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"Metabolism & Signaling in the Life Sciences"

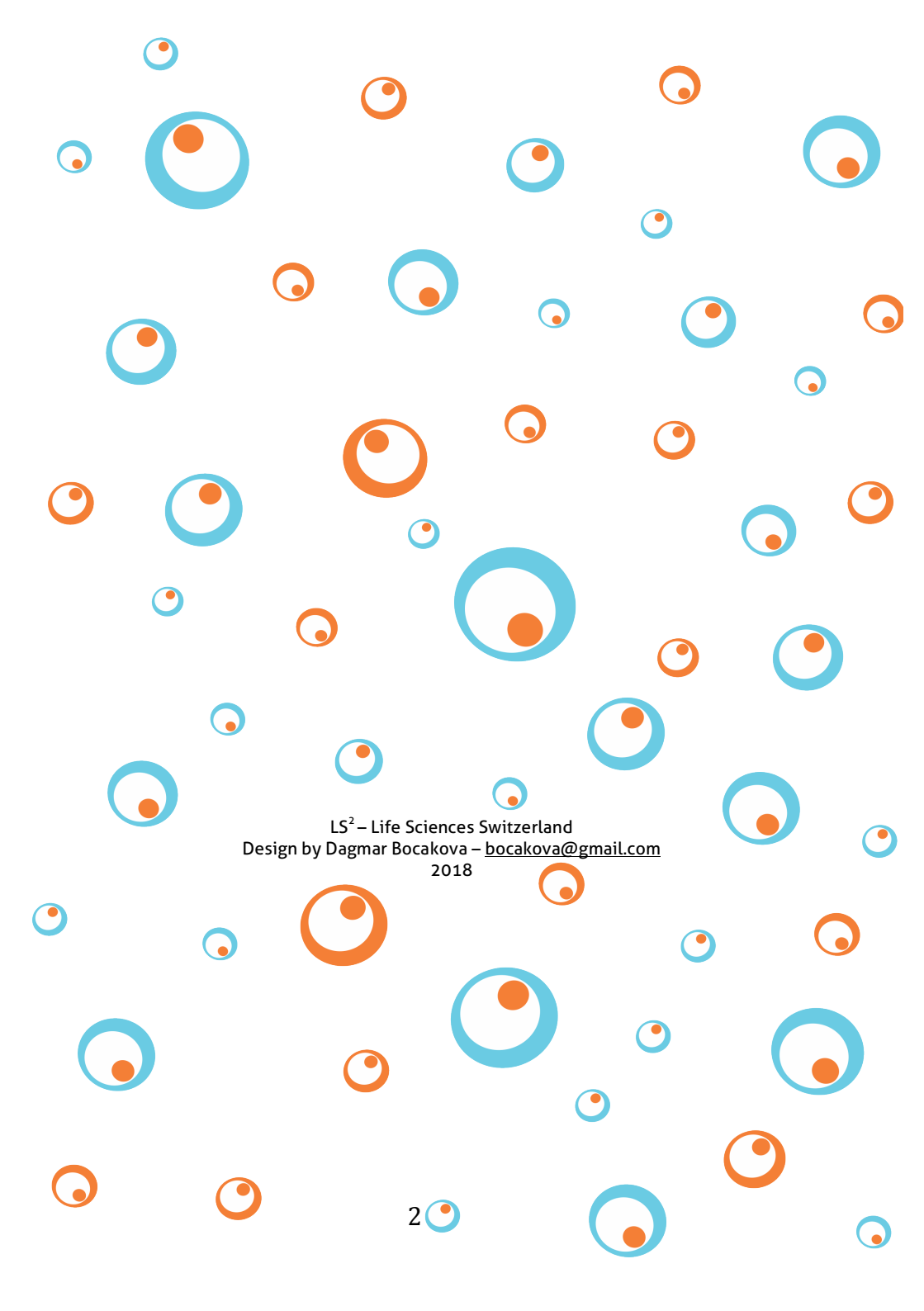
LS² Annual Meeting 2018

12-13 February



Meeting
Booklet

LS² 
Life Sciences Switzerland



LS² – Life Sciences Switzerland
Design by Dagmar Bocakova – bocakova@gmail.com
2018

WELCOME ADDRESS

Dear colleagues and friends

It is our pleasure to invite you to the **LS² Annual Meeting 2018**, held on the **12th and 13th of February, 2018 at the Amphipôle and Amphimax of the University of Lausanne**. The LS² Annual Meeting brings together scientists from all nations and backgrounds to explore the large spectrum united under the umbrella of Life Sciences.

The LS² Annual Meeting 2018 meeting focusses on metabolism and signaling, honoring especially the 2016 Nobel prize for Autophagy with plenary lectures and a symposium on this topic.

Discover the latest, most exciting findings in the field, from Molecular and Cellular Biosciences to Proteomics, Systems Biology, or Physiology, Bioinformatics and more, presented by around 30 invited speakers and 40 speakers selected from abstracts in one of the 10 scientific symposia during the meeting.

We also offer career development sessions: The two Lunch Career Roundtables on "Non-Academic Careers" and "Careers Out of the Box" feature in total 11 speakers from various Life Sciences fields outside of the academic track on both days. In contrast, scientists who are at the stage to start their own research group should join the "PIs of Tomorrow" session, where the best 6 out of over 80 Postdoc applicants will present their research to a jury of professors.

On the first evening, we all invite you to join the Science Crowdfunding event – featuring the incredible LSD research story of Robert Carhart-Harris and David Nutt, and more successful projects from the first Swiss Science Crowdfunding channel, science.wemakeit.com. Afterwards, join us for the poster session with 150 posters, combined with a large industry exhibition and apéro. For the 2018 edition, five poster prizes will be awarded!

Moreover, we're very happy to offer a public Science Policy panel discussion on CRISPR/Cas9 on the second day (sponsored as a "FEBS Science & Society" event), with invited speakers from science, ethics, patenting law, and science journalism.

As every year, we're also very much looking forward to the laureate talks of the winners of the Friedrich-Miescher Award and the Lelio Orci Award.

We are extremely grateful to all our sponsors and exhibitors of the 2018 edition (see page 8), who contributed to making this big event possible, and cordially invite you to visit their latest advances & products at the booths in between the sessions.

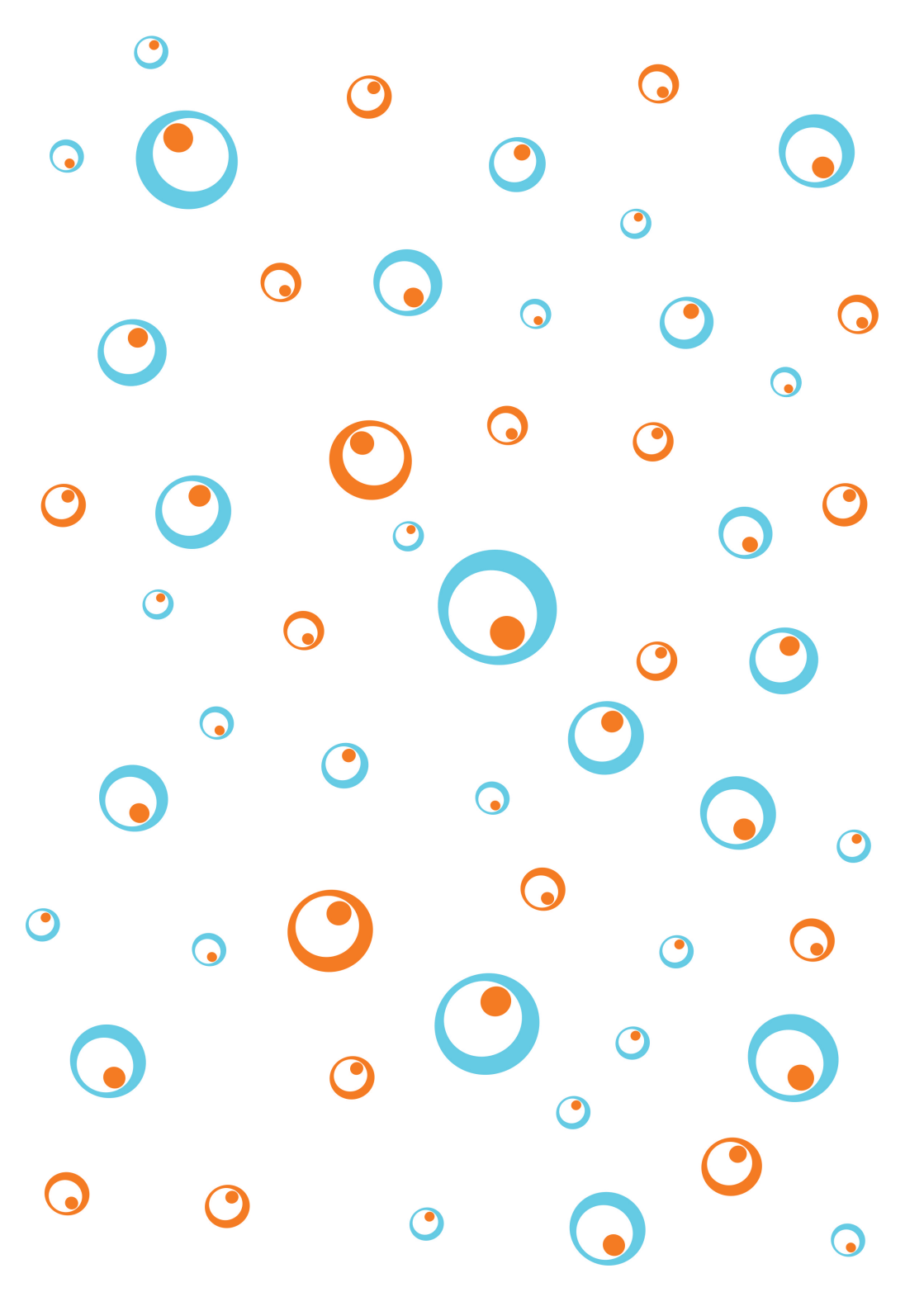
We are looking forward to this diverse & exciting program and wish you an enjoyable time!

With kind regards



Christian Münz
(University of Zurich, Chairman of the
LS² Annual Meeting 2018)





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CONTENT

3	WELCOME ADDRESS
7	CONTENT
8	THANKS TO OUR SPONSORS AND EXHIBITORS
10	ORGANISING COMMITTEE
12	FLOOR PLAN / LIST OF EXHIBITORS
14	PROGRAM OVERVIEW
19	DETAILED PROGRAM DAY ONE
32	DETAILED PROGRAM DAY TWO
44	POSTERS
70	UPCOMING LS ² EVENTS
71	LS ² ANNUAL MEETING 2019 IN ZURICH

ACCREDITATION FOR CONTINUOUS EDUCATION

A request has been submitted to accredit the entire LS² Annual Meeting 2018 for **1.5 days of continuous education** in the field of animal experimentation by RESAL/SGV. Unfortunately, the request was still ongoing until the meeting booklet printing deadline (January 18, 2018). Participants will be informed about the outcome by mail after the meeting.

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LS² - SECTIONS

Molecular and Cellular Biosciences (MCB) / Physiology / Proteomics / Autophagy / Systems Biology / Cardiovascular Biology

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Swiss Laboratory Animal Science Association (SGV/RESAL)

Swiss Society for Neuroscience (SSN)

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Società Ticinese delle Scienze Biomediche e Chimiche (STSBC)

Swiss Society for Allergology and Immunology (SSAI)

Swiss Plant Science Web (SPSW)

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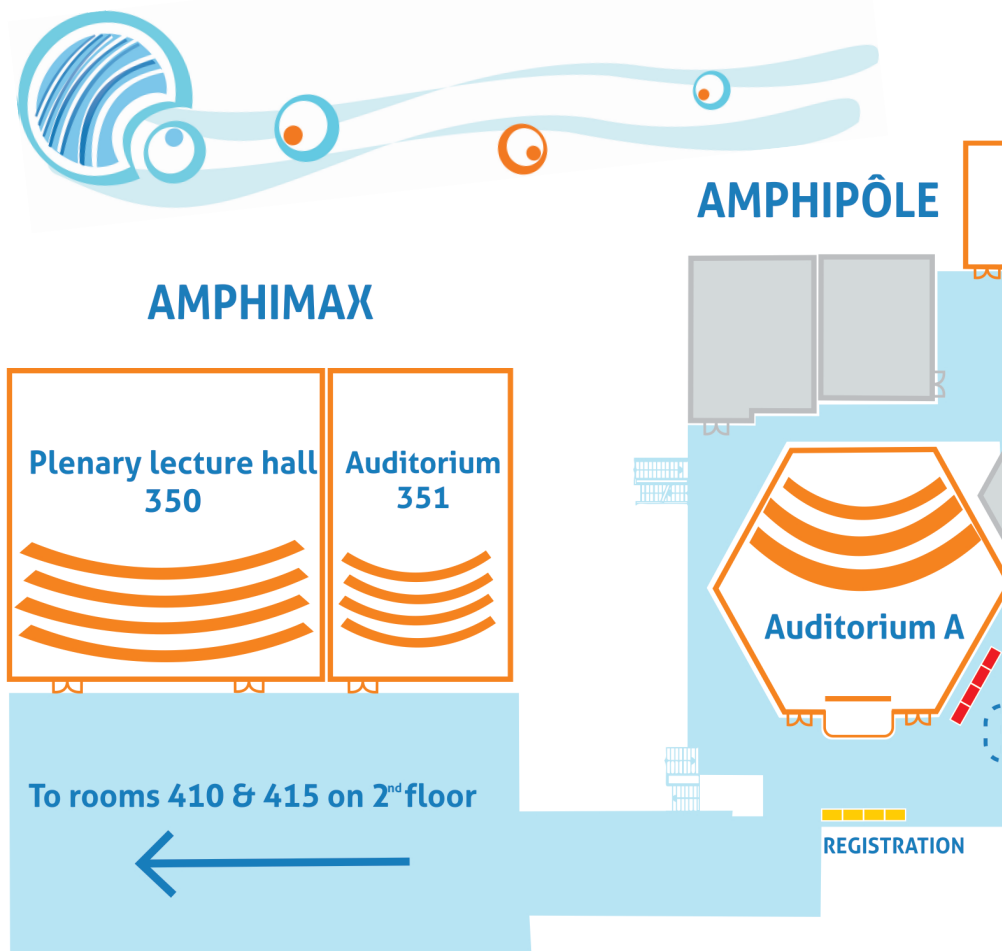


