



SWISS SOCIETY FOR MICROBIOLOGY

Annual congress 2019

University of Zurich
Irchel Campus, Zurich

September 3-4, 2019



**Universität
Zürich** ^{UZH}

PROGRAM

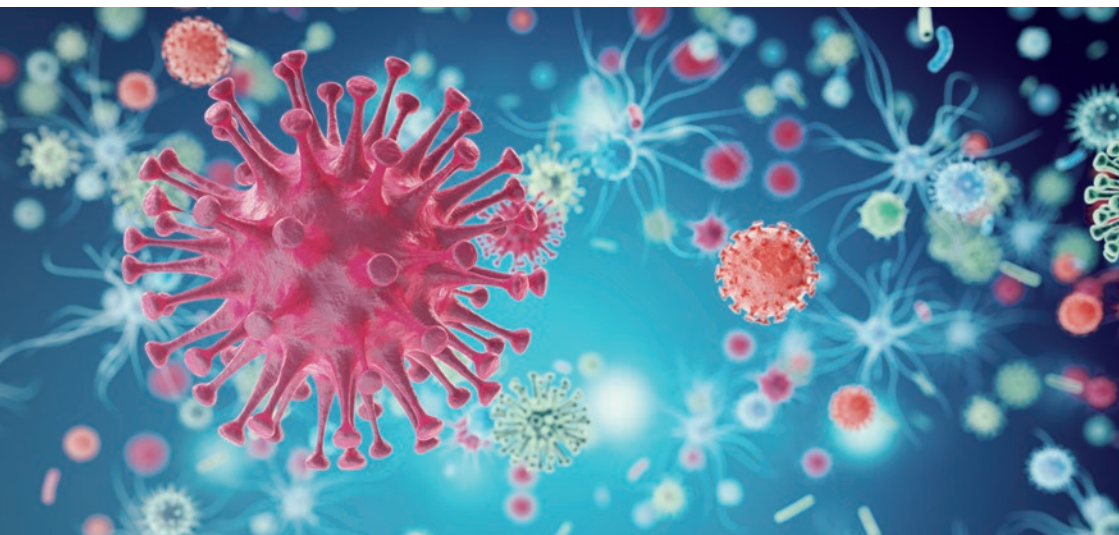


Universität Zürich, Manfred Richter



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Congress organization

**Prof. Dr. Hubert Hilbi, Institute of Medical Microbiology,
University of Zurich**

SSM annual meeting 2019 chair

Dr. Peter Keller, Institute for Infectious Diseases, University of Bern

SSM annual meeting 2019 co-chair

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

President SSM-SGM 2019-2021

Scientific committee

Clinical Microbiology

Jacques Schrenzel (GE), Laurent Poirel (FR), Peter Keller (BE)

Environmental Microbiology

Pilar Junier (NE), David Johnson (ZH)

Prokaryotic Biology

Hubert Hilbi (ZH), William Kelley (GE)

Mycology

Salomé Leibundgut-Landmann (ZH), Alix Coste (VD)

Virology

Silke Stertz (ZH), Cornel Fraefel (ZH), Volker Thiel (BE)

Lay Communication

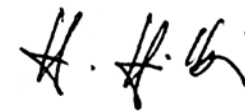
Karl Perron (GE), Massimo Caine (GE)

Dear colleagues,

On behalf of the scientific committee, it is my great pleasure to welcome you to Zurich for the annual congress of the Swiss Society for Microbiology on September 3rd and 4th, 2019. The congress will take place at the University of Zurich Irchel campus, located within the city boundaries.

I am happy to announce an exciting scientific program comprising five keynote lectures delivered by leaders in their fields and a total of 25 parallel sessions covering hot topics from the different sections of the SSM – Clinical Microbiology, Environmental Microbiology, Prokaryotic Biology, Mycology and Virology. In addition to the authoritative talks given by invited speakers, a number of oral presentations will be selected from the submitted abstracts, and ample time will be allowed for stimulating poster sessions.

At the congress, you will not only be exposed to great science, but also have the opportunity to network with colleagues, find your next job, and enjoy a wheat beer with friends. The conference dinner will take place right by the river Limmat. I am looking forward to an inspiring meeting and hope that many of you will join the 2019 congress in Zurich!



Prof. Dr. Hubert Hilbi
Chair, SSM annual congress 2019

Venue

University of Zurich, Irchel Campus
Winterthurerstrasse 190, 8057 Zurich

Registration

online on www.meeting-com.ch/Conferences & Meetings
or to the Congress Office Management as below

Congress office management

Meeting.com Sàrl Congress Organisation
Rue des Pâquis 1 • PO box 100
CH-1033 Cheseaux-sur-Lausanne
T +41 (0)21 312 92 61 • F +41 (0)21 312 92 63
info@meeting-com.ch



Submission of abstracts

online on www.ssm2019.exordo.com
handled by the Congress Office Management. All information or requirements
at the above-mentioned address

Credits

FAMH in Microbiology
Swiss Society for Infectious Diseases
Animal Experimentation

