of sepsis using machine learning** –
M-02 Catherine Jutzeler, Zurich

10.00-10.15 **Microbiota analysis by cell-type recognition to enable fast and**
S-03 **reliable medical diagnosis** – Birge Özel-Duygan, Lausanne

10.15-10.30 **Genome validation and expansion of the family of Borg archaeal**
S-04 **extrachromosomal elements reveals a syntenous core genetic repertoire** – Marie Schoelmerich, UC Berkeley (US)

09.30-10.30

SESSION 3 **VACCINE AND NOVEL THERAPIES** **AUGUSTE TISSOT**

Chairs: Valeria Cagno, Lausanne; Volker Thiel, Bern

09.30-10.00 **New vaccines against emerging zoonotic infections: From**
M-03 **animal models to clinical evaluation** – Asisa Volz, Hannover (DE)

10.00-10.15 **Antimicrobial Cationic Coating for Rapid Self-Disinfecting**
S-05 **Surfaces** – Jules Valentin, Fribourg

10.15-10.30 **Novel attachment inhibitors against human parainfluenza 3 virus**
S-06*/P-142* **with broad-spectrum activity** – Gregory Mathez, Lausanne

SESSION 4 **ADVANCES IN MICROSCOPY** **MATHIAS MAYOR**

Chairs: Suliana Manley, Lausanne; Damien Jacot, Lausanne

09.30-10.00 **Discovering patterns in growth and division with advanced**
M-04 **microscopy** – Suliana Manley, Lausanne

10.00-10.15 ***Staphylococcus aureus*: localization and responses to**
S-07* **antibiotics in human patients** – Vishwachi Tripathi, Basel

10.15-10.30 **Towards Label-Free Recognition of Single Cell Bacterial Species**
S-08/P143 **Based on Phase Contrast Timelapses** –
Bouke Bentvelsen, Lausanne

10.30-11.00 Coffee break / Poster viewing / Exhibition **EXHIBITION**

* Student presentation

11.00-12.30

SESSION 5 **EMERGING MICROBES** CÉSAR ROUX
 Chairs: Rahel Ackermann, Neuchâtel; Frédéric Lamothe, Lausanne

- 11.00-11.30** **From zoonotic to pandemic – animal influenza viruses as the looming danger?** – Martin Beer, Greifswald - Insel Riems (DE)
M-05
- 11.30-11.45** **2022 European outbreak of *Corynebacterium diphtheriae* among migrants illuminated through whole genome sequencing**
S-09
– Helena Seth-Smith, Zurich
- 11.45-12.00** **First evidence of cyanobacteria from the *Phorimidium* genus producing cyanopeptoline: a study case in a Swiss lake**
S-10
– Sami Zhioua, Neuchâtel
- 12.00-12.15** **Geographical Patterns and Genomic Analysis of SARS-CoV-2 Transmission Clusters during the Alpha, Delta, and Omicron Variants epidemic waves** – Yangji Choi, Lausanne
S-11*
- 12.15-12.30** **Preparations for the first autochthonous transmission of West Nil Virus in Switzerland – a One Health approach**
S-12
– Monica Wymann, Bern

SESSION 6 **SYSTEMS BIOLOGY** ALEXANDRE YERSIN
 Chairs: Amelieke Cremers, Lausanne;
 Jan Roelof Van der Meer, Lausanne

- 11.00-11.30** **Microscale strategies that govern nutrient flux in polysaccharide degrading Communities** – Sammy Pontrelli, Zurich
M-06
- 11.30-11.45** **A unifying theory of environmentally-mediated interaction dependencies** – Oliver Meacock, Lausanne
S-13
- 11.45-12.00** **Co-immobilisation of a defined gut consortium for continuous cultivation – a demonstration study** – Mathieu Verpaalen, Zurich
S-14*/P-144*
- 12.00-12.15** **Habitat fragmentation and single-cell heterogeneities create ecological opportunities for reversal of bacterial competition**
S-15*/P-145*
– Maxime Batsch, Lausanne
- 12.15-12.30** **Microorganisms as a benchmark: towards the remote detection of life beyond Earth** – Mathilda Fatton, Neuchâtel
S-16