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EXHIBITORS, POSTERS, AND LECTURE ROOMS



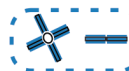
Registration



Catering zones



1 - 46 Exhibition booths



Poster boards

EXHIBITORS

- 1 Socorex
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EPFL SV PostDoc Association

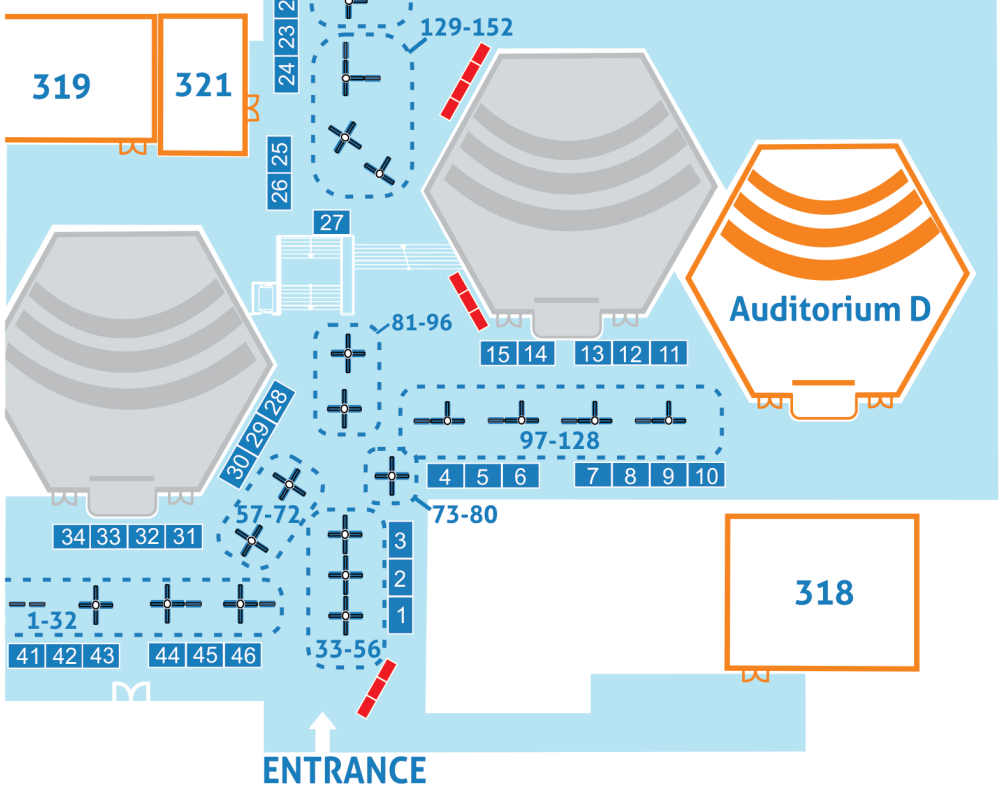
FGLS - Fribourg Graduate School of Life Sciences

BSNL - BioScience Network Lausanne

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- 33 Promega
- 34 INTEGRA Biosciences
- 41 Labgene Scientific
- 42 LubioScience
- 43 BioTek Instruments
- 44 Life Systems Design
- 45 Macherey Nagel
- 46 Enzo Life Sciences



PROGRAM OVERVIEW DAY ONE
MONDAY 12.02.2018

08:00 – 09:00	REGISTRATION, WELCOME, MOUNTING OF POSTERS
09:00 – 09:10 Lecture hall 350	WELCOME ADDRESS Christian Münz (Chairman of the LS ² Annual Meeting 2018)
09:10 – 10:00 Lecture hall 350	PLENARY LECTURE I Tamotsu Yoshimori (Osaka University, JP) “Autophagy: Its membrane dynamics and implications in diseases”
10:00 – 10:05 Lecture hall 350	TEASER: CROWDFUNDING SCIENCE SESSION Mirko Bischofberger (science.wemakeit.com)
10:05 – 10:30	COFFEE BREAK @ AMPHIPÔLE, INDUSTRY EXHIBITION, POSTER VIEWING
10:30 – 12:30	PARALLEL SYMPOSIA I
10:30 – 12:30 Amphipôle A	1 - INFLAMMATION IN CHRONIC PATHOLOGIES by LS² Section Molecular and Cellular Biosciences
10:30 – 12:30 Amphipôle D	2 - DYNAMICS OF THE ACTIN CORTEX Physics of Biology
10:30 – 12:40 Lecture hall 351	3 -TOMORROW'S PIs - THE FUTURE OF SWISS RESEARCH Special session
12:40 – 14:45 Room 318	FEEDBACK SESSION <i>For jury and finalists only</i>
12:30 – 13:45	LUNCH BREAK @ AMPHIPÔLE, INDUSTRY EXHIBITION, POSTER VIEWING
12:30 – 13:30 Room 321	Swiss Society of Experimental Pharmacology (SSEP) Board Meeting <i>Upon invitation only</i>
12:30 – 13:30 Room 319	LS² Molecular & Cellular Biosciences Board Meeting

12:40 – 13:45
Room 410 (2nd floor)

LUNCH CAREER ROUNDTABLES I
Non-Academic Careers in the Life Sciences
Lunch will be provided in the room!

13:45 – 15:45

PARALLEL SYMPOSIA II

13:45 – 15:45
Lecture hall 351

1 - MOLECULAR LOGIC OF BRAIN CIRCUITS
by Swiss Society for Neurosciences (SSN)

13:45 – 15:45
Amphipôle A

2 - THE EMERGING FIELD OF IMMUNOMETABOLISM
by Swiss Society of Experimental Pharmacology (SSEP)

13:45 – 15:45
Amphipôle D

3 - DYNAMICS OF CELLULAR SIGNALING COMPLEXES
by LS² Section Physiology

15:45 – 16:15

**COFFEE BREAK @ AMPHIPÔLE, INDUSTRY EXHIBITION,
POSTER VIEWING**

16:15 – 16:45
Lecture hall 350

FRIEDRICH-MIESCHER-AWARD LECTURE

Paola Picotti (ETH Zurich)

“Probing protein structural changes on a proteome-wide scale”

Marek Basler (University of Basel)

“Bacterial Type VI secretion system: From structure to dynamics and function”

16:45 – 17:30
Lecture hall 350

PLENARY LECTURE II

Sharon Tooze (The Francis Crick Institute, London, UK)

“Molecular mechanisms of autophagosome formation”

17:30 – 18:30
Lecture hall 350

Candies, LSD and Crowdfunding
Crowdfunding Science session

18:30 – 20:30

**POSTER SESSION, INDUSTRY EXHIBITION & BIG APÉRO @
AMPHIPÔLE**

19:30 – 20:15
Room 318

LS² Delegates Assembly
Upon invitation only

PROGRAM OVERVIEW DAY TWO

TUESDAY 13.02.2018

09:00 – 09:50
Lecture hall 350

PLENARY LECTURE III:
“THE FEBS NATIONAL LECTURER”
Andrea Ballabio
(Telethon Institute of Genetics and Medicine, Pozzuoli, IT)
“A cross-talk between lysosome and nucleus controls cell metabolism”

09:50 – 10:00
Lecture hall 350

A WORD FROM THE CHAIRMAN OF THE MEETING
Christian Münz (Chairman of the LS² Annual Meeting 2018)

10:00 – 10:30

COFFEE BREAK @ AMPHIPÔLE, INDUSTRY EXHIBITION, POSTER VIEWING

10:30 – 12:30

PARALLEL SYMPOSIA III

10:30 – 12:30
Amphipôle A

1 - SYSTEMS BIOLOGY
by SystemsX.ch

10:30 – 12:30
Amphipôle D

2 - NOVEL REGULATORY MECHANISMS AND APOPTOSIS
by LS² Section Autophagy

10:30 – 12:30
Room 415
(2nd floor)

3 - A TRANSDISCIPLINARY PANEL ON CRISPR/CAS9
A “FEBS Science & Society”-funded Science Policy Session

12:30 – 14:00

LUNCH BREAK @ AMPHIPÔLE, INDUSTRY EXHIBITION, POSTER VIEWING

12:40 – 13:10
Room 318

LS² General Assembly
All LS² members are welcome to join!

12:40 – 14:00
Room 410
(2nd floor)

LUNCH CAREER ROUNDTABLES II
Neither Academia nor Industry:
Careers out of the box
Lunch will be provided in the room!

14:00 – 16:00

PARALLEL SYMPOSIA IV

14:00 – 16:00

Lecture hall 351

1 - HOST PATHOGEN INTERACTIONS

by LS² Section Molecular and Cellular Biosciences

14:00 – 16:00

Amphipôle A

2 - BIOINFORMATICS & COMPUTATIONAL BIOLOGY: AN EVOLVING FIELD

by Swiss Institute of Bioinformatics (SIB)

14:00 – 16:00

Amphipôle D

3 - HOST PROTEIN NETWORKS DURING PATHOGEN INFECTION

by LS² Section Proteomics

16:00– 16:30

COFFEE BREAK @ AMPHIPÔLE, INDUSTRY EXHIBITION, POSTER VIEWING

16:30 – 17:15

Lecture hall 350

AWARD CEREMONIES

1. Pls of Tomorrow Award

2. Poster Prizes

16:45 – 17:15

Lecture hall 350

PLENARY LECTURE IV

THE LELIO ORCI AWARD LECTURE

Michael N. Hall (University of Basel)

"mTOR signaling in growth and metabolism"

17:15 – 18:00

Lecture hall 350

PLENARY LECTURE V

Herbert 'Skip' W. Virgin

(Washington University School of Medicine, US)

"Role of autophagy genes in inflammation and immunity"

18:00 – 18:10

Lecture hall 350

CLOSING REMARKS

Jean Gruenberg (President of LS²)

Christian Münz (Chairman of the LS² Annual Meeting 2018)





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DETAILED PROGRAM DAY ONE

MONDAY 12.02.2018

08:00 – 09:00

REGISTRATION, WELCOME COFFEE, MOUNTING OF POSTERS

09:00 – 09:10

Lecture hall 350

WELCOME ADDRESS

Jean Gruenberg (University of Geneva), President of LS²
Christian Münz (University of Zurich), Chairman of the LS² Annual Meeting 2018

09:10 – 10:00

Lecture hall 350

PLENARY LECTURE I

Tamotsu Yoshimori (Osaka University, JP)

“Autophagy: Its membrane dynamics and implications in diseases”

Autophagy is an evolutionarily conserved membrane trafficking from the cytoplasm to lysosomes. In autophagy, autophagosomes transiently emerge in the cytoplasm, sequester substrates, and eventually fuse with lysosomes to degrade the contents. In addition to nutrient supply under starvation conditions, the process functions in suppression of various diseases including infectious diseases, tumorigenesis, neurodegeneration, type 2 diabetes, etc.

My group has been working on unraveling the molecular machinery and roles of mammalian autophagy. LC3, a first protein we identified, has been mostly used golden marker in autophagy studies. Recently, we have provided new insights into biogenesis of autophagosome, which have been topic of longstanding debate. We showed that autophagosome forms at the ER-mitochondria contact site. We also found that autophagy selectively eliminates invading pathogenic bacteria, opening a new field on host-pathogen interaction. Then, we unraveled how autophagy recognizes bacteria. We also found that autophagy suppresses nephropathy through selective elimination of damaged lysosomes. I also discuss about our recent finding that high fat diet increases the amount of a



negative regulator of autophagy, Rubicon, which we identified. Knockout of the gene dramatically improved non-alcoholic fatty liver disease in mice fed high fat diet.

10:00 – 10:05
Lecture hall 350

TEASER: CROWDFUNDING SCIENCE SESSION
Mirko Bischofberger (science.wemakeit.com)



10:05 – 10:30

COFFEE BREAK @ AMPHIPÔLE, INDUSTRY EXHIBITION, POSTER VIEWING

10:30 – 12:30

PARALLEL SYMPOSIA I

10:30 – 12:30
Amphipôle A

1 - INFLAMMATION IN CHRONIC PATHOLOGIES
by LS² Section Molecular and Cellular Biosciences
Chair: Jean-Claude Martinou (University of Geneva)

Invited speakers

10:30 – 11:00

Peter Vandenameele (Ghent University, BE)
"Necrotic cell death, from molecular mechanisms to experimental therapy in inflammatory diseases"

11:00 – 11:30

Fabio Martinon (University of Lausanne)
"Inflammation initiated by disruption of cellular integrity"

11:30 – 11:50

Marie Kosco-Vilboi (Novimmune SA)
"Provoking inflammation to safely yet effectively treat cancer"



Speakers from abstracts

11:50 – 12:00

Rosalie Heilig (University of Lausanne)
"The Gasdermin-D pore acts as a conduit for IL-1 secretion"

12:00 – 12:10

Jimit Shah (University of Geneva)
"Junctional clustering of ADAM10 and its interactor Tetraspanin33 by the PLEKHA7-PDZD11 complex promotes cytotoxicity by *Staphylococcus aureus* α -toxin"

12:10-12:20 **Evgeniya Trofimenko** (University of Lausanne)
"Potassium channels and membrane polarization control membrane translocation of cell-penetrating peptides"

12:20 – 12:30 **Kateryna Shkarina** (University of Lausanne)
"Optogenetic control of inflammasome assembly and cell death"

10:30 – 12:30
Amphipôle D

2 - DYNAMICS OF THE ACTIN CORTEX

Physics of Biology

Chair: Karsten Kruse (University of Geneva)

Invited speakers

10:30 – 11:00 **Elisabeth Fischer-Friedrich**
(Technical University Dresden, DE)
"Rheology of the active cortex in mitosis"

11:00 – 11:30 **Guillaume Charras** (University College London, UK)
"Nucleation promoting factors regulate actin, nucleation kinetics to control cortical mechanics"

11:30– 11:50 **Elmar Hartmann** (JPK Instruments AG)
"Fast-scanning and quantitative-imaging Atomic Force Microscopy (AFM) combined with advanced optical techniques"



Speakers from abstracts

11:50 – 12:05 **Francesco Atzeni** (University of Zurich)
"Mechanochemical modelling as an explorative tool to study tissue morphogenesis"

12:05 – 12:20 **Qian Feng** (ETH Zurich)
"Mitochondria squeezed – mechanically induced mitochondrial fission"

12:20 – 12:30 **Caroline Arous** (University of Geneva)
"Analysis of the adhesion-mediated control of insulin secretion in response to glucose and autocrine insulin/IGF2-signaling in pancreatic β -cells"

10:30 – 12:30
Lecture hall 351



3 - Pls OF TOMORROW - THE FUTURE OF SWISS RESEARCH

Special session

Chairs: Nino Nikolovski, Aleksandra Konovalova & Elisa Araldi



Swiss Academy of Sciences
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Académie des sciences naturelles

This session offers an opportunity to postdocs and senior researchers interested in pursuing an academic career to present a talk similar in format to a professorship application interview. The finalists below have been pre-selected from 88 applicants.