12 credits (6/day)
8 credits (4/day)
1 day continuing education

University of Zurich
Winterthurerstrasse 190
8057 Zurich
Hörsäle Irchel Y03

Tram Nr 10 or Nr 14 from Zurich main station



08.00	Registration & welcome	FOYER
08.55	Welcome word Hubert Hilbi, Zurich ; Pilar Junier, Neuchâtel	HÖRSAAL 04G 30
09.00-09.30	Keynote 1 Adaptive bacterial genome and methylome plasticity in <i>Helicobacter pylori</i> infection Sebastian Suerbaum, Munich (DE)	HÖRSAAL 04G 30
09.30-10.00	Keynote 2 Structural and molecular biology of bacterial type IV secretion systems Gabriel Waksman, London (UK)	HÖRSAAL 04G 30
10.00-10.30	Coffee break	EXHIBITION
10.30-12.00		
Session 1	Molecular panels Laurent Kaiser, Geneva ; Livia Berlinger, Lucerne	CM – HÖRSAAL 04G 30
Session 2	Synthetic microbial ecology Rolf Kümmerli, Zurich ; Sara Mitri, Lausanne	EM – HÖRSAAL 24G 45
Session 3	Secretion systems and nanomachines Andrea Dessen, Grenoble ; Martin Pilhofer, Zurich	PB – HÖRSAAL 24G 55
Session 4	Fungal players in ecosystems Matthew Fischer, London (UK) ; Tom Crowther, Zurich	MY – HÖRSAAL 03G 85
Session 5	Challenges in clinical virology Isabella Eckerle, Geneva ; Michael Huber, Zurich	VI – HÖRSAAL 03G 95
12.15-13.15	Exclusive Symposium Euromed Swiss Sepsis: beyond conventional tools Birgit Willinger, Vienna (AT) ; Adrian Egli, Basel	HÖRSAAL 04G 30
		
12.45-14.00	Lunch break & Posters (even numbers)	EXHIBITION & POSTERS

14.00-15.30		
Session 6	Microbiota and infection Etienne Ruppé, Paris (FR) ; Stéphane Emonet, Sion ; Vladimir Lazarevic, Sion	CM – HÖRSAAL 04G 30
Session 7	Microbiology of the natural environment Jakob Pernthaler, Zurich ; Mark Lever, Zurich	EM – HÖRSAAL 24G 45
Session 8	Heterogeneity and bacterial persistence Leo Eberl, Zurich ; Nicolas Personnic, Zurich	PB – HÖRSAAL 24G 55
Session 9	Plant fungal pathogens and symbionts Bruce McDonald, Zurich ; Marcel van der Heijden, Zurich	MY – HÖRSAAL 03G 85
Session 10	Emerging viral respiratory infections Martin Schwemmle, Freiburg (DE) ; Ronald Dijkman, Bern	VI – HÖRSAAL 03G 95
15.30-16.00	Coffee break	EXHIBITION
16.00-17.30		
Session 11	Antibiotic resistance Philippe Glaser, Paris (FR) ; Peter Keller, Bern	CM – HÖRSAAL 04G 30
Session 12	Engineering & control of microbial communities Robbert Kleerebezem, Delft (NL) ; Kathrin Fenner, Dübendorf	EM – HÖRSAAL 24G 45
Session 13	Amoebae-resistant pathogens (LS2) Carmen Buchrieser, Paris (FR) ; Thierry Soldati, Geneva	PB – HÖRSAAL 24G 55
Session 14	Fungal commensalism in the mammalian host Ilse Jacobsen, Jena (DE) ; Martin Glatz, Zurich	MY – HÖRSAAL 03G 85
Session 15	Virus-host interactions Urs Greber, Zurich ; Ben Hale, Zurich	VI – HÖRSAAL 03G 95
17.45-18.45	General assembly	HÖRSAAL 04G 30
18.30	Aperitif – Irchel Campus	EXHIBITION & POSTERS
19.30	Conference dinner – Zunfthaus zur Safran Limmatquai 54, 8001 Zurich	

08.00	Registration & welcome	FOYER
09.00-09.30	Keynote 3 Next generation sequencing: first diagnostic one-stop shop in personalised clinical microbiology John Rossen, Groningen (NL)	HÖRSAAL 04G 30
09.30-10.00	Keynote 4 Critical role for candidalysin in <i>Candida</i> infections and immune activation Julian Naglik, London (UK)	HÖRSAAL 04G 30
10.00-10.30	Coffee break	EXHIBITION
10.30-12.00		
Session 16	Pathogen virulence and host susceptibility Marien de Jonge, Nijmegen (NL); Stefano Leo, Geneva	CM – HÖRSAAL 04G 30
Session 17	Host-associated microbiomes Geneviève Héry-Arnaud, Brest (FR); Philipp Engel, Lausanne	EM – HÖRSAAL 24G 45
Session 18	Evolution of bacterial pathogens Roland Brosch, Paris (FR); Patricia Bordes, Toulouse (FR)	PB – HÖRSAAL 24G 55
Session 19	New developments on CRISPR/Cas biology and applications Geraldine Butler, Dublin (IE); Martin Jinek, Zurich	MY – HÖRSAAL 03G 85
Session 20	Viral-co-infections Claudia Bachofen, Zurich; Mirco Schmolke, Geneva	VI – HÖRSAAL 03G 95
12.15-13.15	Exclusive Symposium BD Clinics, epidemiology and diagnostic of sepsis Thierry Calandra, Lausanne; Oliver Nolte, St. Gallen	HÖRSAAL 04G 30 
12.45-14.00	Lunch break & Posters (odd numbers)	EXHIBITION & POSTERS