* Student presentation

11.00-12.30

SESSION 7 **BIOFILMS** AUGUSTE TISSOT
 Chairs: Kimberly Kline, Geneva; David Johnson, Dübendorf

- 11.00-11.30** **Pathogenesis of polymicrobial biofilm-associated infections**
M-07
– Kimberly Kline, Geneva
- 11.30-11.45** **Live tracking of *Pseudomonas aeruginosa* infections in lung organoids reveals strong metabolic and biophysical fitness trade-offs** – Lucas Meirelles, Lausanne
S-17
- 11.45-12.00** **Cell lysis caused by prophage induction leads to the formation of biofilm streamers in *Burkholderia cenocepacia* H111** – Zaira Maria Heredia Ponce, Zurich
S-18
- 12.00-12.15** **Fluorescence-guided imaging for point-of-care visualization of bacterial biofilms on orthopedic material – An in vitro study** – Tiziano Angelo Schweizer, Zurich
S-19
- 12.15-12.30** **The *Legionella pneumophila* nitric oxide receptors Hnox1, Hnox2 and NosP control biofilm** – Sarah Michaelis, Zurich
S-20*

SESSION 8 **FROM MOLECULES TO FUNCTION** MATHIAS MAYOR
 Chairs: Mélanie Blokesch, Lausanne; Nicolas Jacquier, Lausanne

- 11.00-11.30** **Induction and antagonism of an endogenous retroelement-based immune response by respiratory RNA viruses**
M-08
– Ben Hale, Zurich
- 11.30-11.45** **CRISPRi-Seq identifies genes enhancing phage endolysin Cpl-1 susceptibility in *S. pneumoniae*** – Hugues de Villiers de la Noue, Lausanne
S-21*/P-146*
- 11.45-12.00** **Mechanism and regulation of bacterial predation via ixotrophy** – Yun-Wei Lien, Zurich
S-22*
- 12.00-12.15** **Elucidating the molecular determinants underlying the anti-*Phytophthora* activity of potato-associated *Pseudomonas*** – Livia Jerjen, Fribourg
S-23*
- 12.15-12.30** **Single-gene functional interrogation of bacterial secondary bile acid dehydroxylation in *Clostridioides difficile* colonization resistance** – Luca Beldi, Bern
S-24*/P-147*

12.30-13.30 Lunch Break / Poster walk / Exhibition EXHIBITION
POSTERWALK EVEN NUMBERS

* Student presentation

13.30-14.15

ELEVATOR PITCH SESSION I (*list on page xxx*) **CÉSAR ROUX**
 Chairs : Alix Coste, Lausanne; Gilbert Greub, Lausanne

- 13.30-13.35** Introduction
- 13.35-13.50** First round (15 x 1mn = 1 slide/author)
- 13.50-14.15** Second round (5 x 4mn -3mn discussion+1mn question = 4 slides/author)

14.15-15.45

SESSION 9 **MOLECULAR DIAGNOSIS** **CÉSAR ROUX**
 Chairs : Aurélie Jayol, Yverdon; Onya Opota, Lausanne

- 14.15-14.45** **Molecular diagnostics – what, when and how**
 M-09 – Hege Vangstein Aamot, Oslo (NO)
- 14.45-15.00** **A HIGH THROUGHPUT TBEV SERONEUTRALIZATION ASSAY OVERCOMES ELISA LIMITATIONS** – Valerie Cagno, Lausanne
 S-25
- 15.00-15.15** **Nanobody-mediated capture of gram-negative pathogens – a journey through the sugar jungle** – Michèle Sorgenfrei, Zurich
 S-26*
- 15.15-15.30** **The implications of DNA extraction methods on Legionella quantification in drinking water: towards method standardization** – Alessio Cavallaro, Zurich
 S-27*
- 15.30-15.45** **A prospective method comparison of a novel PCR-based assay and conventional culture method for the identification of obligate pathogenic dermatophytes in clinical samples** – Dominique Hilti, Labor Dr Risch
 S-28*

* Student presentation

14.15-15.45

SESSION 10 **MICROBIOTA AND METAGENOMICS** **ALEXANDRE YERSIN**
 Chairs : Claire Bertelli, Lausanne; Christof Holliger, Lausanne