A knowledgeable jury panel of professors will evaluate the presentations and provide feedback in a one-on-one session afterward.



Jury members of the 2018 edition:

Berend Snijder (ETH Zurich)

Ioannis Xenarios

(SIB Swiss Institute of Bioinformatics, Universities of Lausanne & Geneva)

Paola Picotti (ETH Zurich)

Michele de Palma (EPF Lausanne)

Matthias Peter (ETH Zurich)

Dominique Soldati-Favre (University of Geneva)

Ralf Schneggenburger (EPF Lausanne)

10:30 – 10:40

Introductory words by the chairs of the session

The finalists of the 2018 edition:

10:40 – 11:00

Petra Schwalie (EPF Lausanne)

“Single-cell RNA-seq-based identification and characterization of adult stem cells in adipose tissue and beyond”

11:00– 11:20

Tomislav Milekovic (University of Geneva)

“Leveraging neuronal ensemble signals to restore movement and communication for people with paralysis”

11:20 – 11:40

Sébastien Herzig

(Salk Institute for Biological Studies, La Jolla, US)

“Uncovering novel regulation of metabolism by energy-sensing signaling pathways”

11:40 – 12:00	Alexander Harms (University of Copenhagen, DK) "Phages to the front: Exploiting bacterial viruses to control antibiotic-tolerant infections"
12:00 – 12:20	Enkelejda Miho (ETH Zurich) "The architecture of large-scale antibody repertoire networks is reproducible, robust and redundant"
12:20 – 12:40	Andreas Moor (Weizmann Institute of Science, Rehovot, IL) "Spatial division of labor in the mammalian intestinal epithelium"
Afterwards	Collection of public votes & feedback session for jury and finalists only (see below)
12:30 – 13:45	LUNCH BREAK @ AMPHIPÔLE, INDUSTRY EXHIBITION, POSTER VIEWING
12:40 – 14:45 Room 318	<u>FEEDBACK SESSION PIs OF TOMORROW</u> <i>For jury and finalists only</i>
12:40 – 12:55	Jury decision meeting Short session only for jury members on decision of the winner
12:55 – 13:45	Lunch of presenters and jury members General remarks, discussion, and networking
13:45 – 14:45	Personal feedback One-on-one feedback from 4 jury members per candidate (4 x 15 min) <i>The jury prize and public prize winner will be announced during the award ceremony at the end of the meeting on February 13, 2018</i>
12:30 – 13:30 Room 321	Swiss Society of Experimental Pharmacology (SSEP) Board Meeting <i>Upon invitation only</i>
12:30 – 13:30 Room 319	LS² Molecular & Cellular Biosciences Board Meeting <i>Upon invitation only</i>

12:40 – 13:45
Room 410
(2nd floor)

LUNCH CAREER ROUNDTABLES I
Non-Academic Careers in the Life Sciences
Lunch will be provided in the room!

Invited speakers

Lisa Pollaro (Chief Operating Officer, Nanolive)

Claudia Zimmerli (Senior Project Manager, AO Foundation)

Sarbjit Kumar

(Head of Healthcare at Weber Shandwick Geneva)

Stefanie Buschor (Medical Affairs Specialist, Celgene)

Mehrpouya Mobin

(Medical Science Liaison Oncology, MSD)

**Please find their answers to our teaser questions for
the session on the next page.**



TEASER QUESTIONS TO THE INVITED SPEAKERS OF THE LUNCH CAREER ROUNDTABLES I: NON-ACADEMIC CAREERS IN THE LIFE SCIENCES

What is the most satisfying part of your job?

Lisa Pollaro (Chief Operating Officer, Nanolive)

The most satisfying part of my job is that it doesn't feel like a job. I feel that my contribution is fundamental and that together with the team we are creating something great that did not exist before.

Why did you leave academia?

Mehrpouya Mobin (Medical Science Liaison Oncology, MSD)

Academia is most important to create innovation. But it also requires an interdisciplinary collaboration with the industrial world to bring this innovation into application and provide access to the people. That is a fascinating endeavor that motivated me to change sides.

What skill, not learned during your academic training, has been most critical for your job?

Stefanie Buschor (Medical Affairs Specialist, Celgene)

A very important skill for my actual job I did not learn at University is definitely organization. In my position it is crucial to be organized and set the right priorities, but still getting everything done.

Can you think of a "wrong turn" that ended up being valuable in your career?

Sarbjit Kumar (Head of Healthcare at Weber Shandwick Geneva)

My first position after graduating was for the Medicines and Healthcare products Regulatory Agency in the UK. It was quite a mundane role where I was uploading information from applications for new drug licenses to a database. In fact, it turned out to be a stepping stone to a new job as a Nutrition Scientist at the Department of Health, which I really enjoyed. It was a lesson that, there is no "wrong turn" in the course of one's career and every opportunity helps you grow and create connections that can open up many new paths.

Why/how did you choose your job?

Claudia Zimmerli (Senior Project Manager, AO Foundation)

I chose this job, as it allows me to develop and acquire new skills, it allows me to work in an environment I enjoy and it also allows me to work for a cause I believe in.

13:45 – 15:45

13:45 – 15:45
Lecture hall 351

PARALLEL SYMPOSIA II

1 - MOLECULAR LOGIC OF BRAIN CIRCUITS by Swiss Society for Neurosciences (SSN)

Chair: Csaba Földy (University of Zurich)

Invited speakers

13:45 – 14:15

Joris de Wit (University of Leuven, BE)
"Control of synaptic connectivity and diversity by trans-synaptic interactions"

14:15 – 14:45

Simon Hippenmeyer
(Institute of Science and Technology Klosterneuburg, AT)
"Mechanisms generating cell-type diversity in the cerebral cortex"

14:45 – 15:05

Peter Nestorov (Witec AG)
"Understanding complex biological systems - One cell at a time"

witec ag

Speakers from abstracts

15:05 – 15:15

Chaim Gluck (University of Zurich)
"Calcium signaling in pericytes"

15:15 – 15:25

Marieke Hoekstra (University of Lausanne)
"Cold-Inducible RNA Binding Protein (CIRBP) contributes to quality of waking, REM sleep homeostasis and refines the cortical molecular response to sleep deprivation"

15:25 – 15:35

Baptiste Jaeger (University of Zurich)
"Hippocampal single-nucleus sequencing identifies a unique transcriptional signature that is predictive of reactivity in dentate granule neurons"

15:35 – 15:45

Valérie Panneels (Paul-Scherrer-Institute (PSI) Villigen)
"3D-imaging of neuronal layers in retina tissue from wild-type and retinitis pigmentosa model using cryo X-ray nanotomography"

13:45 – 15:45
Amphipôle A

2 - THE EMERGING FIELD OF IMMUNOMETABOLISM
by Swiss Society of Experimental Pharmacology (SSEP)

Chair: Carole Bourquin (University of Geneva)

Invited speakers

13:45 – 14:15

Hongbo Chi

(St. Jude Children's Research Hospital Memphis, US)

"Signaling circuits and systems biology in immune cell metabolic reprogramming"

14:15 – 14:45

Ping-Chih Ho (University of Lausanne)

"Firing up the tumor microenvironment with metabolic targeting for effective cancer immunotherapy"

14:45 – 15:05

Kathrin Pienes (Bucher Biotec AG)

"Tools for immediate early T cell activation and high-throughput phenotype analysis, enabling new immuno-oncology insights"



Speakers from abstracts

15:05 – 15:15

Tanja Eberhart (ETH Zurich)

"Development of tools to study the effect of decreased peroxisome abundance on tumorigenesis"

15:15 – 15:25

Quentin Haas (University of Bern)

"Glycan-checkpoint inhibitor unleashing CD8+ T cells against cancer"

15:25 – 15:35

Narashima Rao Uda (University of Geneva)

"Targeting lipid metabolism to improve cancer immunotherapy"

15:35 – 15:45

Marc Chanson (University of Geneva)

"Dendritic cell migration towards CCL21 requires functional Cx43"

13:45 – 15:45
Amphipôle D

**3 - DYNAMICS OF CELLULAR SIGNALING COMPLEXES
by LS² Section Physiology**

Chair: Nicolas Demaurex (University of Geneva)

Invited speakers

13:45 – 14:15

Christian Ungermann (University of Osnabrück, DE)
"Function of signaling lipid homeostasis on the lysosome/vacuole surface"

14:15 – 14:45

Sergio Grinstein (University of Toronto, CA)
"Signalling phagocytosis"

14:45 – 15:05

Andreas Wiederkehr
(Nestlé Institute of Health Sciences, CH)
"Signals controlling energy metabolism in pancreatic beta-cells"



Speakers from abstracts

15:05 – 15:15

Laure-Anne Ligeon (University of Zurich)
"Molecular mechanisms of LC3-associated phagocytosis during MHC class II presentation"

15:15 – 15:25

Andrea Picco (University of Geneva)
"The contributions of the actin machinery to endocytic membrane bending and vesicle formation"

15:25 – 15:35

Echrak Hichri (University of Bern)
"Ephaptic coupling in the heart is potentiated by the distribution of sodium channels in clusters in the intercalated disc"

15:35 – 15:45

Vaibhav Wasnik (University of Geneva)
"Positional information readout in Ca²⁺ signaling"

15:45 – 16:15

**COFFEE BREAK @ AMPHIPÔLE, INDUSTRY EXHIBITION,
POSTER VIEWING**

16:15 – 16:45
Lecture hall 350

FRIEDRICH-MIESCHER-AWARD LECTURE

Paola Picotti (ETH Zurich)

“Probing protein structural changes on a proteome-wide scale”

&

Marek Basler (University of Basel)

“Bacterial Type VI secretion system: from structure to dynamics and function”

16:45 – 17:30
Lecture hall 350

PLENARY LECTURE II

Sharon Tooze (The Francis Crick Institute, London, UK)

“Molecular mechanisms of autophagosome formation”

Autophagy (self-eating) maintains cellular homeostasis and survival, and combats disease and infection. Under the control of multiple signalling pathways autophagosomes sequester and deliver cytosolic material to the lysosome for degradation thus mediating autophagy. This rapid, dynamic process is orchestrated by a highly conserved set of proteins called the ATG (Autophagy-related) proteins, in addition to protein families involved in protein trafficking and secretion. These proteins act in a coordinated fashion, to ultimately remobilize proteins and lipids to autophagosome formation sites. My lab aims to understand how autophagosomes form under stress conditions such as amino acid starvation, with the goal to understand at a molecular level this process and autophagy. We focus on key initiating ATG proteins, including the multi-spanning membrane protein ATG9, the ULK kinases, and the PI3P effectors, the WIPIs, to understand how autophagosomes form, and how this process is regulated. Our work also aims to understand the role of protein trafficking complexes, cellular compartments, in particular the Golgi complex, endosomes, the centrosome, and membrane contact sites in the process of autophagosome formation. A more complete molecular understanding of this process will provide key knowledge to develop therapies to manipulate autophagy to improve human health and prevent disease.

17:30 – 18:30
Lecture hall 350

Candies, LSD and Crowdfunding Crowdfunding Science session

Chairs: Mirko Bischofberger and Luc Henry
(science.wemakeit.com, Zurich)



Featuring the incredible LSD research story of Robert Carhart-Harris and David Nutt and more successful projects from the first Swiss science crowdfunding channel science.wemakeit.com.

Introduction

Mirko Bischofberger and Luc Henry

(science.wemakeit.com, Zurich)

Keynote lecture

Natalie Jonk (CEO at CrowdScience, London, UK)

“On Crowdfunding Science & LSD research”

Two short project presentations

from science.wemakeit.com

1. HORAO

Philippe Schucht & team (Inselspital, Bern)

<https://wemakeit.com/projects/horao>

The HORAO project puts the most brilliant minds to work on improving technologies that visualize the exact border between brain tumor and healthy brain through a global prize-based competition!

2. At the Heart of Congo Kids

Hugues Abriel und Patricia Teixidor (University of Bern)

<https://wemakeit.com/projects/at-the-heart-of-congo-kids>

A pediatric doctor from the University Clinics of Kinshasa (DR Congo) needs to purchase scientific equipment to do his research and get advice from Swiss cardiologists.