14.00-15.30		
Session 21	New diagnostic methods Yannick Charretier, Geneva; Adriana Renzoni, Geneva	CM – HÖRSAAL 04G 30
Session 22	Antibiotic resistance & HGT in natural environments Jan Roelof van der Meer, Lausanne; Helmut Bürgmann, Kastanienbaum	EM – HÖRSAAL 24G 45
Session 23	Bacterial natural products and metabolites Pierre Stallforth, Jena (DE); Jörn Piel, Zurich	PB – HÖRSAAL 24G 55
Session 24	Emerging fungal pathogens Silke Schelenz, London (UK); Frédéric Lamothe, Lausanne	MY – HÖRSAAL 03G 85
Session 25	Models and concepts of virus infection Catherine Eichwald, Zurich; Darius Moradpour, Lausanne	VI – HÖRSAAL 03G 95
15.30-16.00	Coffee break	EXHIBITION
16.00-16.30	Poster awards/Lay communication	HÖRSAAL 04G 30
16.30-17.00	Keynote 5 Novel broadly neutralizing inhibitors pave the way for HIV-1 vaccine design Alexandra Trkola, Zurich	HÖRSAAL 04G 30
17.00	End of the meeting	

Technology development
 Microbiota
 Host-microbe interactions
 Environment and ecology
 Emerging pathogens
 Antibiotic resistance

08.00 Registration & welcome FOYER

08.55 Welcome word HÖRSAAL 04G 30
Hubert Hilbi, Zurich; Pilar Junier, Neuchâtel

Chairs: Hubert Hilbi, Zurich; Pilar Junier, Neuchâtel

09.00-09.30

Keynote 1 **Adaptive bacterial genome and methylome plasticity in *Helicobacter pylori* infection** HÖRSAAL 04G 30
Sebastian Suerbaum, Munich (DE)

09.30-10.00

Keynote 2 **Structural and molecular biology of bacterial type IV secretion systems** HÖRSAAL 04G 30
Gabriel Waksman, London (UK)

10.00-10.30 Coffee break EXHIBITION

10.30-12.00

SESSION 1 **Molecular panels** CM – HÖRSAAL 04G 30
Chairs: Alix Coste, Lausanne; Laurent Kaiser, Geneva

10.30-11.00 **The syndrome, the panel and the virus** – Laurent Kaiser, Geneva
M-01

11.00-11.30 **Molecular panels for addressing gastrointestinal infections**
M-02 – Livia Berlinger, Lucerne

11.30-11.45 **Rapid semi-quantitative format PCR for the detection of *Pneumocystis jirovecii* replacing the direct examination**
S-01 – Alix Coste, Lausanne

11.45-12.00 **Discovery of a newly evolved pneumococcal serotype 6F in Switzerland** – Oluwaseun Oyewole, Bern
S-02*

*Student Paper

10.30-12.00

SESSION 2 **Synthetic microbial ecology** EM – HÖRSAAL 24G 45
Chairs: Pilar Junier, Neuchâtel; David Johnson, Dübendorf

10.30-11.00 **Cooperation, competition and strain dynamics in natural *Pseudomonas* communities** – Rolf Kümmerli, Zurich
M-03

11.00-11.30 **Eco-evolutionary dynamics in a four-species synthetic bacterial community** – Sara Mitri, Lausanne
M-04

11.30-11.45 **Ecology and mechanisms of interspecies interactions between *Pseudomonas aeruginosa* and *Staphylococcus aureus***
S-03* – Selina Niggli, Zurich

11.45-12.00 **Jackpot events prevent ecosystem collapse in the face of environmental fluctuations** – Davide Ciccacese, Zurich
S-04

SESSION 3 **Secretion systems and nanomachines** PB – HÖRSAAL 24G 55
Chairs: William Kelley, Geneva; Vikram Panse, Zurich

10.30-11.00 **Structure and assembly of pilotin-dependent and -independent secretins of the type II secretion system**
M-05 – Andrea Dessen, Grenoble (FR)

11.00-11.30 **Multiscale models of bacterial cell-cell interactions**
M-06 – Martin Pilhofer, Zurich

11.30-11.45 **BstA is a novel prophage-encoded defence system that protects bacteria from viral predation** – Nicolas Wenner, Liverpool (UK)
S-05

11.45-12.00 **The art of sugarcoating: *Listeria* teichoic acid glycosylation and its biological roles** – Yang Shen, Zurich
S-06

*Student Paper

10.30-12.00

SESSION 4 **Fungal players in ecosystems** MY – HÖRSAAL 03G 85
Chairs: Dominique Sanglard, Lausanne; Claudio de Virgilio, Fribourg

- 10.30-11.00** **Understanding the fungal dimension of environmental change**
M-07 – Matthew Fisher, London, UK
- 11.00-11.30** **The functional biogeography of fungi at a global scale**
M-08 – Tom Crowther, Zurich
- 11.30-11.40** **Fungicide resistance and tolerance of environmental isolates of the biocontrol yeast *Aureobasidium pullulans***
S-07* – Electine Magoye, Zurich
- 11.40-11.50** **Applying MALDI-TOF MS to explore inter- and intraspecific diversity of aquatic hyphomycetes** – Andreas Bruder, Bellinzona
S-08
- 11.50-12.00** **Omphalotin, lentinulin and dendrothelin: Homologous members of a new family of ribosomally synthesized and post-translationally modified peptides (RiPPs) from fungi**
S-09* – Emmanuel Matabaro, Zurich