- 14.15-14.45** **Organic and conventional agriculture promote distinct soil microbiomes with contrasting metabolic potentials**
 M-10 – Martin Hartmann, Zurich
- 14.45-15.00** **Improving the assessment of soil archaeal diversity: a comparison of universal prokaryote and domain-specific metabarcoding** – Florian Gschwend, Zurich
 S-29
- 15.00-15.15** **Functional diversity in microbial communities an 8,000-year lacustrine sedimentary sequence** – Paula Rodriguez, Zurich
 S-30
- 15.15-15.30** **Finding an anatoxin-a producing strain in the haystack of benthic cyanobacterial communities** – Diego Gonzalez, Neuchâtel
 S-31
- 15.30-15.45** **Disentangling the role of the oral commensal *Streptococcus salivarius* in small intestinal inflammation in the context of childhood malnutrition** – Carla Hernández-Cabanyero & Youzheng Teo, Lausanne
 S-32

SESSION 11 **ONE HEALTH** **AUGUSTE TISSOT**
 Chairs : Pilar Junier, Neuchâtel; Vincent Perreten, Bern

- 14.15-14.45** **Antimicrobial resistance in a One Health perspective**
 M-11 – Jesper Larsen, Copenhagen (DK)
- 14.45-15.00** **Determining the impact of veterinary antibiotics sub-dosage on resistance transfer in animal gut microbiota - a One-Health approach** – Otávio Raro, Fribourg
 S-33
- 15.00-15.15** **Development of a triplex digital PCR assay for monitoring opportunistic pathogens in water system** – Anne Vescovi, Zurich
 S-34
- 15.15-15.30** **Implementation and Validation of two Real-Time PCRs on an In-House Automated Molecular Diagnostic Platform for the Detection of Alongshan Virus (ALSV), a novel tick born pathogen associated with Tick-Borne Encephalitis Like Disease** – Onya Opota, Lausanne
 S-35
- 15.30-15.45** **Survey on the presence and spread of West Nile Virus among potential avifaunal and entomological reservoir species in Canton Ticino** – Giulia Zezza, Bellinzona
 S-36

14.15-15.45

SESSION 12 **CELL MICROBIOLOGY** MATHIAS MAYOR
 Chairs: Carole Kebbi-Beghdadi, Lausanne; Markus Kuenzler, Zurich

- 14.15-14.45** *Metabolic imprint of infection by **Chlamydia trachomatis***
 M-11 – Agathe Subtil, Paris (FR)
- 14.45-15.00** *Structure-function analysis of the cyclic β -1,2-glucan synthase*
 S-37 – Jaroslaw Sedzicki, unibas, Basel
- 15.00-15.15** *Beyond the Core: Unveiling the Molecular Secrets of Bacterial RNA Helicases*
 S-38 – Martina Valentini, Geneva
- 15.15-15.30** *Subversion of IMPDH2 oncoprotein activity by Legionella effectors*
 S-39* – Pia Stauffer, Zurich
- 15.30-15.45** *Dissecting how galactosylated teichoic acids modulate the function of the Actin Assembly-Inducing Protein ActA in **Listeria monocytogenes** virulence*
 S-40* – Sven Krähenbühl, Zurich