18:30 – 20:30

POSTER SESSION, INDUSTRY EXHIBITION & BIG APÉRO @
AMPHIPÔLE

Special poster session in the Industry Exhibition Area

Odd numbers: 18:30 – 19:30

Even numbers: 19:30 – 20:30

19:30 – 20:15
Room 318

LS² Delegates Assembly
Upon invitation only



DETAILED PROGRAM DAY TWO

TUESDAY 13.02.2018



09:00 – 09:50
Lecture hall 350

PLENARY LECTURE III: "THE FEBS NATIONAL LECTURER"



Andrea Ballabio

(Telethon Institute of Genetics and Medicine, Pozzuoli, IT)

"A cross-talk between lysosome and nucleus controls cell metabolism"



In the early 50s, Christian De Duve identified a new cellular structure, the lysosome, defined as the cell's "suicide bag". Sixty years later, it is clear that the lysosome greatly exceeded the expectations of its discoverer. Over 50 different types of lysosomal storage diseases have been identified, each due to the deficiency or malfunction of a specific lysosomal protein. In addition, an important role of the lysosome has been unveiled in several common human diseases, such as cancer, obesity, neurodegenerative diseases, and infection. Recent studies in our lab have led to the identification of a lysosomal gene network and a master gene, TFEB, which regulate lysosomal biogenesis and autophagy. The activity of TFEB is controlled by the mTORC1 kinase complex through a lysosomal signaling pathway. Recently, we discovered a feedback mechanism by which TFEB in turn controls mTORC1 activity. This mechanism plays an important role in the response to starvation and to physical exercise and is deregulated in cancer. These data reveal that the lysosome acts as a signaling hub that controls cell homeostasis and the transition between biosynthetic and catabolic pathways.



09:50 – 10:00

A WORD FROM THE CHAIRMAN OF THE MEETING

10:00 – 10:30

**COFFEE BREAK @ AMPHIPÔLE, INDUSTRY EXHIBITION,
POSTER VIEWING**

10:30 – 12:30

10:30 – 12:30
Amphipôle A

PARALLEL SYMPOSIA III



SystemsX.ch
The Swiss Initiative in Systems Biology

1 - SYSTEMS BIOLOGY

by **SystemsX.ch**

Chairs: Bart Deplancke & Vassily Hatzimanikatis
(EPF Lausanne)

Invited speakers

10:30 – 11:00

Stirling Churchman (Harvard University, US)
"Gene regulation at high resolution, from the nucleus to the mitochondria"

11:00 – 11:30

Nadine Vastenhouw (MPI-CBG Dresden, DE)
"Transcriptional control in time and space"

11:30 – 11:50

Eavan Dorcey (SystemsX.ch)
& **Vassily Hatzimanikatis** (EPF Lausanne)
"Systems biology in Switzerland: A confederation of disciplines"

Speakers from abstracts

11:50 – 12:00

Peter Blattmann (ETH Zurich)
"Systems pharmacology dissection of cell-specific cholesterol regulation mechanisms reveals large pharmacodynamic variability"

12:00 – 12:10

Anush Chiappino-Pepe (EPF Lausanne)
"Identifying and targeting key cellular mechanisms for proliferation in Plasmodium parasites: a combined experimental and computational strategy"

12:10 – 12:20

Ilaria Piazza (ETH Zurich)
"A map of metabolite-proteins interactions on a system-wide scale"

12:20 – 12:30

Yolanda Schaerli (University of Lausanne)
"The mechanisms of gene regulatory networks constrain evolution: A lesson from synthetic stripe-forming circuits"

10:30 – 12:30
Amphipôle D

2 - NOVEL REGULATORY MECHANISMS AND APOPTOSIS by LS² Section Autophagy

Chairs: Mario Tschan (University of Bern) & Jörn Dengjel (University of Fribourg)

Invited speakers

10:30 – 11:00

Thomas Kaufmann (University of Bern)
"A new player in the field: Apoptosis regulation by the BCL-2 family member BOK"

11:00 – 11:30

Elena Cardenal Muñoz (University of Geneva)
"Pathogenic mycobacteria manipulate the xenophagy defence of their amoeba host"

Speakers from abstracts

11:30 – 11:45

Beatrice Paola Festa (University of Zurich)
"Impaired autophagy bridges lysosomal storage disease and epithelial dysfunction in the kidney"

11:45 – 11:55

Magali Humbert (University of Bern)
"Chaperone-mediated autophagy supports the immature phenotype of acute myeloid leukemia cells"

11:55 – 12:05

Marisa Loi (IRB Bellinzona)
"Investigation of the molecular mechanisms regulating recovER-phagy in mammalian cells"

12:05 – 12:20

Maria Pena-Francesch (University of Zurich)
"Involvement of autophagy in Epstein-Barr virus envelope acquisition"

12:20 – 12:30

Iwona Pilecka (University of Geneva)
"CRISPR/Cas9 genome-wide screen to identify players in mitochondrial homeostasis"

10:30 – 12:30

Room 415
(2nd floor)

**3 - A TRANSDISCIPLINARY PANEL ON CRISPR/CAS9
A "FEBS Science & Society"-funded Science Policy
Session**



In collaboration with www.science-studios.ch

The CRISPR/Cas9 revolution is widely being talked about these days. Apart from being a major scientific breakthrough, it also reveals how different fears and hopes are being handled by science, society, economy, and policy makers. The CRISPR/Cas9 system thus represents an ideal case to discuss the different implications of modern biomedical research, from economical, legal and ethical implications, to aspects of scientific impact and careers. The transdisciplinary panel will give the stage to experts from different fields to then discuss all these aspects around one technology.

With:

Martin Jinek (University of Zurich)

Bruno Lemaitre (EPF Lausanne)

Effy Vayena

(Chair of Bioethics - Health Ethics and Policy Lab - Department of Health Sciences and Technology, ETH Zurich)

Heinz Müller

(Swiss Federal Institute of Intellectual Property, Bern)

Moderation:

Nik Walter (Tages-Anzeiger/SonntagsZeitung)

12:30 – 14:00

**LUNCH BREAK @ AMPHIPÔLE, INDUSTRY EXHIBITION,
POSTER VIEWING**

12:40 – 13:10

Room 318

LS² General Assembly

All LS² members are welcome to join!



12:40 – 14:00
Room 410
(2nd floor)

LUNCH CAREER ROUNDTABLES II
Neither Academia nor Industry:
Careers out of the Box
Lunch will be provided in the room!

Invited speakers

Joachim Schnabl (Science Communication ETH Zurich, D-CHAB)
Nicola von Lutterotti (Medical specialist writer at NZZ and FAZ)
Ulrike Toepel (Coordinator of the Lemanic Neuroscience Doctoral School of the Universities Geneva and Lausanne)
Ksenia Tugay (Director of Professional Development at EasyCare Academy & Founder at BioMonki)
Eavan Dorcey (Managing Director of SystemsX.ch: The Swiss Initiative in Systems Biology)
Jana Döhner (Imaging specialist at Center for Microscopy and Image Analysis, University of Zurich)

TEASER QUESTIONS TO THE INVITED SPEAKERS OF THE LUNCH CAREER ROUNDTABLES II: NEITHER ACADEMIA NOR INDUSTRY - CAREERS OUT OF THE BOX

What's the most satisfying about your job?

Joachim Schnabl (Science Communication ETH Zurich, D-CHAB)
I enjoy working in an environment where cutting-edge research results are produced and the exchange with brilliant researchers.

What do you spend most of your workday with?

Nicola von Lutterotti (Medical specialist writer at NZZ and FAZ)
Most of my workday I spend reading medical literature, structure the content in a way that it makes sense to a public and "chasing" experts who are able to make the data come to live – that is to show the relevance to daily life.

What lesson from your PhD is crucial for your current position?

Ulrike Toepel (Coordinator of the Lemanic Neuroscience Doctoral School of the Universities Geneva and Lausanne)
Working WITH each other is better than working AGAINST each other.

What skill have you not learned during your academic training that is crucial for your job?

Ksenia Tugay (Director of Professional Development at EasyCare Academy & Founder at BioMonki)
Well, there are many... But two crucial ones are diplomacy and flexibility I need to be very diplomatic and empathetic in my job as I work with people from all over the world who have all sorts of backgrounds for example senior executives, top professors and medical doctors. Ensuring efficient and smooth communication with everyone can be challenging, but at the same time it is inspiring to work in such diverse environment. Sometimes in my job I just "need to make things happen". So I must be creative and resourceful and sometimes make last minute arrangements. My PhD studies were well structured. If a series of experiments did not work, you might need to start another one on the weekend, but often there is not much you can do, because you need to order new animals, test new antibodies and so on. In my job things can happen pretty fast and you need to adapt.

Do you remember a career failure that turned out to be very valuable?

Eavan Dorcey (Managing Director of SystemsX.ch: The Swiss Initiative in Systems Biology)
The main project I worked on during my postdoc turned out not to be what we were expecting. After more than two years of work, we reached a dead end, and had to focus on our secondary project. That led me to start a collaboration with our first bioinformatician, who had recently joined the lab. Working together was challenging, and at first we hardly even understood the scientific language the other one spoke. But the efforts paid off: Not only did we get the work published, I also learned a lot, about bioinformatics, but more importantly about working with people from different backgrounds and disciplines.

Why did you decide against the typical academic career path?

Jana Döhner (Imaging specialist at Center for Microscopy and Image Analysis, University of Zurich)
Working in a microscope facility opened me the opportunity to work at a considerable interface between the industry sector and academia, and while extending your network in the field you are still connected into various research projects, besides gaining extensive knowledge in the field of microscopy which always has fascinated me.

14:00 – 16:00

PARALLEL SYMPOSIA IV

14:00 – 16:00

Lecture hall 351

1 - HOST PATHOGEN INTERACTIONS

by LS² Section Molecular and Cellular Biosciences

Chair: Volker Heussler (University of Bern)

Invited speakers

14:00 – 14:30

Dominique Soldati-Favre (University of Geneva)
"Prison break: The natural egress of toxoplasma from infected cells is a tightly programmed event"

14:30 – 15:00

Andreas Müller (University of Magdeburg, DE)
"*In vivo* biosensors for Leishmania major viability and proliferation reveal distinct parasite containment modes dependent on the cellular niche and immune effector amplitude"

15:00 – 15:20

Luca Clario (Nanolive SA)
"The 3D Cell Explorer, a label-free nanoscopic solution to monitor host-pathogen interactions in three dimensions"



Speakers from abstracts

15:20 – 15:30

Charlotte Montespan (University of Zurich)
"Role of autophagy during Kaposi's sarcoma-associated herpesvirus (KSHV) entry"

15:30 – 15:40

Saori Yoshii (University of Lausanne)
"Investigation on the ubiquitination mechanisms for xenophagy induction"

15:40 – 15:50

Caroline Barisch (University of Geneva)
"Take it with a pinch of salt! Zinc intoxication to control mycobacteria infection!"

15:50 – 16:00

Vivek Thacker (EPF Lausanne)
"Lung-on-a-chip microtechnologies for studies of host-pathogen interactions in M. tuberculosis infections"

14:00 – 16:00
Amphipôle A

2 - BIOINFORMATICS & COMPUTATIONAL BIOLOGY: AN EVOLVING FIELD

by Swiss Institute of Bioinformatics (SIB)

Chair: Ioannis Xenarios (SIB Swiss Institute of Bioinformatics Lausanne, Universities of Lausanne & Geneva)

Invited speakers

14:00 – 14:30

Mark Robinson (University of Zurich)

"On the analyses of single cell RNA sequencing data"

14:30 – 15:00

Alexander Lachmann

(Mount Sinai Center for Bioinformatics, NY, US)

"ARCHS4: Massive mining of publicly available RNA-seq data from human and mouse"

15:00 – 15:15

Ioannis Xenarios

(SIB Swiss Institute of Bioinformatics Lausanne, Universities of Lausanne & Geneva)

"Biocuration and bioinformatics competence centers: role and mission in 21st century biology"



Speakers from abstracts

15:15 – 15:30

Adithi Varadarajan (ETH Zurich)

"An integrative approach to identify the entire protein coding potential of prokaryotic genomes by proteogenomics"

15:30 – 15:45

Marco Pagni (Swiss Institute of Bioinformatics, Lausanne)

"An integrative approach to analysis of omics data and condition-specific metabolic networks"

15:45 – 16:00

Alan Bridge (Swiss Institute of Bioinformatics, Lausanne)

"The SwissLipids knowledge resource for lipid biology"



14:00 – 16:00
Amphipôle D

3 - HOST PROTEIN NETWORKS DURING PATHOGEN INFECTION

by LS² Section Proteomics

Chairs: Gisa Gerold

(Centre for Experimental and Clinical Infection Research GmbH,
Hannover, DE) & Bernd Wollscheid (ETH Zurich)

Invited speakers

14:00 – 14:30

Gisa Gerold

(Centre for Experimental and Clinical Infection Research GmbH,
Hannover, DE)

"Virology meets proteomics: Virus entry factor
discovery and beyond"

14:30 – 15:00

Ben Collins (ETH Zurich)

"Quantitative interaction proteomics - Insights into
host-pathogen biology in Mycobacterium
tuberculosis"

15:00 – 15:20

Maria Pavlou (Dualsystems Biotech AG)



"Exploring the surfaceome of living cells and its
interactors via LRC-TriCEPS™"

Speakers from abstracts

15:20 – 15:30

Christian Feller (ETH Zurich)

"Characterization of epigenetic inhibitors by histone
epi-proteomics technology"

15:30 – 15:40

Charlotte Nicod (ETH Zurich)

"Host proteome modulation upon Mycobacterium
tuberculosis infections"

15:40 – 15:50

Emanuela Milani (ETH Zurich)

"HBx: Hepatitis B virus Swiss Army knife for survival"

15:50 – 16:00

Silke Stertz (University of Zurich)

"Phosphoproteomic-based kinase profiling early in
influenza virus infection identifies GRK2 as novel
antiviral drug target"

16:00– 16:30

COFFEE BREAK @ AMPHIPÔLE, INDUSTRY EXHIBITION,
POSTER VIEWING

16:30 – 17:15
Lecture hall 350

AWARD CEREMONIES

1. Pls of Tomorrow Award Jury & Public Award

sc | nat

Swiss Academy of Sciences
Akademie der Naturwissenschaften
Accademia di scienze naturali
Académie des sciences naturelles