SESSION 5 **Challenges in clinical virology** VI – HÖRSAAL 03G 95
Chairs: Irene Abela, Zurich; Verena Kufner, Zurich

- 10.30-11.00** **Diagnostics for (pre- and re-) emerging viruses - are we prepared?** – Isabella Eckerle, Geneva
M-09
- 11.00-11.30** **Using high-throughput metagenomic sequencing to overcome challenges in virus diagnostics** – Michael Huber, Zurich
M-10
- 11.30-11.45** **Viral metagenomics in the clinical realm: lessons learned from a Swiss-wide proficiency test** – Thomas Junier, Lausanne
S-10
- 11.45-12.00** **Comparison of the ePlex RP panel with the fast track diagnostics respiratory pathogens 21 assay for the detection of respiratory viruses** – Andrea Zbinden, Zurich
S-11

* Student Paper

12.15-13.15

Exclusive Symposium – Euromed Swiss HÖRSAAL 04G 30



Sepsis: Beyond conventional tools

Chairs: Jacques Schrenzel, Geneva; Peter Keller, Bern

- 12.15-12.45** **Laboratory diagnosis of candidemia: Culture or non culture based methods – which approach should we choose?**
M-51 – Birgit Willinger, Vienna (AT)
- 12.45-13.15** **Modern sepsis diagnostics** – Adrian Egli, Basel
M-52

12.45-14.00 Lunch break & Posters (even numbers)

EXHIBITION & POSTERS

14.00-15.30

SESSION 6 **Microbiota and infection** CM – HÖRSAAL 04G 30
Chairs: Mathias Schmelcher, Zurich; Jacques Schrenzel, Geneva

- 14.00-14.30** **Clinical metagenomics: Where do we stand?** – Etienne Ruppé, Paris (FR)
M-11
- 14.30-15.00** **Identification of respiratory microbiota markers in ventilator-associated pneumonia**
M-12 – Stéphane Emonet, Sion; Vladimir Lazarevic, Sion
- 15.00-15.15** **Stunting is associated with changes in the fecal bile acid profile of African children** – Pascale Vonaesch, Paris (FR)
S-12
- 15.15-15.30** **Preclinical development of a synergistic peptidoglycan hydrolase cocktail for efficient killing of intracellular and drug resistant *Staphylococcus aureus*** – Christian Röhrig, Zurich
S-13*

* Student Paper

14.00-15.30

SESSION 7 **Microbiology of the natural environment** EM – HÖRSAAL 24G 45
Chairs: Helmut Bürgmann, Pilar Junier, Neuchâtel

- 14.00-14.30** **Stochasticity, variability and the paradox of the freshwater bacterioplankton** – Jakob Pernthaler, Zurich
M-13
- 14.30-15.00** **Bioturbation as a key driver of microbial community structure in marine surface sediment** – Mark Lever, Zurich
M-14
- 15.00-15.15** **A swim-or-stick behavioural switch governs growth of *Caulobacter crescentus* cells on complex polysaccharides** – Glen Dsouza, Zurich
S-14
- 15.15-15.30** **Biodegradation of antibiotics at low non-toxic concentrations through sensitive biomass growth tests** – Birge Ozel Duygan, Lausanne
S-15

SESSION 8 **Heterogeneity and bacterial persistence** PB – HÖRSAAL 24G 55
Chairs: Matthias Peter, Zurich; Carmen Buchrieser, Paris (FR)

- 14.00-14.30** **Bacterial heterogeneity generated by quorum sensing mechanisms** – Leo Eberl, Zurich
M-15
- 14.30-15.00** **Extensive *Legionella* cell-to-cell variations during the intracellular life stage** – Nicolas Personnic, Zurich
M-16
- 15.00-15.15** **Single-cell heterogeneity of macrophages infected with *Mycobacterium tuberculosis*** – Ophélie Rutschmann, Lausanne
S-16*
- 15.15-15.30** **Investigation of the role of toxin-antitoxin systems encoded on *Waddlia chondrophila* cryptic plasmid** – Silvia Ardissonne, Lausanne
S-17

* Student Paper

14.00-15.30

SESSION 9 **Plant fungal pathogens and symbionts** MY – HÖRSAAL 03G 85
Chairs: Saskia Bindschedler, Neuchâtel; Jürg Enkerli, Zurich

- 14.00-14.30** **Population genomics of melanization in the wheat pathogen *Zymoseptoria tritici*** – Bruce McDonald, Zurich
M-17
- 14.30-15.00** **Unlocking the secrets of the microbiome: managing plant and soil microbiomes for plant health and ecosystem functioning** – Marcel van der Heijden, Zurich
M-18
- 15.00-15.15** **A worldwide population sample of wheat powdery mildew provides insight into genome evolution and global diversity** – Alexandros Georgios Sotiropoulos, Zurich
S-18*
- 15.15-15.30** **Protease activity as a mode of antagonism of the yeast *Aureobasidium pullulans* against plant pathogens** – Maria Paula Rueda, Bern
S-19*