15.45-16.15 **Coffee break / Poster viewing / Exhibition** EXHIBITION

* Student presentation

16.15-17.00

SPEED SCIENCE (3mn/speed presentation) CÉSAR ROUX

Chairs: Angela Ciuffi, Lausanne; Alexis Dumoulin, Sion

- 16.15-16.18** A reactor for the large-scale production of Legionella SP 01*/P-001* pneumophila-containing biofilms – Céline Margot, Zurich
- 16.18-16.21** Dissecting recurrent UTIs using a 3D human mini bladder SP 02*/P-002* microtissue model – Gauri Paduthol, Lausanne
- 16.21-16.24** A novel WYL domain containing protein is a transcriptional SP 03*/P-003* activator in response to genotoxic and oxidative stress – Lena Maria Keller, Zurich
- 16.24-16.27** Investigation of the Min system in the division process of SP 04*/P-004* Acinetobacter baumannii – Melissa Frund, Lausanne
- 16.27-16.30** Characterization of chlamydial ndk and its role in cell SP 05*/P-005* differentiation, from elementary bodies to reticulate bodies – Giti Ghazi-Soltani, Lausanne
- 16.30-16.33** Predicting xenobiotic biotransformation by the urinary SP 06*/P-006* microbiota: Is paracetamol on the menu? – Thierry Marti, Zurich
- 16.33-16.36** “It’s a trap!”: Toxin-antitoxin system Stheno prevents the spread SP 07*/P-007* of phage infection in bacterial populations – Aisylu Shaidullina, Basel
- 16.36-16.39** The insect pathogenic fungus Metarhizium in Swiss grassland SP 08*/P-008* soils – Noemi Küng, Basel
- 16.39-16.42** Chlamydia suis displays high transformation susceptibility with SP 09/P-009 complete chromosomal integration into the intergenic rrn-nqrF plasticity zone – Hanna Marti, Zurich
- 16.42-16.45** The essential insertase BamA: an entry point for antimicrobial SP 10/P-010 peptides in Gram-negative bacteria? – Nicolas Jacquier, Lausanne
- 16.45-16.48** One-step soft agar enrichment and isolation of human lung SP 11/P-011 bacteria inhibiting the germination of Aspergillus fumigatus conidia – Fabio Palmieri, Neuchâtel
- 16.48-16.51** Monitoring enteric viruses in Swiss wastewater SP 12/P-012 – Jolinda de Korne, Zurich

17.00-18.00 **General assembly** (open to members only) CÉSAR ROUX

Chair: Jacques Schrenzel, Geneva
 SSM Board Committee

As from 18.00 **Visit of the Olympic Museum** OLYMPIC MUSEUM
19.30 **Aperitif**
20.00 **Gala dinner**

00.00 **END OF DAY 1**

* Student presentation

07.30 Registration FOYER

08.45-09.30

Keynote 2 CÉSAR ROUX
 Chairs: Coralie Fumeaux, Lausanne; Jan-Willem Veening, Lausanne
 K-02 **Combating Multidrug-Resistant Superbugs by Targeting the Host-Pathogen Interaction**
 Victor Nizet, San Diego (US)

09.30-10.00 MY THESIS IN 180 SECONDS CÉSAR ROUX
 Chairs: Hanna Marti, Zurich; Gilbert Greub, Lausanne

09.30-09.35 Understanding polymicrobial urinary tract infections: from retrospective data analysis, through catheter biofilms, to bladder microtissue models – Ashim Kumar Dubey, Lausanne
 MT-01*/P-013*

09.35-09.40 Investigating the mechanisms implicated in the biogenesis of aberrant bodies in Chlamydiae – Thomas Kozusnik, Lausanne
 MT-02*/P-014*

09.40-09.45 Into the Wild: Understanding Antibiotic Resistance using Clinical Strains – Fabienne Estermann, Basel
 MT-03*/P-015*

09.45-09.50 Synergistic targeting pathogenic enterococci with phage-encoded peptidoglycan hydrolases and wall teichoic acid inhibitors – Samuel Staubli, Zurich
 MT-04*/P-016*

09.50-09.55 Monitoring Antimicrobial Resistance in Swiss Wastewaters
 MT-05*/P-017* – Sheena Conforti, Zurich

10.00-10.30 Coffee break / Poster viewing / Exhibition EXHIBITION

* Student presentation

10.30-12.00

SESSION 13 **LAY COMMUNICATION** CÉSAR ROUX
 Chairs: Shawna McCallin, Zurich; Karl Perron, Geneva

10.30-10.45 Explaining new therapies to lay persons: the example of phage therapy – Shawna McCallin, Zurich
 M-13

10.45-11.00 Engaging citizens on AMR and behaviour changes on antibiotic consumption: The campaign Makeaware – Serena Cangiano and Ginevra Terenghi, Design Institute SUPSI
 M-21

11.00-11.15 Bacttles: a microbiology educational tool for general public and schools – Tanja Miguel Trabajo, Lausanne
 S-41 / P-148