International Journal of
Molecular Sciences
an open access journal by iedys



2. Poster Prizes

- The Swiss Young Cell Biologist of the Year, awarded by the LS² section MCB, which consists of a free registration to the American Society for Cell Biology (ASCB) Meeting 2018, Dec 8-12, 2018, San Diego, CA & a travel grant of 1400 CHF to the meeting, sponsored by SCNAT
- The Journal of General Virology (JGV) poster prize to a young virologist
- The Physiology Poster prize, awarded by the LS² section Physiology and realized by the Physiology department of UNIGE
- The poster prize of the Swiss Society of Experimental Pharmacology (SSEP)
- The Autophagy poster prize, sponsored by "Cells", the Open Access Journal by MDPI. This prize includes a free publication of a manuscript in "Cells" in 2018



16:45 – 17:15
Lecture hall 350

PLENARY LECTURE IV

THE LELIO ORCI AWARD LECTURE

Michael N. Hall (University of Basel)

"mTOR signaling in growth and metabolism"



17:15 – 18:00
Lecture hall 350

PLENARY LECTURE V

Herbert 'Skip' W. Virgin

(Washington University School of Medicine, US)

"Role of autophagy genes in inflammation and immunity"

To understand how autophagy (Atg) genes control immunity we systematically analyzed the role of core Atg genes in macrophages and other myeloid cells in control of inflammation, infection and immunity *in*

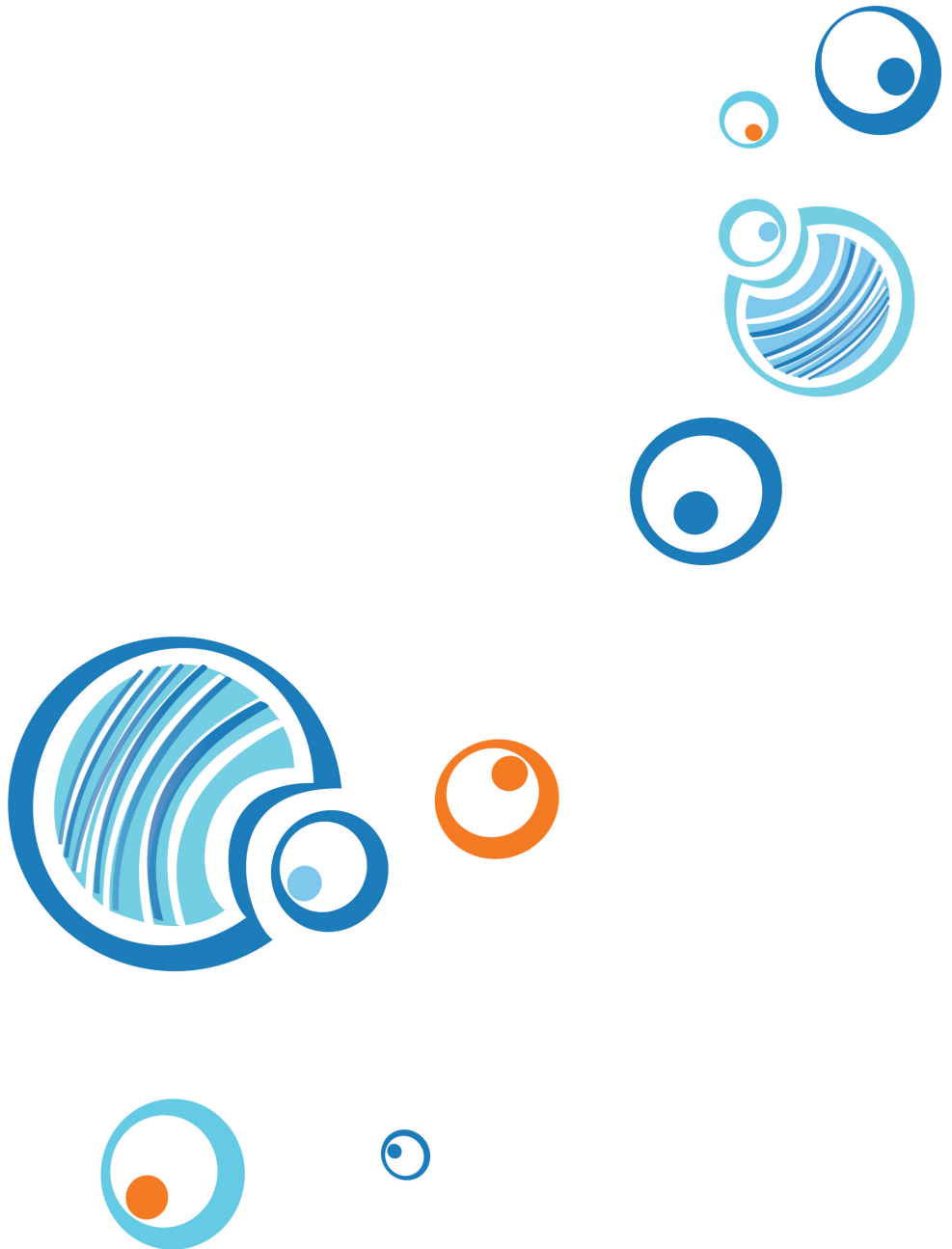
vivo. Atg genes are essential for controlling replication of some pathogens in a cell-intrinsic manner and for the control of the inflammatory phenotype of macrophages. Interestingly, this key physiological role of Atg genes is cell type- and stimulus-specific. Despite clear data from such loss-of-function studies *in vivo* for the role of Atg gene functions in control of infection and inflammation, the cellular mechanisms for these effects are not clear. To define the molecules involved in Atg gene-dependent regulation of macrophage activation we have performed whole genome CRISPR-Cas9-based screens. These studies reveal a series of candidate cellular pathways potentially regulated by core Atg genes. In addition, we have revisited a previously published demonstration that Atg5, Atg7, Atg16L1 and the conjugation of Atg5 to Atg12 (but not Atg14 or degradative autophagy) are required for the control of murine norovirus (MNoV) replication by the key anti-viral cytokine interferon- γ (IFN γ). We constructed a BV2 microglial cell line expressing BirA*-tagged Atg5. Comparison of Atg5-adjacent proteins in the presence or absence of IFN γ revealed candidate proteins for participating in IFN γ -driven intracellular anti-viral immunity. Of these candidates, to date we have confirmed a role for IRGM1 (also LRG-47 in the mouse) and WIPI-2 in IFN γ -mediated control of MNoV replication. Use of CRISPR-CAS9-driven knockout of additional genes thus reveals a cassette of autophagy pathway-related genes that are key for IFN γ -driven intracellular anti-viral immunity. The implications for understanding the role of autophagy and the non-canonical functions of Atg genes in infection and inflammation will be discussed.

18:00 – 18:10
Lecture hall 350

CLOSING REMARKS

Jean Gruenberg (President of LS²)

Christian Münz (Chairman of the LS² Annual Meeting 2018)



POSTERS

*(SORTED BY CATEGORY NAME AND
POSTER NUMBER & WITHIN CATEGORIES
BY FAMILY NAME)*

*= last author(s)

AUTOPHAGY 1

Kinome activity remodeling underlying autophagy regulation in cancer

Abou Eid, Shadi

Shadi Abou Eid (1), Tilman Brummer* (2),
Jörn Dengjel (1)*

(1) University of Fribourg, Switzerland
(2) University of Freiburg, Germany

AUTOPHAGY 2

Inverted recruitment of autophagy proteins to the Plasmodium berghei parasitophorous vacuole membrane

Bindschedler, Annina

Annina Bindschedler (1), Jacqueline
Schmuckli-Maurer (1), Vera Reber (1)
Rahel Wacker (1), Anthony Zakher, Volker
Heussler (1)*

(1) Institute of Cell Biology, University of
Bern

AUTOPHAGY 3

CnrD and CueA, two novel autophagy receptors

Cardenal Muñoz, Elena

Elena Cardenal-Muñoz (1), Imen Ayadi (1),
Jason S. King (2), Thierry Soldati (1)*

(1) Faculty of Science, University of
Geneva, Switzerland, Department of
Biochemistry
(2) Centre for Membrane Interactions and
Dynamics, University of Sheffield, United
Kingdom, Department of Biochemical
Sciences

AUTOPHAGY 4

Impaired autophagy bridges lysosomal storage disease and epithelial dysfunction in the kidney

Festa, Beatrice Paola

Beatrice Paola Festa (1), Zhiyong Chen (1),
Marine Berquez (1), Huguette Debaix (1),
Jenny Ann Prange (1), Glenn van de Hoek
(2), Alessio Cremonesi (3), Andrea
Raimondi (4) Nathalie Nevo (5), Rachel H
Giles (2), Olivier Devuyst (1)*, Alessandro
Luciani (1)*

(1) University of Zurich, Institute of
Physiology
(2) University Medical Center Utrecht,
Hubrecht Institute
(3) University Children's Hospital Zurich,
Division of Clinical Chemistry and
Biochemistry
(4) San Raffaele Scientific Institute,
Experimental Imaging Center
(5) Université Paris Descartes, INSERM
U1163

AUTOPHAGY 5

Mass spectrometry-based kinase assays to study the impact of TORC1 on autophagy related proteins

Hu, Zehan

Zehan Hu (1), Serena Raucci (1), Claudio
De Virgilio (1), Jörn Dengjel (1)*

(1) University of Fribourg, Dep. of Biology

AUTOPHAGY 6

Chaperone-mediated autophagy supports the immature phenotype of acute myeloid leukemia cells

Humbert, Magali

Magali Humbert (1), Mario Tschan (1)*

(1) Institute of Pathology, University of Bern, Division of Experimental Pathology

AUTOPHAGY 7

The role of the p73-ATG5 axis in regulating autophagy in atopic dermatitis and psoriasis

Klapan, Kim

Kim Klapan (1), Ziva Frangez (1), Zhaoyue He (1), He Liu (1), Shida Yousefi (1), Dagmar Simon (2), Hans-Uwe Simon*(1)

(1) Institute of Pharmacology, University of Bern
(2) Department of Dermatology, University of Bern

AUTOPHAGY 8

The impact of *Pseudomonas aeruginosa* lectin LecB on autophagy in human keratinocytes

Landi, Alessia

Alessia Landi (1), Winfried Römer (1)*

(1) BIOS, University of Freiburg, Biology

AUTOPHAGY 9

Parvalbumin facilitates selective removal of mitochondria through autophagy

Lichvarova, Lucia

Lucia Lichvarova (1), Thomas Henzi (1), Dzhamilja Safiulina (2), Allen Kaasik (2), Beat Schwaller (1)*

(1) University of Fribourg, Department of Medicine

(2) University of Tartu, Institute of Biomedicine and Translational Medicine

AUTOPHAGY 10

Molecular mechanisms of LC3-associated phagocytosis during MHC class II presentation

Ligeon, Laure-Anne

Laure-Anne Ligeon (1), Susana Romao (1), Maria Pena-Francesch (1), Christian Münz (1)*

(1) University of Zurich, Institute of Experimental Immunology

AUTOPHAGY 11

Investigation of the molecular mechanisms regulating recovery in mammalian cells

Loi, Marisa

Marisa Loi Maurizio Molinari, Institute for Research in Biomedicine, Bellinzona

AUTOPHAGY 12

Impaired mitophagy bridges mitochondrial disorders and epithelial damage in the kidney

Marine, Berquez

Anke Schumann (1), Marine Berquez (1), Alessandro Luciani (1), Matthias Baumgartner (2), Olivier Devuyst (1)*

(1) Institute of Physiology, University of Zurich

(2) Division of Metabolism, University Children's Hospital Zurich



AUTOPHAGY 13

Role of autophagy during Kaposi's sarcoma-associated herpesvirus (KSHV) entry

Montespan, Charlotte

Charlotte Montespan (1), Nicole Caduff (1), Christian Münz (1)*

(1) Institute of Experimental Immunology, Viral Immunobiology

AUTOPHAGY 14

Oncogenic DMTF1 β positively impacts on autophagy and migration of breast cancer cells

Niklaus, Nicolas

Nicolas Niklaus (1), Magali Humbert (1), Mario Tschan (1)*

(1) Institute of Pathology, Experimental Pathology, University of Bern

AUTOPHAGY 15

Involvement of autophagy in Epstein-Barr virus envelope acquisition

Pena-Francesch, Maria

Maria Pena-Francesch (1), Laure-Anne Ligeon, Heike Nowag (1), Christian Münz (1)*

(1) University of Zürich, Institute of Experimental Immunology

AUTOPHAGY 16

CRISPR/Cas9 genome-wide screen to identify players in mitochondrial homeostasis

Pilecka, Iwona

Iwona Pilecka (1), Evangelia Vartholomaiou (1), Jean-Claude Martinou (1)*
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AUTOPHAGY 17

Blocking autophagy supports ALK-targeted therapy of EML4-ALK positive lung cancer cells

Schläfli-Bill, Anna

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AUTOPHAGY 18

Targeting autophagy and lysosomal stability for improving sunitinib treatment of pancreatic neuroendocrine tumors

Wiedmer, Tabea

Tabea Wiedmer (1), Rasmus Frank (1), Mario P. Tschan (1), Aurel Perren (1), Ilaria Marinoni (1)*

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AUTOPHAGY 19

Investigation on the ubiquitination mechanisms for xenophagy induction

Yoshii, Saori

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AUTOPHAGY 20

Mass spectrometry-based assays to study the relationship between ubiquitination and autophagy

Zhou, Jianwen

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BIOPHYSICS 21

Mechanochemical modelling as an explorative tool to study tissue morphogenesis

Atzeni, Francesco

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BIOPHYSICS 22

Mitochondria squeezed – mechanically induced mitochondrial fission

Feng, Qian

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BIOPHYSICS 23

Microsecond dynamics and

network analysis of the HIV-1 SOSIP Env trimer reveal collective behavior and conserved microdomains of the glycan shield

Lemmin, Thomas

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BIOPHYSICS 24

Optogenetics approach to enlighten the gating mechanism of Acid-sensing ion-channels

Vaithia Natha Subramanian, Anand

Anand Vaithia (1), Stephan Kellenberger (1)*

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BIOPHYSICS 25

Conformational dynamics and role of the acidic pocket in ASIC pH-dependent gating