SESSION 10 **Emerging viral respiratory infections** VI – HÖRSAAL 03G 95
Chairs: Philip Vkovski, Bern; Annika Hunziker, Zurich

- 14.00-14.30** **Bat influenza viruses spread among bats but are poorly adapted to non-bat species despite a high genetic plasticity** – Martin Schwemmle, Freiburg (DE)
M-19
- 14.30-15.00** **Single cell analysis of influenza A virus infection at the natural site of infection reveals dynamic transcriptional changes leading to ciliated epithelium degeneration and desquamation** – Ronald Dijkman, Bern
M-20
- 15.00-15.15** **Susceptibility of human and camelid airway epithelium to coronaviruses** – Annika Kratzel, Bern
S-20*
- 15.15-15.30** **The role of reticulon proteins in the biogenesis of coronavirus replication complexes** – Silvio Steiner, Bern
S-21*

15.30-16.00 Coffee break

EXHIBITION

* Student Paper

16.00-17.30

SESSION 11 **Antibiotic resistance** **CM – HÖRSAAL 04G 30**
Chairs: Peter Keller, Bern ; Laurent Poirel, Geneva

- 16.00-16.30** **Evolutionary trajectories of carbapenemase producing *Escherichia coli*** – Philippe Glaser, Paris (FR)
M-21
- 16.30-17.00** **Antimicrobial resistance in healthcare, agriculture and the environment: the facts and figures behind the headlines**
M-22
– Peter Keller, Bern
- 17.00-17.15** **Successful control of an outbreak of vancomycin-resistant *Enterococcus faecium* clone ST796 at the University Hospital of Lausanne** – Dominique Blanc, Lausanne
S-22
- 17.15-17.30** **Functional characterization of β -lactamase CTX-M-33, a CTX-M-15 derivative with carbapenemase activity**
S-23*
– Jose-Manuel Ortiz de la Rosa, Fribourg

SESSION 12 **Engineering & control of microbial communities** **EM – HÖRSAAL 24G 45**
Chairs: Christof Holliger, Lausanne; Jan Roelof van der Meer, Lausanne

- 16.00-16.30** **Resource recovery from wastewater: the VFA-platform**
M-23
– Robbert Kleerebezem, Delft (NL)
- 16.30-17.00** **Linking micropollutant biotransformation with microbial community characteristics in activated sludge (and beyond)**
M-24
– Kathrin Fenner, Dübendorf
- 17.00-17.15** **Biological control of *Aspergillus niger* through bacterial oxalotrophy** – Fabio Palmieri, Neuchâtel
S-24*
- 17.15-17.30** **Designing a synthetic medium to study interactions between bacterial species**
S-25
– Rita Di Martino, Lausanne

* Student Paper

16.00-17.30

SESSION 13 **Amoebae-resistant pathogens (LS2)** **PB – HÖRSAAL 24G 55**
Chairs: Gilbert Greub, Lausanne; Jakob Pernthaler, Zurich

- 16.00-16.30** **Legionella-amoeba interactions: Evolution of an environmental to a human pathogen** – Carmen Buchrieser, Paris (FR)
M-25
- 16.30-17.00** **Dictyostelium as a versatile host model to study conserved mechanisms of cell-autonomous immunity to (myco) bacteria infections** – Thierry Soldati, Geneva
M-26
- 17.00-17.15** **“Tragedy” or “Benefit”? – The interaction of the foodborne pathogen *Listeria monocytogenes* and *Acanthamoeba castellanii* reflects both aspects** – Mingzhen Fan, Zurich
S-26*
- 17.15-17.30** **The pleiotropic Legionella transcription factor LvbR links the Lqs and c-di-GMP regulatory networks to control biofilm architecture and virulence** – Ramon Hochstrasser, Zurich
S-27*

SESSION 14 **Fungal commensalism in the mammalian host** **MY – HÖRSAAL 03G 85**
Chairs: Philipp Bosshard, Zurich;
Salomé Leibundgut-Landmann, Zurich

- 16.00-16.30** **“Brothers in arms: Fungal-bacterial interactions can lead to enhanced host cell damage in vitro and in vivo”**
M-27
– Ilse Jacobsen, Jena (DE)
- 16.30-17.00** **The role of *Malassezia* spp. in atopic dermatitis**
M-28
– Martin Glatz, Zurich
- 17.00-17.15** **The severity of atopic dermatitis is increased by exposure of the skin to the commensal yeast *Malassezia*** – Fiorella Ruchti, Zurich
S-28*
- 17.15-17.30** **Into the identification of genetic polymorphisms in *Candida albicans* genome associated with the variability in the interaction of diverse clinical isolates with the host keratinocytes by dual transcriptomics** – Abhilash Kannan, Lausanne
S-29