11.15-11.30 Impact of the SARS-CoV-2 pandemic on media communication in French-speaking Switzerland – Soline Couty, Lausanne
 S-42*

11.30-11.45 Microbial interactions and soil functioning: a game to introduce key concepts in microbiology to biology students – Aislinn Estoppey, Neuchâtel
 S-43

11.45-12.00 Explain microbiology using cartoons – Gilbert Greub, Lausanne
 S-44

SESSION 14 **GENOMICS** ALEXANDRE YERSIN
 Chairs: Helena Seth-Smith, Zurich; Pierre-Yves Bochud, Lausanne

10.30-11.00 Functional genomics by overexpression in the fungal pathogen *Candida albicans*: biofilms, genome plasticity and more – Christophe D'Enfert, Paris (FR)
 M-14

11.00-11.15 *Pneumocystis jirovecii* antigenic variation uses reassortment of subtelomeric genes' repertoires – Philippe Hauser, Lausanne
 S-45

11.15-11.30 Identification of a core essentialome through genome-wide fitness profiling in phylogenetically diverse *Streptococcus pneumoniae* – Absalom Janssen, Lausanne
 S-46

11.30-11.45 Investigating the genomic context of the *Chlamydia trachomatis* Lymphogranuloma venereum outbreak in Buenos Aires, since 2017 through international collaboration – Karina Andrea Büttner, Buenos Aires
 S-47*

11.45-12.00 A reference-free consensus calling bioinformatic workflow for amplicon sequencing using Nanopore Rapid Barcoding Kit – Loïc Borcard, Bern
 S-48

* Student presentation

10.30-12.00

SESSION 15 **HOST-MICROBE INTERACTION** AUGUSTE TISSOT
 Chairs: Pamela Schnupf, Paris (FR); Thierry Soldati, Geneva

- 10.30-11.00** **Characterization of the unique life-cycle and niche adaptations of the gut commensal SFB** – Pamela Schnupf, Paris (FR)
M-15
- 11.00-11.15** **Type 1 pilated uropathogenic *Escherichia coli* hijack the host immune response by binding to CD14** – Kathrin Tomasek, Lausanne
S-49
- 11.15-11.30** **“Stubborn” bacterial variants hooked on host cell phospholipid degradation** – Nicole Thürkauf, Basel
S-50
- 11.30-11.45** **Lymph node dendritic cells harbor inducible replication competent HIV despite years of suppressive ART** – Riddhima Banga, Lausanne
S-51
- 11.45-12.00** **Spatial and temporal patterns in the population genetic structure of *Melolontha melolontha* are not reflected in those of its fungal pathogens** – Chiara Pedrazzini, Zurich
S-52*

SESSION 16 **SYNTHETIC BIOLOGY** MATHIAS MAYOR
 Chairs: Yolanda Schaerli, Lausanne; Jörg Jores, Bern

- 10.30-11.00** **Engineering a symbiont as a biosensor for the honey bee gut environment** – Yolanda Schaerli, Lausanne
M-16
- 11.00-11.15** **Engineering phagemid-based intercellular communication for distributed computing in *Escherichia coli* consortium** – Hadiastri Kusumawardhani, Lausanne
S-53
- 11.15-11.30** **Determination of universally essential *Staphylococcus aureus* genes by CRISPRi-Seq** – Maria Vittoria Mazzuoli, Lausanne
S-54
- 11.30-11.45** **Prepare for landing: use of versatile double site-specific recombination systems to stably insert foreign DNA sequences in the chromosome of *Mycoplasma ferriuruminatoris*** – Jana Inäbnit, Bern
S-55*
- 11.45-12.00** **Engineering of highly active multifunctional proline-rich antimicrobial peptide conjugates** – Liz Armas Egas, Zurich
S-56*

* Student presentation

12.05-12.45

ELEVATOR PITCH SESSION II *(list on page xxx)* CÉSAR ROUX
 Chairs: Alix Coste, Lausanne; Gilbert Greub, Lausanne

- 12.05-12.10** Introduction
- 12.10-12.25** First round (15 x 1mn = 1 slide/author)
- 12.25-12.45** Second round (5 x 4mn -3mn discussion+1mn question = 4 slides/author)