Vullo, Sabrina

Sabrina Vullo (1), Gaetano Bonifacio (1), Sophie Roy (1), Niklaus Johner (2) Simon Bernèche (2), Stephan Kellenberger (1)*

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BIOPHYSICS 26

Kinetic modeling of HP1 chromatin binding reveals design principles of multivalent chromatin effector proteins

Weilandt, Daniel Robert

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CANCER BIOLOGY 27

Dissecting the role of autophagy in normal and malignant B cells

Arambasic, Miroslav

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CANCER BIOLOGY 28

Development of tools to study the effect of decreased peroxisome abundance on tumorigenesis

Eberhart, Tanja

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CANCER BIOLOGY 29

Metabolic modulation of β 1

integrin acetylation regulates cancer cell growth, adhesion and ECM assembly

Fouad, Kenza

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CANCER BIOLOGY 30

Glycan-checkpoint inhibitor unleashing CD8+ T cells against cancer

Haas, Quentin

Quentin Haas (1), Christoph Schneider (1), Cedric Simillion (2), Kayluz Boligan (1), Tankica Maneva Timcheva (1), Camilla Jandus (3), Mirela Kremenovic (1), Gabriela Baerlocher (4), Pedro Romero (3), Robert Hunger (2), Alfred Zippelius (5), Heinz Läubli (5), Stephan von Gunten (1)

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CANCER BIOLOGY 31

Resistance to HER2 targeted therapy is associated with induction of autophagy in esophageal adenocarcinoma cells

Janser, (Ariane) Félice

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CANCER BIOLOGY 32

Taxanes elicit a non-cancer-cell autonomous pro-metastatic cascade through extracellular vesicles and monocytes

Keklikoglou, Ioanna

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CANCER BIOLOGY 33

A non-catalytic function of fatty acid synthase in acute promyelocytic leukemia cell differentiation

Mosimann, Severin

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CANCER BIOLOGY 34

Monobodies targeting SH2 domain-phosphotyrosine interactions of Src family tyrosine kinases

Schmit, Nadine

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CANCER BIOLOGY 35

The potential role of HTATIP2 as a tumor suppressor in Gliomablastoma

Thi Tham, Nguyen

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CANCER BIOLOGY 36

Targeting lipid metabolism to improve cancer immunotherapy

Uda, Narasimha Rao

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COMPUTATIONAL BIOLOGY 37

Modelling heterogeneous microbial communities: A multi-scale approach

Angeles Martinez, Liliana

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COMPUTATIONAL BIOLOGY 38

The SwissLipids knowledge resource for lipid biology

Bridge, Alan

Lucila Aimo (1), Robin Liechti (2), Nevila Hyka-Nouspikel (1), Lou Götz (2), Anne Niknejad (2), Anne Gleizes (2), Dmitry Kuznetsov (2), Fabrice David (3), Gisou van der Goot (4), Howard Riezman (5), Ioannis Xenarios (1,2), Alan Bridge (1)*

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COMPUTATIONAL BIOLOGY 39

"Multi-database" curation of the autophagy process: Providing a structured and computationally tractable knowledge for research

Feuermann, Marc

Marc Feuermann (1), Pascale Gaudet (1), Huaiyu Mi (2), Suzanna E. Lewis (3), Paul Denny (4), David P. Hill (5), Ruth C. Lovering (4), Paola Roncaglia (6), Sylvain Poux (1), Alan Bridge (1), Lydie Bougueleret (1), Ioannis Xenarios (1), Paul D. Thomas (2)*, Helene Plun-Favreau (7)

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COMPUTATIONAL BIOLOGY 40

On expert curation and sustainability: UniProtKB/Swiss-Prot as a case study

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DRUG DISCOVERY 41

Pre-clinical development of PQR620, a highly potent and selective mTORC1/2 inhibitor

Borsari, Chiara

Chiara Borsari (1), Denise Rageot (1), Thomas Bohnacker (1), Anna Melone (1), Florent Beaufls (1), Jürgen Mestan (2), Jean-Baptiste Langlois University of Basel, Department of Biomedicine, Petra Hillmann (2), Paul Hebeisen (2), Dorian Fabbro (2), Matthias P. Wymann (1)*

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DRUG DISCOVERY 42

Dysregulation of lysosomal compartment potentiates the anti-tumor effect of sorafenib by inhibiting hepatocellular carcinoma progression

Gavini, Jacopo

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DRUG DISCOVERY 43

Pre-clinical development of PQR530, a highly potent dual PI3K/mTOR kinase inhibitor

Rageot, Denise

Denise Rageot (1), Florent Beaufls (1), Anna Melone (1), Alexander M. Sele (1),

Thomas Bohnacker (1), Chiara Borsari (1), Jürgen Mestan (2), Petra Hillmann (2), Paul Hebeisen (2), Dorian Fabbro (2), Matthias P. Wymann (1)*

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GENETICS 44

UniProtKB/Swiss-Prot in the era of personalized medicine: Challenges, current work and future perspectives

Famiglietti, Maria Livia

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GENETICS 45

The role of the HOX protein LIN-39 in the maintenance of VPC proliferation

Heinze, Svenia

Svenia Heinze (1), Alex Hajnal (1)*

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GENETICS 46

Congenital Erythrocytosis- Identification of mutations in the

oxygen-sensing pathway (VHL and EGLN1 genes)

Lopes, Andreia

Andreia Lopes (1), Celeste Bento (2), Janet Pereira (2), Ana Catarina Oliveira (2), Luís Relvas (2), Elizabeth Cunha (2)*, Tabita Magalhães Maia (2)*, Leticia Ribeiro (2)*

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GENETICS 47

Exploring MARS, a collection of mutants affecting chloroplast-to-nucleus retrograde signaling

Ramundo, Silvia

Silvia Ramundo (1)*, Karina Perlaza (1), Hannah Toutkoushian (1), Mable Lam (1), Lorenzo (2), Morgane Boone (1), Martin Jonikas (3), Peter Walter (1)

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INFECTIOUS DISEASES 48

Take it with a pinch of salt! Zinc intoxication to control mycobacteria infection!

Barisch, Caroline

Caroline Barisch (1), Vera Kalinina (1), Louise Lefrançois (1), Joddy Appiah (1), Hendrik Koliwer-Brandl (2), Hubert Hilbi (2), Thierry Soldati (1)*

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INFECTIOUS DISEASES 49

Dictyostelium vacuolins play a role in plasma membrane protein recycling and mycobacterial infection

Bosmani, Cristina

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INFECTIOUS DISEASES 50

Characterization of the processing and function of rhoptyr kinase in Toxoplasma gondii

Ben Chaabene, Rouaa

Rouaa Ben Chabeene (1), Budhaditya Mukherjee (1), Gaëlle Lentini (1) & Dominique Soldati-Favre (1)

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INFECTIOUS DISEASES 51

Genome wide mutagenesis strategies in Dictyostelium discoideum and Mycobacterium marinum to decipher the conserved genetic basis of mycobacteria intracellular infections

Lefrançois, Louise

Louise H Lefrançois (1), Tom Mendum (2), Rachel Shrimpton (2), Frédéric Burdet (3), Marco Pagni (3), Graham Stewart (2), Thierry Soldati (1)*

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INFECTIOUS DISEASES 52

Cell cycle dynamics during Dictyostelium discoideum infection by Mycobacterium marinum studied at the single cell level

Mottet, Manon

Manon Mottet (1), Ana T. López-Jiménez (1), Thierry Soldati (1)*

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INFECTIOUS DISEASES 53

Toll-like receptor 7 deficient neutrophils have impaired effector functions at the onset of Leishmania major infection

Regli, Ivo B.

Ivo B. Regli, Benjamin P. Hurrell, Katiuska Passelli, Fabienne Tacchini-Cottier*,

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INFECTIOUS DISEASES 54

LPS promotes targeting of GBPs to the bacterial outer membrane to induce inflammasome activation

Santos, José

José Santos (1), Mathias Dick (2), Petr Broz (1)*

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INFECTIOUS DISEASES 55

Lung-on-a-chip microtechnologies for studies of host-pathogen interactions in M. tuberculosis infections

Thacker, Vivek

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MICROBIOLOGY 56

Role of ESCRT in vacuole membrane repair during Mycobacterial infection

Lopez Jimenez, Ana Teresa

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MICROBIOLOGY 57

Relationships between the RelBE-1 toxin-antitoxin system and proline utilization in the Caulobacter crescentus Alphaproteobacterium

Mouammine, Annabelle

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MOLECULAR AND CELLULAR BIOSCIENCES 58

PQN-59: A novel regulator of PLK-1 in *C. elegans* embryos.

Abbatemarco, Simona

Simona Abbatemarco (1), Luca Cirillo (1),
Francoise Schwager (1), Monica Gotta (1)*

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MOLECULAR AND CELLULAR BIOSCIENCES 59

Analysis of the adhesion-mediated control of insulin secretion in response to glucose and autocrine insulin/IGF2-signaling in pancreatic β -cells

Arous, Caroline

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MOLECULAR AND CELLULAR BIOSCIENCES 60

The RNA-binding protein NONO coordinates hepatic adaptation to feeding

Benegiamo, Giorgia

Giorgia Benegiamo (1), Ludovic S. Mure (2), Galina Erikson (3), Hiep D. Le (2), Ermanno Moriggi (1), Steven A. Brown (1)*, Satchidananda Panda (2)*

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MOLECULAR AND CELLULAR BIOSCIENCES 61

A common cofactor of the molecular chaperones Hsp70 and Hsp90 balances the equilibrium between folding and degradation

Bhattacharya, Kaushik

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MOLECULAR AND CELLULAR BIOSCIENCES 62

Whole-body regeneration in *Botrylloides leachi*

Blanchoud, Simon

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MOLECULAR AND CELLULAR BIOSCIENCES 63

Does BNP modulate cardiomyocyte proliferation?

Bon, Anne-Charlotte

Anne-Charlotte Bon (1), Stéphanie Rignault-Clerc (1), Christelle Biemann (1), Nathalie Rosenblatt-Velin (1)*

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MOLECULAR AND CELLULAR BIOSCIENCES 64

Alteration of c-kit-dependent adhesion and spreading by gain or loss of function of SHP2

Chebbi, Seimia

Seimia Chebbi, University of Geneva , Cell
Physiology and Metabolism

MOLECULAR AND CELLULAR BIOSCIENCES 65

Unraveling the role of the SNARE protein Sec22b in ER-phagosome membrane contact sites

Criado Santos, Nina

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Nicolas Demaurex (1), Paula Nunes-Hasler
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Cell Physiology and Metabolism

MOLECULAR AND CELLULAR BIOSCIENCES 66

Clearance of proteasome-resistant protein polymers from the mammalian ER

Fregno, Ilaria

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(1), Elisa Fasana (1), Maurizio Molinari (1)*

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control

MOLECULAR AND CELLULAR BIOSCIENCES 67

The Gasdermin-D pore acts as a conduit for IL-1 β secretion

Heilig, Rosalie

Rosalie Heilig (1), Matthias S. Dick (2),
Lorenzo Sborgi (2), Sebastian Hiller (2),
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MOLECULAR AND CELLULAR BIOSCIENCES 68

Neuregulin1 β regulates glucose uptake in cardiomyocytes

Heim, Philippe

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Marijke Brink (1)*

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MOLECULAR AND CELLULAR BIOSCIENCES 69

Noncanonical functions of Phenylalanyl tRNA synthetase

Ho, Manh Tin

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Jiongming Lu (2),
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Ageing

MOLECULAR AND CELLULAR BIOSCIENCES 70

Metabolic perturbations in the Bicc1 model of polycystic kidney diseases

Leal-Esteban, Lucia C

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MOLECULAR AND CELLULAR BIOSCIENCES 71

Characterization of the human protein THEM6, a potential thioesterase involved in cellular lipid metabolism

Mary, Camille

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MOLECULAR AND CELLULAR BIOSCIENCES 72

The contributions of the actin-machinery to endocytic membrane bending and vesicle formation

Picco, Andrea

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MOLECULAR AND CELLULAR BIOSCIENCES 73

Adult sox10+ cells contribute to

myocardial regeneration in the zebrafish

Sande, Marcos

Marcos Sande (1), Ines Marques (1), Galardi Maria (2), Gabriela Guzman (3), Fernando Rodriguez (3), Juan Manuel Gonzalez-Rosa (4), Nadia Mercader (1)*

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MOLECULAR AND CELLULAR BIOSCIENCES 74

TFAP2 transcription factors direct lipid droplet biogenesis

Scott, Cameron

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MOLECULAR AND CELLULAR BIOSCIENCES 75

Two E3 ubiquitin ligases involved in membrane traffic fine-tune signal transduction

Segala, Gregory

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MOLECULAR AND CELLULAR BIOSCIENCES 76

Mechanism of cell death induced by the TAT-RasGAP317-326 anticancer peptide

Serulla Llorens, Marc

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MOLECULAR AND CELLULAR BIOSCIENCES 77

Junctional clustering of ADAM10 and its interactor Tetraspanin33 by the PLEKHA7-PDZD11 complex promotes Staphylococcus aureus α -toxin-dependent cell death

Shah, Jimit

Jimit Shah (1), Florian Rouaud (1), Diego Guerrero (1), Ekaterina Vasileva (1), Lauren Popov (2), William Kelly (3), Jean Carette (2), Manuel Amieva (2), Sandra Citi (1)*

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MOLECULAR AND CELLULAR BIOSCIENCES 78

Potassium channels and membrane polarization control

membrane translocation of cell- penetrating peptides

Trofimenko, Evgeniya

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MOLECULAR AND CELLULAR BIOSCIENCES 79

Nanoemulsion-based lipid droplets as a new model for studying protein-lipid interactions

Vežočnik, Valerija

Valerija Vežočnik (1), Simona Sitar (2), Ksenija Kogej (3), Magda Tušek-Žnidarič (4), Kristina Sepčič (1), Vesna Hodnik (1), Ema Žagar (3), Peter Maček (1)*