* Student Paper

SESSION 15	Virus-host interactions	VI – HÖRSAAL 03G 95
	Chairs: Marie Pohl-Puchstein, Zurich ; Idoia Busnadiego, Zurich	
16.00-16.30 M-29	Cell-to-cell variability of virus infection – Urs Greber, Zurich	
16.30-17.00 M-30	Profiling host factor splicing to predict emergence of influenza A viruses with pandemic potential – Ben Hale, Zurich	
17.00-17.15 S-30*	Recognition of open HIV-1 envelope states creates opportunity for broad neutralization – Matthias Gloegl, Zurich	
17.15-17.30 S-31*	Phosphorylation events in early steps of influenza virus infection – Annika Hunziker, Zurich	

* Student Paper

17.45-18.45 General assembly HÖRSAAL 04G 30

18.30 Aperitif – Irchel Campus EXHIBITION & POSTERS

19.30 Conference dinner – Zunfthaus zur Saffran
Limmatquai 54, 8001 Zurich (www.zunfthauszursaffran.ch)



08.00 Registration & welcome FOYER

09.00-09.30

Keynote 3 Chairs: Jacques Schrenzel, Geneva; Peter Keller, Bern HÖRSAAL 04G 30
Next generation sequencing: First diagnostic one-stop shop in personalised clinical microbiology
John Rossen, Groningen (NL)

09.30-10.00

Keynote 4 Chairs: Salomé Leibundgut-Landmann, Zurich; Alix Coste, Lausanne HÖRSAAL 04G 30
Critical role for candidalysin in *Candida* infections and immune activation
Julian Naglik, London (UK)

10.00-10.30 Coffee break EXHIBITION

10.30-12.00

Session 16 **Pathogen virulence and host susceptibility** CM – HÖRSAAL 04G 30
Chairs: Salomé Leibundgut-Landmann, Zurich; Markus Hilty, Bern

10.30-11.00 M-31 **Identification of protective antigens by exploring the natural niche of *Streptococcus pneumoniae***
– Marien de Jonge, Nijmegen (NL)

11.00-11.30 M-32 **The changing faces of *Neisseria meningitidis***
– Stefano Leo, Geneva

11.30-11.45 S-32* **Controlling *Staphylococcus aureus* infection through phage therapy in a model of experimental endocarditis**
– Jonathan Save, Lausanne

11.45-12.00 S-33 **In vivo imaging of *Candida glabrata* invasive infections in mice**
– Sanne Schrevers, Lausanne

* Student Paper

10.30-12.00

Session 17 **Host-associated microbiomes** EM – HÖRSAAL 24G 45
Chairs: Sara Mitri, Lausanne; Rolf Kümmerli, Zurich

- 10.30-11.00** M-33 **The role of the airway microbiome in respiratory diseases: an ecological point of view** – Geneviève Héry-Arnaud, Brest (FR)
- 11.00-11.30** M-34 **Honey bee gut microbiota – a versatile model for studying host-associated microbial communities** – Philipp Engel, Lausanne
- 11.30-11.45** S-34* **Pseudomonas protegens CHA0 transcriptome switches between root- and insect-associated lifestyles** – Maria del Pilar Vesga Aguado, Zurich
- 11.45-12.00** S-35* **Coexistence of related bacteria within the honey bee gut microbiota influenced by host diet** – Silvia Brochet, Lausanne

Session 18 **Evolution of bacterial pathogens** PB – HÖRSAAL 24G 55
Chairs: Martin Loessner, Zurich; Adriana Renzoni, Geneva

- 10.30-11.00** M-35 **The evolution of the tubercle bacilli – a story of efficient host adaptation** – Roland Brosch, Paris (FR)
- 11.00-11.30** M-36 **Tripartite toxin antitoxin chaperone (TAC) system of Mycobacterium tuberculosis** – Patricia Bordes, Toulouse (FR)
- 11.30-11.45** S-36 **The molecular clock of Mycobacterium tuberculosis** – Fabrizio Menardo, Basel
- 11.45-12.00** S-37* **Divergent evolution of Legionella RCC1 repeat effectors defines the range of Ran GTPase cycle targets** – A. Leoni Swart, Zurich

*Student Paper

10.30-12.00

Session 19 **New developments on CRISPR/Cas biology and applications** MY – HÖRSAAL 03G 85
Chairs: Françoise Stutz, Geneva; Markus Künzler, Zurich

- 10.30-11.00** M-37 **Gene editing in Candida species using CRISPR/Cas** – Geraldine Butler, Dublin (IE)
- 11.00-11.30** M-38 **Structural and mechanistic insights into prokaryotic CRISPR-Cas systems** – Martin Jinek, Zurich
- 11.30-11.45** S-38* **Harnessing the CRISPR system for advanced genome editing in the opportunistic human pathogen S. pneumoniae** – Dimitra Synefiaridou, Lausanne
- 11.45-12.00** S-39 **Simple and ubiquitous phage assemblages coexist with its bacterial hosts in the honey bee microbiota** – German Bonilla-Rosso, Lausanne

Session 20 **Viral-co-infections** VI – HÖRSAAL 03G 95
Chairs: Anita Meier, Zurich; Michael Seyffert, Zurich

- 10.30-11.00** M-39 **Analysis of viral communities and their neighbours** – Claudia Bachofen, Zurich
- 11.00-11.30** M-40 **Secondary bacterial infections are fostered by virus-induced qualitative or quantitative dysbiosis** – Mirco Schmolke, Geneva
- 11.30-11.45** S-40 **Reprogramming bacteriophage host range through structure-guided design of chimeric receptor binding proteins** – Samuel Kilcher, Zurich
- 11.45-12.00** S-41 **Two years of viral metagenomics in a tertiary diagnostics unit: Evaluation of the first 71 cases** – Verena Kufner, Zurich; Andreas Plate, Zurich

*Student Paper

12.15-13.15

Exclusive Symposium BD

HÖRSAAL 04G 30



Clinics, epidemiology and diagnostic of sepsis

Chair: Reinhard Zbinden, Zurich

12.15-12.45 Sepsis: Progresses and challenges

M-53

– Thierry Calandra, Lausanne

12.45-13.15 Blood culture diagnostics: Closing the gaps! Which gap?