12.45-14.00 Lunch Break / Poster walk / Exhibition EXHIBITION
POSTERWALK ODD NUMBERS

14.00-15.30

SESSION 17 **AUTOMATION AND DIGILIZATION IN DIAGNOSTIC** CÉSAR ROUX
 Chairs: Antony Croxatto, Neuchâtel; tbd

- 14.00-14.30** **AI in bacteriology: from growth detection to antibiotic susceptibility testing** – Damien Jacot, Lausanne
M-17
- 14.30-14.45** **Direct inoculation of MBT Sepsityper® blood culture pellets in Vitek2 system and early automated imaging of disk diffusion tests for Gram negative bacteria** – Florian Tagini, Lausanne
S-57
- 14.45-15.00** **Optical trapping of bacteria for ultrafast bacteriophage lysis detection at the single-cell level** – Nicolas Villa, Lausanne
S-58*/P-149*
- 15.00-15.15** **Evaluation of the 2 mL MWE Σ Transwab® Amies liquid specimen collection set for bacterial culture and Gram stain** – Olivier Dubuis, Allschwil
S-59
- 15.15-15.30** **Ensuring Safety and Quality for Pandemic Response: The Bio-Preparedness Biobank** – Aline Dousse, Bern
S-60

* Student presentation

14.00-15.30

SESSION 18 **EVOLUTION** ALEXANDRE YERSIN
 Chairs : Isabella Eckerle, Geneva ; Trestan Pillonel, Lausanne

14.00-14.30 Adaptation and immune escape of SARS-CoV-2 – Richard Neher, Basel
 M-18

14.30-14.45 Evolution of the highly diverse repertoire of type III secretion system effectors in the Chlamydiae phylum – Trestan Pillonel, Lausanne
 S-61

14.45-15.00 Bioconvection in Lake Cadagno: the power of microorganisms – Nicola Storelli, Manno
 S-62

15.00-15.15 Gene transfer agents in *Paracoccus* species – Camille Tinguely, Neuchâtel
 S-63*

15.15-15.30 Comparative Genomics of *Cronobacter sakazakii* strains from a Powdered Infant Formula Plant reveals evolving Populations – Marc Stevens, Zurich
 S-64

SESSION 19 **BIOTIC INTERACTIONS** AUGUSTE TISSOT
 Chairs : Sara Mitri, Lausanne ; Jürg Enkerli, Zürich

14.00-14.30 Exudate-microbiome interactions on Maize roots – Klaus Schläppi, Basel
 M-19

14.30-14.45 Fighting aspergillosis using biocontrol bacteria – Niki Ubags, Lausanne
 S-65

14.45-15.00 Adaptations of pathogens in polymicrobial infections in pediatric cystic fibrosis patients – Lukas Schwyter, Zurich
 S-66*

15.00-15.15 Virulent Salmonella phages can overcome phenotypic resistance conferred by O-antigen phase variation in the gut – Anouk Bertola, Basel
 S-67*

15.15-15.30 Modeling resource competition in bacterial co-cultures – Isaline Guex, Lausanne
 S-68*

* Student presentation

14.00-15.30

SESSION 20 **RESISTANCE TO ANTIMICROBIALS** MATHIAS MAYOR
 Chairs : Coralie Fumeaux, Lausanne ; Andrea Endimiani, Bern

14.00-14.30 Ecology and evolution of multidrug-resistant *Mycobacterium tuberculosis* – Sebastien Gagneux, Allschwil
 M-20

14.30-14.45 Convergence of hypervirulence and carbapenemase-mediated resistance in *Klebsiella pneumoniae* in Switzerland – Diego O. Andrey, Geneva
 S-69

14.45-15.00 Characterization of broad host range IncC plasmid bearing multiple carbapenemases: KPC-2, NDM-1, and VIM-24 – Roberto Sierra, Geneva
 S-70

15.00-15.15 *Escherichia ruysiae* may serve as reservoir of antibiotic resistance genes across multiple settings and regions – Edgar Campos-Madueno, Bern
 S-71*