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MOLECULAR AND CELLULAR BIOSCIENCES 80

Gamete fusion rapidly reconstitutes a bi-partite transcription factor to block re- fertilization

Vjestica, Aleksandar

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 Laura Merlini, University of Lausanne, Department of Fundamental Microbiology
 Sophie Martin *, University of Lausanne, Department of Fundamental Microbiology

MOLECULAR AND CELLULAR BIOSCIENCES 81**Arginase-II activates mTORC1 through myosin-1b in vascular cell senescence and apoptosis****Xiong, Yuyan**

Yuyan Xiong (1), Yi Yu (1), Jean-Pierre Montani (1), Zhihong Yang (1), Xiu-Fen Ming (1)

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NEUROSCIENCE 82**Calcium signaling in pericytes****Gluck, Chaim**

Chaim Gluck (1), Jill Stobart (1), Annika Keller (2), Bruno Weber (1)*

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 (2) University Hospital Zurich, Neurosurgery

NEUROSCIENCE 83**Cold-Inducible RNA Binding Protein (CIRBP) contributes to quality of waking, REM sleep homeostasis and refines the cortical molecular response to sleep deprivation****Hoekstra, Marieke**

Marieke Hoekstra (1), Yann Emmenegger (1), Paul Franken (1)*

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NEUROSCIENCE 84**Hippocampal single-nucleus sequencing identifies a unique transcriptional signature that is predictive of reactivity in dentate granule neurons****Jaeger, Baptiste**

Baptiste Jaeger (1), Sara Linker (2), Sarah Parylak (2), Jerika Barron (2), Iryna Gallina (2), Christian Saavedra (2), Benjamin Lacar (3), Conor Fitzpatrick (2), Sebastian Jessberger(1), Fred Gage (2)*

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NEUROSCIENCE 85**Treatment of human cells derived from myoclonic epilepsy and ragged red fiber (MERRF) disease by peptide-mediated mitochondrial delivery****Liu, Chin-San**

Chin-San Liu, Changhua Christian Hospital, Changhua, Taiwan, Vascular and Genomic Center and Department of Neurology

NEUROSCIENCE 86**Effect of astrocyte Per2 knock out on animal behaviour****Martini, Tomaz**

Tomaz Martini (1), Urs Albrecht (1)*, Juergen Ripperger (1)

(1) University of Fribourg, Biology

NEUROSCIENCE 87

The impact of light on circadian clock and mood related behavior

Olejniczak, Iwona

Iwona Olejniczak (1), Urs Albrecht (1)

(1) University of Fribourg, Biology

NEUROSCIENCE 88

3D-imaging of neuronal layers in retina tissue from wild-type and retinitis pigmentosa model using cryo X-ray nanotomography

Panneels - Paul Scherrer Institut, Valérie

Valerie Panneels (1), Ana Diaz (3), Elisabeth Mueller (2), Manuel Guizar-Sicairos (3), Anne Greet Bittermann (4), Takashi Ishikawa (1), Mirko Holler (3), Christian Grimm (5), Gebhard Schertler (1)*

(1) Paul Scherrer Institut (PSI), BIO

(2) Paul Scherrer Institut (PSI), EM facility

(3) Paul Scherrer Institut (PSI), SLS

(4) ScopEM

(5) University of Zurich, Ophthalmology Center

NEUROSCIENCE 89

Neuroprotective effect of exogenous melatonin on apoptosis of neuroadrennergic neurons in male rats after REM sleep deprivation

Yadolahi, Fariba

Fariba Yadolahi (1), Masoud Mehrpour (2)

(1) Shahidbehshiti University of Medical sciences, Neurorehabilitation

(2) Iran University of Medical sciences, Neurology

PHARMACOLOGY 90

Synthesis, characterization, thermal behaviours and dielectric properties of metallophthalocyanines containing chalcones and their DNA binding studies

Aydin, Gökay

Gökay Aydin (1)*, Furkan Özen (2)*, Arif Baran (1)*

(1) Sakarya University, Department of Chemistry

(2) Akdeniz University, Education Faculty

PHARMACOLOGY 91

Complex synthesis of phthalocyanine from 4-(tert-butyl) phenol derivative; their photophysical properties and biological evolution

Baran, Arif

Arif Baran (1)*, Furkan Özen (2)*, Emel Karakiliç (1)*

(1) Sakarya University, Department of Chemistry

(2) Akdeniz University, Education Faculty

PHARMACOLOGY 92

Immature neutrophil death regulation by intravenous immunoglobulin (IVIg) in Kawasaki Disease (KD)

Graeter, Stefanie

Stefanie Graeter (1), Mirela Kremenovic (1), Ulf Kessler (2), Jane Burns (3), Stephan von Gunten (1)*



(1) University of Bern, Institute of Pharmacology
(2) University Hospital Bern, Department Frau, Kind und Endokrinologie
(3) UCSD School of Medicine, Kawasaki Disease Research Center

PHARMACOLOGY 93

Kisch.ch – the first free accessible pharmacokinetic drug interaction table website containing phases I-III

Sigaroudi, Ali

Ali Sigaroudi (1)*, Hans Vollbrecht (2)

(1) University Hospital Zürich, Clinical Pharmacology and Toxicology
(2) The Capital Market Company Sàrl

PHYSIOLOGY 94

***In vitro* model of Human muscle fiber differentiation derived from human primary myoblasts**

Brunetti, Jessica

Jessica Brunetti (1), Sophie Säuc (1), Stéphane König (2), Laurent Bernheim (2), Maud Frieden (1)*

(1) University of Geneva, Medical Center, Department of Cell Physiology and Metabolism
(2) University of Geneva, Medical Center, Department of Basic Neuroscience

PHYSIOLOGY 95

Gating and permeation properties of ORAI1 channel mutants associated with tubular aggregate myopathy

Bulla Didier, Monica

Monica Bulla Didier (1), Ji-Hee Kim (2)

Gergely Gyimesi (3), Matthias Hediger (3), Nicolas Demaurex (1)*

(1) Faculty of Medicine - University of Geneva, Department of Cell Physiology and Metabolism
(2) Wonju College of Medicine - Yonsei University, Department of Physiology
(3) University of Bern, Institute of Biochemistry and Molecular Medicine

PHYSIOLOGY 96

Dendritic cell migration towards CCL21 requires functional Cx43

Chanson, Marc

Richard Ruez (1), Juan Dubrot (2), Marc Bacchetta (1), Filippo Molica (2), Tatiana Petrova (3), Stéphanie Hugues (2), Brenda Kwak (2), Marc Chanson (1)*

(1) University of Geneva, PHYM
(2) University of Geneva, PATIM
(3) University of Lausanne, Oncology

PHYSIOLOGY 97

Chronic high glucose impairs mitochondrial energy metabolism and glucose-responsiveness in human islet beta-cells

Chareyron, Isabelle

Isabelle Chareyron (1), Jaime Santo Domingo (1), Edward Phelps (2), Claes Wollheim (3), Andreas Wiederkehr (1)*

(1) Nestlé Institute of Health Sciences, Mitochondrial Function
(2) EPF Lausanne, Institute of Bioengineering
(3) University of Geneva, Cell Physiology and Metabolism

PHYSIOLOGY 98

Implication of TRPC1 in SOCE

activated by the long STIM1 isoform

Dyrda, Agnieszka

Agnieszka Dyrda (1), Maud Frieden (1)*

(1) University of Geneva, Physiologie Cellulaire et Métabolisme

PHYSIOLOGY 99

Ephaptic coupling in the heart is potentiated by the distribution of sodium channels in clusters in the intercalated disc

Hichri, Ehrak

Ehrak Hichri (1), Hugues Abriel (2), Jan. P Kucera (1)*

(1) University of Bern, Department of Physiology
(2) University of Bern, Institute of Biochemistry and Molecular Medicine

PHYSIOLOGY 100

Genetic ablation of the newly identified androglobin leads to primary ciliary dyskinesia

Keppner, Anna

Anna Keppner (1), Sara Santambrogio (2), David Hoogewijs (1)*

(1) University of Fribourg, Department of Medicine/Physiology
(2) University of Zurich, Institute of Physiology

PHYSIOLOGY 101

The anchoring protein AKAP2 protects the heart during ischemic stress

Maric, Darko

Darko Maric (1), Miroslav Arambasic (2), Irene Perez López (2), Anna Keppner (1),

Halima Osman (2), Céline Boéchat (2), Dario Diviani (2)*

(1) University of Lausanne; University of Fribourg, Pharmacology and Toxicology; Medicine/Physiology

(2) University of Lausanne, Pharmacology and Toxicology

PHYSIOLOGY 102

Chronic AICAR treatment reverts metabolic changes in cardiomyocytes exposed to free fatty acids

Montessuit, Christophe

Christelle Viglino (1), Christophe Montessuit (1)*

(1) University of Geneva, PATIM

PHYSIOLOGY 103

Phosphorylation regulates LAT4 function in response to the anticipated food intake and dietary protein content



Oparija, Lalita

Lalita Oparija (1), Anuradha Rajendran (1), Adriano Guetg (1), Nadege Poncet (1)

François Verrey (1)*
(1) University of Zurich, Institute of Physiology and Zurich Center for Integrative Human Physiology (ZIHP)



PHYSIOLOGY 104

Role of neutral amino acid transporter LAT4 in mice

Rajendran, Anuradha

Anuradha Rajendran (1), Nadège Poncet (1), Lalita Oparija (1), François Verrey (1)*



(1) University of Zurich, Institute of Physiology, Zurich Center for Integrative Human Physiology

PHYSIOLOGY 105

Mechanisms of paxillin recruitment to integrin-dependent cell-matrix adhesions

Ripamonti, Marta

Marta Ripamonti and Bernhard Wehrle-Haller*, Department of Cell Physiology and Metabolism, Faculty of Medicine, University of Geneva, University Medical Center

PHYSIOLOGY 106

Effects of 2-APB and GSK derivatives in innate immune cell lines

Saul, Stephanie

Stephanie Saul (1), Nicolas Demaurex (1)

(1) Université de Genève, Department of Cell Physiology and Metabolism

PHYSIOLOGY 107

Brain oxygenation in preterm neonates measured with a novel NIRS oximeter: Dependence on age, Apgar score, systemic and haematological parameters

Scholkmann, Felix

Felix Scholkmann (1), Kleiser Stefan (1), Daniel Ostojic (1), Helene Isler (1), Dirk Bassler (1), Martin Wolf (1), Tanja Karen (1)*

(1) University Hospital Zurich, Department of Neonatology

PHYSIOLOGY 108

Reducing NETosis by targeting Pannexin1 channels

Sofoluwe, Aderonke

Aderonke Sofoluwe (1), Filippo Molica (2), Adrien Fischer (3), Marc Chanson (1)*

(1) University of Geneva, Departments of Paediatrics and Physiology and Metabolism
(2) University of Geneva, Department of Pathology and Immunology
(3) University of Geneva, Genomic Research Laboratory

PROTEOMICS 109

Proteolytic landscape in stressed cells

Conde Rubio, Maria Del Carmen

Maria del Carmen Conde Rubio (1), Christian Widmann (1)

(1) University of Lausanne, Physiology

PROTEOMICS 110

Measuring protein functional states in central carbon metabolism using a structural proteomics approach

Hauser, Thomas

Thomas Hauser (1), Paola Picotti (1)*

(1) ETH Zurich, Biology

PROTEOMICS 111

Characterization of epigenetic inhibitors by histone epi-proteomics technology

Mathis, Nicolas

Marcel Bühler (1), Nicolas Mathis (1), Daniel Schirmacher (2),

Jahnvi Bhaskaran (1), Tobias Weiss (3),
Fangfei Zhang (2), Ruedi Aebersold (1)*,
Christian Feller (1)*

(1) ETH Zurich, Biology
(2) ETH Zurich, Biosystems Science and
Engineering
(3) University Hospital Zurich, Neuro-
oncology

PROTEOMICS 112

Host proteome modulation upon *Mycobacterium tuberculosis* infections

Nicod, Charlotte

Charlotte Nicod (1), Johannes Nemeth (2),
Ben Collins (1)*

(1) ETH Zürich, Institute of Molecular
Systems Biology
(2) Center for Infectious Disease Research,
Seattle

PROTEOMICS 113

An integrative approach to identify the entire protein coding potential of prokaryotic genomes by proteogenomics

Varadarajan, Adithi

Adithi Varadarajan (1), Ulrich Omasits (1),
Michael Schmid (1), Sandra Götze (2), Beat
Christen (2), Bernd Wollscheid (2),
Christian Ahrens (1)*

(1) Agroscope & SIB Swiss Institute of
Bioinformatics, Molecular Diagnostics,
Genomics and Bioinformatics, Wädenswil
(2) Institute of Molecular Systems Biology,
Department of Health Sciences and
Technology, ETH Zurich

PROTEOMICS 114

A computational method for analyzing protein modification

patterns applied to the histone sub-proteome

Zhang, Fangfei

Fangfei Zhang (1), Michael Ewing (1),
William S Noble (2)*, Ruedi Aebersold
(1)*, Christian Feller (1)*

(1) ETH Zurich, Institute of Molecular
Systems Biology
(2) University of Washington, Department
of Genome Science

STEM CELLS 115

Specification of hematopoietic stem cell fate via modulation of mitochondrial activity

Girotra, Mukul

STRUCTURAL BIOLOGY 116

Inherent property of phenylalanine to cause hemolysis and to drive protein aggregation has a direct relevance to phenylketonuria

Anand, Bibin

Bibin Anand, Indian Institute of
Technology, Jodhpur, Bioscience and
Bioengineering

STRUCTURAL BIOLOGY 117

How the voltage-sensor domain of a potassium channel responds to membrane electrostatic potential fluctuations

Bignucolo, Olivier

Olivier Bignucolo (1), Simon Bernèche (1)*

(1) University of Basel, Biozentrum



SYNTHETIC BIOLOGY 118

Mapping novel and orphan reactions to protein sequences for systems and synthetic biology