M-54

– Oliver Nolte, St. Gallen

12.45-14.00 Lunch break & Posters (odd numbers)

EXHIBITION & POSTERS

14.00-15.30

Session 21

New diagnostic methods

CM – HÖRSAAL 04G 30

Chairs: Gilbert Greub, Lausanne; Adrian Egli, Basel

14.00-14.30 Molecular diagnostics of bloodstream infections: beyond PCR

M-41

– Yannick Charretier, Geneva

14.30-15.00 Implementation of a CRISPR-Cas based revolutionary technology as diagnostic tool for viral detection

M-42

– Adriana Renzoni, Geneva

15.00-15.15 Rapid diagnosis of bloodstream infections and antibiotic resistance profiling from positive blood cultures using real-time whole genome sequencing

S-42

– Ferdinando Bonfiglio, Basel

15.15-15.30 Typing of Salmonella isolates by Fourier transform infrared (FTIR) spectroscopy

S-43

– Miriam Cordovana, Bologna (IT)

14.00-15.30

Session 22

Antibiotic resistance & HGT in natural environments

EM – HÖRSAAL 24G 45

Chairs: Rolf Kümmerli, Zurich; David Johnson, Dübendorf

14.00-14.30 Selection of horizontal gene transfer fitness

M-43

– Jan Roelof van der Meer, Lausanne

14.30-15.00 Antibiotic resistance and the water cycle – anthropogenic impact and natural reservoir

M-44

– Helmut Bürgmann, Kastanienbaum

15.00-15.15 Whole genome sequencing of high-risk clones of OXA-48-producing *Klebsiella pneumoniae* from the veterinary setting in Switzerland

S-44*

– Michael Brilhante, Bern

15.15-15.30 Bacterial plasmid transfer affected by fragmented aqueous habitats in porous media

S-45

– Robin Tecon, Zurich

Session 23

Bacterial natural products and metabolites

PB – HÖRSAAL 24G 55

Chairs: Hubert Hilbi, Zurich; Thierry Soldati

14.00-14.30 Natural products from predator-prey interactions

M-45

– Pierre Stallforth, Jena (DE)

14.30-15.00 Identifying and accessing bioactive natural products from uncultivated bacteria

M-46

– Jörn Piel, Zurich

15.00-15.15 Sweet mycoplasmas: characterization of the polysaccharide pathway of *Mycoplasma mycoides* subsp. *capri* (Mmc) using synthetic genomics

S-46

– Fabien Labrousseau, Bern

15.15-15.30 Short chain fatty acids destabilize *Salmonella enterica* virulent subpopulation development

S-47

– Alyson Hockenberry, Tuscon (US)

* Student Paper

14.00-15.30

Session 24 **Emerging fungal pathogens** MY – HÖRSAAL 03G 85
Chairs : Alix Coste, Lausanne ; Frédéric Lamoth, Lausanne

14.00-14.30 **Global emergence of *Candida auris*: Learning points from outbreaks** – Silke Schelenz, London (UK)
M-47

14.30-15.00 **The changing epidemiology of invasive mold infections**
– Frédéric Lamoth, Lausanne
M-48

15.00-15.15 **Antifungal resistance in Switzerland: A retrospective study from 2008-2017 of the five most common *Candida* species**
– Chantal Quiblier, Zurich
S-48

15.15-15.30 **A new mutation in the SQLE gene of trichophyton mentagrophytes associated with terbinafine resistance in patients with disseminated tinea corporis** – Lionel Fontao, Geneva
S-49

Session 25 **Models and concepts of virus infection** VI – HÖRSAAL 03G 95
Chairs : Stephanie Pfänder, Bern ; Melle Holwerda, Bern

14.00-14.30 **Identification of dominant-negative rotavirus VP2 point mutation disrupting NSP5 related replication intermediates**
– Catherine Eichwald, Zurich
M-49

14.30-15.00 **Advances and current challenges in viral hepatitis**
– Darius Moradpour, Lausanne
M-50

15.00-15.15 **Nuclear HSV-1 replication compartments are liquid-liquid phase-separated condensates** – Michael Seyffert, Zurich
S-50

15.15-15.30 **Genome-wide engineering of large DNA viruses using synthetic biology** – Sanjay Vashee, Rockville (US)
S-51

15.30-16.00 **Coffee break**

EXHIBITION

16.00-16.30 **Poster awards/Lay communication** HÖRSAAL 04G 30

16.30-17.00

Keynote 5 Chairs : Silke Stertz, Zurich ; Volker Thiel, Bern HÖRSAAL 04G 30
Novel broadly neutralizing inhibitors pave the way for HIV-1 vaccine design
Alexandra Trkola, Zurich