15.15-15.30 Development of an artificial activation system for studying zinc-finger transcriptional factors in *Candida auris* – Jizhou Li, Lausanne
 S-72

15.30-16.00 Coffee break / Poster viewing / Exhibition EXHIBITION

16.00-16.15 POSTER AWARDS CÉSAR ROUX
 Chairs : Jacques Schrenzel, Geneva ; Pilar Junier, Neuchâtel

Poster Awards

16.15-17.00

KEYNOTE 3 CÉSAR ROUX
 Chairs : Cara Magnabosco, Zurich ; Hubert Hilbi, Zurich

K-03 **Into the post-meta'omics era of uncultivated microbes: Integrating omics and microscopy for ecophysiological studies**
 Alex Probst, Essen (DE)

17.00 END OF THE SSM ANNUAL MEETING 2023

* Student presentation

WEDNESDAY, AUGUST 30, 2023 – 13.30-14.15

ELEVATOR PITCH SESSION I

CÉSAR ROUX

Chairs : Alix Coste, Lausanne; Gilbert Greub, Lausanne

- 13.30-13.35** Introduction
- 13.35-13.50** First round (15 x 1mn = 1 slide/author)
- 13.50-14.15** Second round (5 x 4mn -3mn discussion+1mn question = 4 slides/author)
- EP-01/P-018 Asymmetric expression of meiotic genes imposes distinct selective pressures on mating partners – Celsio Martins, Lausanne
- EP-02/P-019 Gut microbiomes of agropastoral children from the Somali Regional State of Ethiopia show a unique bacterial composition reflecting their dietary habits – Simon Yersin, Lausanne
- EP-03/P-020 A bipartite and a tripartite glycosyltransferase system controls site-specific flagellin O-glycosylation in *Shewanella oneidensis* MR-1 – Jovelyn Unay, Geneva
- EP-04/P-021 The GENeva PHage (GENPH) collection to understand pre-adaptation to *K. pneumoniae* high-risk clones – Roberto Sierra, Geneva
- EP-05/P-022 Implementation and validation of a Monkeypox virus real-time PCR on an in-house automated clinical microbiology molecular diagnostic platform for rapid, sensitive and specific syndromic testing in response to the Monkeypox 2022 Outbreak – Onya Opota, Lausanne
- EP-06/P-023 Comparison of disk diffusion, E-test, and broth microdilution methods for testing in-vitro activity of cefiderocol against carbapenem-resistant *Acinetobacter baumannii* – Stefano Mancini, Zurich
- EP-07/P-024 How plant immunity shapes the coexistence of pathogenic and commensal strains during early plant infection – Julien Luneau, Lausanne
- EP-08/P-025 profiling for pathogen detection in routine clinical microbiology diagnostic – Sedreh Nassimia, Lausanne
- EP-09/P-026 Comparative analysis of ribosomal and functional genes among *Legionella* species – Marco Gabrielli, Zurich

- EP-10*/P-027* Steering emergence of virulence-compromised *Escherichia coli* with bacteriophages – Louise Larsson, Zurich
- EP-11/P-028 Tagging the natural transformation machinery of *Legionella pneumophila* – Stefanie Holz, Zurich
- EP-12/P-029 *Chlamydia vaughanii*: a novel chlamydia isolated from a tropical fish – Carole Kebbi Beghdadi, Lausanne
- EP-13/P-030 Mechanisms of predatory bacterium *Bdellovibrio bacteriovorus* to escape the surrounding bacterial prey cell remnants – Simona Huwiler, Zurich
- EP-14*/P-031* Peptides released by *Klebsiella pneumoniae* are taken up by *Streptococcus pneumoniae*, causing changes in pneumococcal gene expression and phenotypes – Janine Lux, Bern