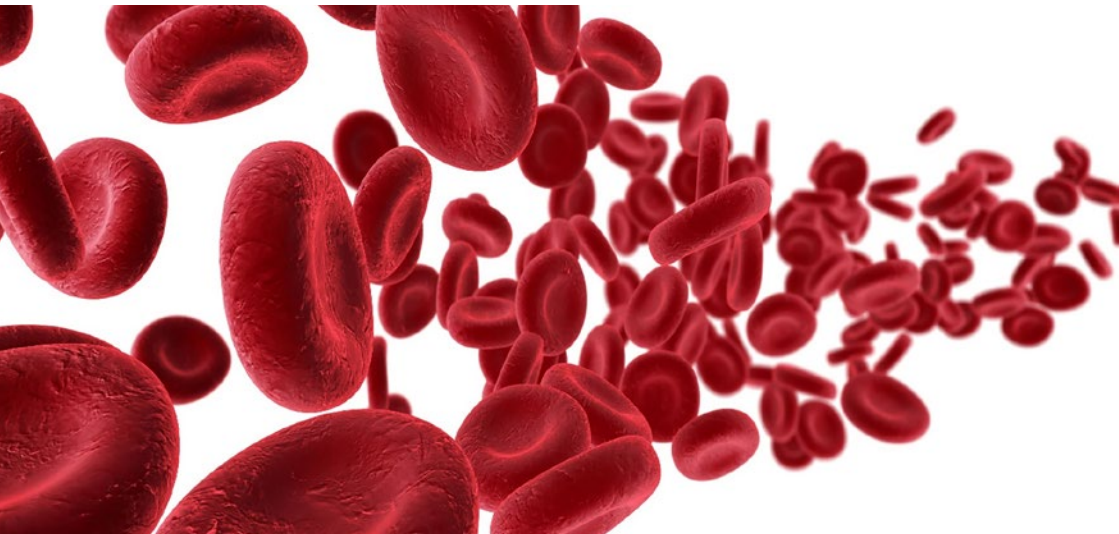
17.00 **End of the meeting**

SEPSIS SYMPOSIUM

WHEN TIME MATTERS

Tuesday, September 3rd, 2019 | 12.15-13.15

HÖRSAAL 04G 30 | University of Zürich | Campus Irchel, Zürich



Molecular and NMR-based diagnosis of candidemia and discussion on the clinical impact.

Prof. Dr. Birgit Willinger, Austria

Large and ambitious nation-wide project trying to derive digital biomarkers for diagnosing/monitoring sepsis.

Prof. Dr. Adrian Egli, Switzerland

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**Bienvenue à Swiss MedLab,
du 23 au 25 juin 2020 à Berne**



Prof. Dr. med. Wolfgang Korte
Präsident der SULM und des OK
Président de l'USML et du comité d'organisation

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Dienstag, 23. Juni | Mardi 23 juin

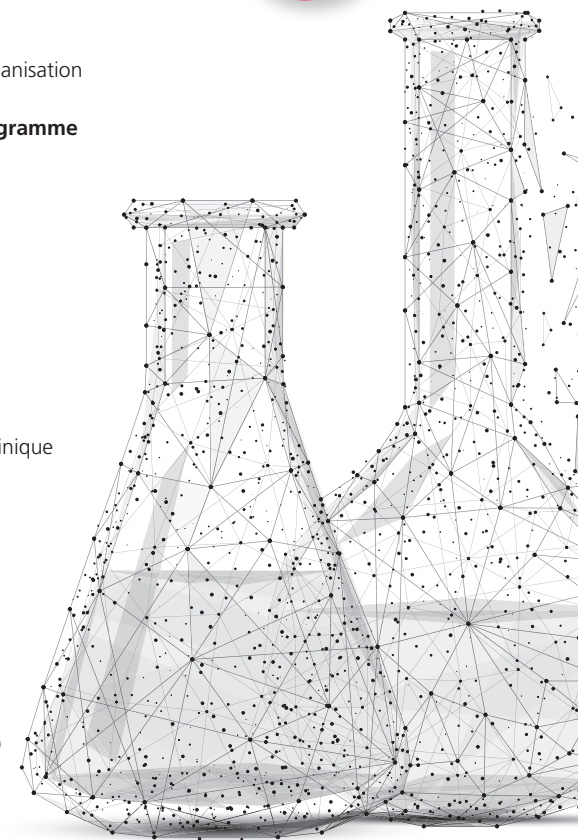
Big Data and Artificial Intelligence
Pre- & Postanalytics
Liquid Biopsy & Companion Diagnostics
Verwendung kardialer Marker im klinischen Alltag |
L'utilisation de marqueurs cardiaques en pratique clinique

Mittwoch, 24. Juni | Mercredi 24 juin

Blutkrankheiten | Maladies du sang
Mass Spectrometry - What, When, Why
PCR based Panels in Microbiology and Immunology

Donnerstag, 25. Juni | Jeudi 25 juin

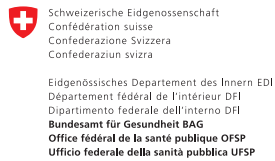
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Genomic Medicine from Youth to Age (NGS, NIPT...)
DNA-Passport



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