* Student presentation

THURSDAY AUGUST 31, 2023 – 12.05-12.45

ELEVATOR PITCH SESSION II

CÉSAR ROUX

Chairs: Alix Coste, Lausanne; Gilbert Greub, Lausanne

- 12.05-12.10** Introduction
- 12.10-12.25** First round (15 x 1mn = 1 slide/author)
- 12.25-12.45** Second round (5 x 4mn -3mn discussion+1mn question = 4 slides/author)
- EP-15/P-032 Synthetic Nanobody-based capture assay for rapid detection of Staphylococcus aureus infections – Arpita Sahoo, Zurich
- EP-16/P-033 Evaluation of next generation sequencing for the detection of first-line drug resistance of Mycobacterium tuberculosis – Fiona Kälin, Zurich
- EP-17/P-034 Genome-resolved metatranscriptomics investigates the influence of carbon source complexity on microbial activity of aerobic granular sludge – Saini Jaspreet, Lausanne
- EP-18/P-035 Laboratory diagnosis of imported pulmonary Histoplasmosis in an immunocompetent patient in a Swiss hospital – Claudine Fournier, Fribourg
- EP-19*/P-036* Divergence of the intrinsically disordered RNase E C-terminal extension and implications for RNA degradosome composition – Sandra Geslain, Geneva
- EP-20/P-037 Tick-Borne Encephalitis Virus Vaccines Elicit NS1-Specific Antibody Responses in Vaccinated Individuals – Rahel Ackermann-Gäumann, Neuchâtel
- EP-21*/P-038* Interactions of the passenger domain of the autotransporter CfaA of Baronella with antibodies – Aurora Maria Dericci, Basel
- EP-22*/P-039* Production of tailor-made bacteriophages for the treatment of MDR bacterial infections using a synthetic genomics pipeline – Jeremy Cherbuin, Bern
- EP-23/P-040 Clinical performances of two pan-Tropheryma PCRs for the detection of new Tropheryma species and description of a clinical case – Florian Tagini, Lausanne
- EP-24*/P-041* Infectious pestivirus clones to study endoribonucleases as IFN antagonist – Sara Ezzat, Bern

- EP-25*/P-042* A flexible high-throughput cultivation protocol to assess the response of individuals' gut microbiota to diet-, drug-, and host-related factors – Janina Zünd, Zurich
- EP-26/P-043 Evaluation of a new point-of-care molecular test for the detection of respiratory viruses – Results from a prospective study – Riccarda Capaul, Chur
- EP-27*/P-044* Single cell heterogeneity in oxidative stress response influences activation of the Integrative and Conjugative Element ICEclc in Pseudomonas – Anthony Convers, Lausanne
- EP-28/P-045 Niche Availability Determines Inoculant Persistence in Synthetic Soil Microbiomes – Philip Gwyther, Lausanne
- EP-29/P-046 To each his own – targeted proteomics as a tool to unveil distinct physiological states of Staphylococcus aureus and Pseudomonas aeruginosa in human tissues – Minia Antelo, Basel

* Student presentation



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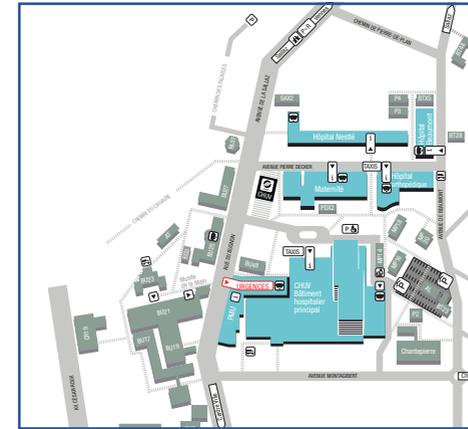
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Location



Arrival

- By car Exit motorway « Lausanne-Vennes / Hôpitaux »
Take the « Route de Berne » at the traffic lights
Follow the CHUV boarding & « P-CHUV » for parking
The auditoire is at the entrance on your left, at the exit of the parking
- By metro (M2) From Lausanne station in direction of Croisettes / Sallaz
Exit at « CHUV » station
The CHUV is on your left. The auditoire will be boarded accordingly.

Venue

Lausanne University Hospital CHUV
Rue du Bugnon 46, 1011 Lausanne
www.chuv.ch

Meeting rooms : auditoires César Roux, Alexandre Yersin, Auguste Tissot, Mathias Mayor

Gala Dinner

On Wednesday August 30, 2023 at the Olympic Museum,
Quai d'Ouchy 1, 1006 Lausanne



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