Mohamamdi Peyhani, Homa

Homa Mohammadi Peyhani (1), Noushin Hadadi (1), Vassily Hatzimanikatis (1)*

(1) Swiss Federal Institute of Technology (EPFL), Laboratory of Computational Systems Biotechnology (LCSB)

SYNTHETIC BIOLOGY 119

Optogenetic control of inflammasome assembly and cell death

Shkarina, Kateryna

Kateryna Shkarina (1), Petr Broz (1)*

(1) University of Lausanne, Department of Biochemistry

SYSTEMS BIOLOGY 120

Logical modeling for cardiovascular diseases therapeutic targets identification

Bekkar, Amel

Amel Bekkar (1), Julien Dorier (1), Isaac Crespo (1), Cristina Casal (2), Anne Estreicher (2), Anne Niknejad (1), Alan Bridge (2), Ioannis Xenarios (1,2)*

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(2) Swiss Institute of Bioinformatics SIB, Swiss-Prot

SYSTEMS BIOLOGY 121

Systems pharmacology dissection of cell-specific cholesterol

regulation mechanisms reveals large pharmacodynamic variability

Blattmann, Peter

Peter Blattmann (1), David Henriques (2), Michael Zimmermann(1), Fabian Frommelt (1), Uwe Sauer (1), Julio Saez-Rodriguez (3), Ruedi Aebersold (1)*

(1) ETH Zürich, Department of Biology

(2) Spanish Council for Scientific Research, Instituto de Investigaciones Marinas

(3) RWTH-Aachen, Joint Research Centre for Computational Biomedicine

SYSTEMS BIOLOGY 122

Identifying and targeting key cellular mechanisms for proliferation in Plasmodium parasites: A combined experimental and computational strategy

Chiappino-Pepe, Anush

Anush Chiappino-Pepe (1), Ellen Bushell (2), Rebecca Limenitakis (3), Julian Rayner (2), Volker Heussler (3), Oliver Billker (2), Vassily Hatzimanikatis (1)*

(1) Swiss Federal Institute of Technology Lausanne (EPFL), Laboratory of Computational Systems Biotechnology

(2) Wellcome Trust Sanger Institute, Rodent models of malaria

(3) University of Bern, Institute of Cell Biology

SYSTEMS BIOLOGY 123

Use of the Rhea reaction resource in UniProtKB : The next step in metabolism annotation

Coudert, Elisabeth

Elisabeth Coudert (1), Anne Morgat (1), Kristian B. Axelsen (1), Sebastien Gehant (1), Edouard de Castro (1),

Thierry Lombardot (1), Jerven Bolleman (1), Sylvain Poux (1), Nicole Redaschi (1), Ioannis Xenarios (1), Alan Bridge (1)*

(1) SIB - Swiss Institute of Bioinformatics, Swiss-Prot group

SYSTEMS BIOLOGY 124

Development of histone epi-proteomics technology and its application to identify regulatory principles of chromatin structure and function

Feller, Christian

Christian Feller (1), Fangfei Zhang (1), David Reuss (2), Ce Zhang (3), Tobias Weiss (4), Simran Aulakh (1), Ruedi Aebersold (1)*

(1) ETH Zurich, Biology

(2) University of Heidelberg, Pathology

(3) ETH Zurich, Computer Science

(4) University Hospital Zurich, Neurooncology

SYSTEMS BIOLOGY 125

The glycomic atlas of human antibodies in health and disease

Frias Boligan, Kayluz

Kayluz Frias Boligan (1), Christoph Schneider (1), Peter Jandus (2), David F. Smith (3), Bodo Grimbacher (4), Camilla Jandus (5), Mai M. Abdelhafez (1), Alain Despont (6), Dagmar Simon (7), Hans-Uwe Simon (1), Robert Rieben (6), Nicolai Bovin (8), Richard D. Cummings (9), Stephan von Gunten (1)*

(1) Institute of Pharmacology, University of Bern

(2) Division of Clinical Immunology and Allergy, Department of Medical Specialties, University Hospital and Faculty of Medicine, Genève, Switzerland

(3) Emory Comprehensive Glycomics Core, Department of Biochemistry, Emory University School of Medicine, Atlanta, GA, USA

(4) Center for Chronic Immunodeficiency (CCI), Medical Center, Faculty of Medicine, University of Freiburg, Freiburg, Germany

(5) Translational tumor immunology group, Department of Fundamental Oncology, University of Lausanne, Lausanne, Switzerland

(6) Department for BioMedical Research (DBMR), University of Bern

(7) Department of Dermatology, Inselspital, Bern University Hospital, University of Bern

(8) Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Science, Moscow, Russian Federation

(9) Department of Surgery, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, Massachusetts, USA

SYSTEMS BIOLOGY 126

Kinetic analysis on a reduced genome-scale model of Plasmodium falciparum reveals unknown drug action mechanisms and novel antimalarial strategies

Gordon-Lennox, Thomas

Thomas Gordon-Lennox (1), Anush Chiappino-Pepe (1), Georgios Fengos (1), Vassily Hatzimanikatis (1)*

(1) Ecole Polytechnique Fédérale de Lausanne (EPFL), Laboratory of Computational Systems Biotechnology

SYSTEMS BIOLOGY 127

Genome scale metabolic models for systematically linking variation in gene expression and metabolomics data with the observed metabolic physiology

Hadadi, Noushin

Noushin Hadadi (1), Anush Chiappino (2), Vikash Pandey (2), Marian Morales (1), Vladimir Sentchilo (1), Vassily Hatzimanikatis (2), Jan Roelof van der Meer (1)*

(1) Unil, Department of Fundamental Microbiology
(2) EPFL, Laboratory of Computational Systems Biotechnology

SYSTEMS BIOLOGY 128**Exploring chemodiversity in metabolism towards the selective integration of chemistry into biology****Hafner, Jasmin**

Jasmin Hafner (1), Homa Mohammadi Peyhani (1), Noushin Hadadi (1), Vassily Hatzimanikatis(1)*

(1) EPF Lausanne

SYSTEMS BIOLOGY 129**Mycobacteria-Dictyostelium RNAseq reveals transcriptional pathways essential during the infection course****Hanna, Nabil**

Nabil Hanna (1), Frédéric Burdet (2), Astrid Melotti (3), Marco Pagni (2), Pierre Cosson (3), Thierry Soldati (1)*

(1) University of Geneva, Department of Biochemistry
(2) Swiss Institute of Bioinformatics, Vital-IT
(3) University of Geneva, Department of Cell Physiology and Metabolism

SYSTEMS BIOLOGY 130**An integrated systems genetics and data-management approach to****sleep regulation****Jan, Maxime**

Maxime Jan (1), Shanaz Diessler (2), Mark Ibberson (3), Lou Götz (3), Marital Sankar (3), Robin Liechti (3), Paul Franken (2)*, Ioannis Xenarios (3)*

(1) SIB Swiss Institute of Bioinformatics, Vital-IT
(2) University of Lausanne, CIG Center for Integrative Genomics
(3) SIB Swiss Institute of Bioinformatics, Vital-IT

SYSTEMS BIOLOGY 131**Visualizing cellular heterogeneity by quantifying real-time MAPKs activity in live single cells with novel fluorescent biosensors****Ma, Min**

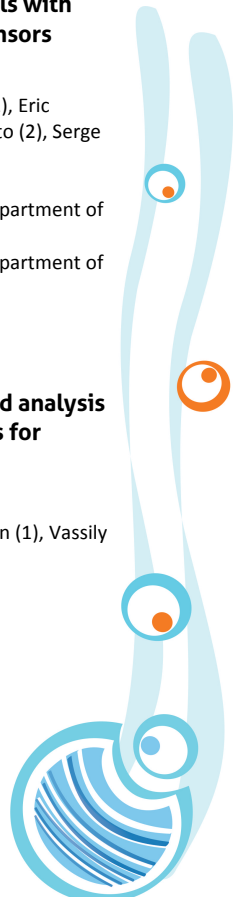
Min Ma (1), Pino Bordignon (2), Eric Durandau (1), Gian-Paolo Dotto (2), Serge Pelet (1)*

(1) University of Lausanne, Department of Fundamental Microbiology
(2) University of Lausanne, Department of Biochemistry

SYSTEMS BIOLOGY 132**Systematic reduction and analysis of genome-scale models for human metabolism****Masid Barcon, Maria**

Maria Masid (1), Meriç Ataman (1), Vassily Hatzimanikatis (1)*

(1) EPF Lausanne



SYSTEMS BIOLOGY 133

Functional mapping of yeast genomes by saturated transposition

Michel, Agnes

Agnes Michel (1), Riko Hatakeyama (2), Philipp Kimmig (1), Meret Arter (1), Matthias Peter (1), Joao Matos (1), Claudio De Virgilio (2), Benoît Kornmann (1)*

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(2) University of Fribourg, Department of Biology

SYSTEMS BIOLOGY 134

HBx: Hepatitis B Virus Swiss Army knife for survival

Milani, Emanuela

Emanuela Milani (1), Chem Bingqian (2), Scott Balsitis (3), Simon Fletcher (3), Stephan Urban (2), Bernd Wollscheid (1)*

(1) Institute of Molecular Systems Biology, Department of Health Sciences and Technology, ETH Zurich
(2) University Clinic Heidelberg, Hepatitis B Research group, Heidelberg, Germany
(3) Gilead, San Francisco, USA

SYSTEMS BIOLOGY 135

Rhea, an expert curated resource of biochemical reactions for enzyme annotation and genome-scale metabolic modeling

Morgat, Anne

Anne Morgat (1), Thierry Lombardot (1), Kristian B. Axelsen (1), Lucila Aimò (1), Anne Niknejad (1), Nevila Hyka-Nouspikel (1), Alex Ignatchenko (1), Elisabeth Coudert (1), Nicole Redaschi (1), Ioannis Xenarios (1), Alan Bridge (1)*

(1) SIB - Swiss Institute of Bioinformatics, Swiss-Prot group

SYSTEMS BIOLOGY 136

An integrative approach to analysis of omics data and condition-specific metabolic networks

Pagni, Marco

Van Du T. Tran (1), Sébastien Moretti (1), Alix T. Coste (2), Sara Amorim-Vaz (2), Dominique Sanglard (2), Marco Pagni (1)*

(1) SIB Swiss Institute of Bioinformatics, Vital-IT group
(2) University Hospital Lausanne and University Hospital Center, Institute of Microbiology

SYSTEMS BIOLOGY 137

A map of metabolite-proteins interactions on a system-wide scale

Piazza, Ilaria

Ilaria Piazza (1), Paola Picotti (1)*
(1) ETH Zurich, Molecular Systems Biology

SYSTEMS BIOLOGY 138

The mechanisms of gene regulatory networks constrain evolution: A lesson from synthetic stripe-forming circuits

Schaerli, Yolanda

Yolanda Schaerli (1), Alba Jimenez (2), José Duarte (3), Ljiljana Mihajlovic (1), Julien Renggli (4), Mark Isalan (5), James Sharpe (2), Andreas Wagner (3)

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(2) Centre for Genomic Regulation (CRG), European Molecular Biology Laboratory-CRG Systems Biology Program

(3) University of Zurich, Department of Evolutionary Biology and Environmental Studies
(4) Independent Researcher
(5) Imperial College London, Department of Life Sciences

SYSTEMS BIOLOGY 139

Input-output relationships underlying transcriptional dynamics

Tidin, Onur

Onur Tidin (1), Felix Naef (1), David Suter (1)

(1) Institute of Bioengineering, EPF Lausanne

SYSTEMS BIOLOGY 140

Discovery, evaluation and analysis of novel pathways for production of five methyl ethyl ketone precursors

Tokic, Milenko

Milenko Tokic (1), Noushin Hadadi (1), Meric Ataman (1), Ljubisa Miskovic (1), Vassily Hatzimankiatis (1)*

(1) EPF Lausanne, LCSB

SYSTEMS BIOLOGY 141

Positional information readout in Ca²⁺ signaling

Wasnik, Vaibhav

Vaibhav Wasnik (1), Karsten Kruse (1), Peter Lipp (2)

(1) University of Geneva, Department of Biochemistry

(2) University of Saarland, Institute for Molecular Cell Biology

SYSTEMS BIOLOGY 142

Single-cell monitoring of transcription dynamics uncovers a transcriptional memory in the HOG pathway

Wosika, Victoria

Victoria Wosika (1), Serge Pelet (1)*

(1) University of Lausanne, Department of Fundamental Microbiology

VIROLOGY 143

Ubiquitination-dependent adenovirus capsid disassembly at the nuclear pore complex

Bauer, Michael

Michael Bauer (1), Justin Flatt (2), Urs Greber (1)*

(1) University of Zurich, Institute of Molecular Life Sciences

(2) University of Helsinki, Institute of Biotechnology & Department of Biosciences

VIROLOGY 144

Secondary lymphoid tissue CD56brightNKG2A+ NK cells restrict acute HIV-1 infection via IFN- γ and NKG2D

Kotur, Monika

Monika Kotur (1,2), Isabell Treichler (2), Michael Freeman (3)
David Nadal (2), Jan D. Lünemann (1), Michael Lederman (3), Anna Lünemann (2)*

(1) University of Zürich, Institute of Experimental Immunology, Department of Neuroinflammation

(2) Zürich University Children's Hospital, Experimental Infectious Diseases and Cancer Research
(3) Case Western Reserve University, Department of Medicine

VIROLOGY 145

The role of sphingolipids and the unfolded protein response in lytic Adenovirus egress from infected cells

Martinez Lopez, Itzel Shantal

Itzel S. Martinez Lopez (1), Vibhu Prasad (1), Urs F. Greber (1)*

(1) University of Zurich, Institute of Molecular Life Sciences

VIROLOGY 146

ViralZone: updates on host-virus interaction resources

Masson, Patrick

Patrick Masson (1), Chantal Hulo (1), Edouard De Castro (1), Nicole Redaschi (1), Alan Bridge (1), Ioannis Xenarios (1,2), Philippe Le Mercier (1)*

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(2) Swiss Institute of Bioinformatics, Vital-IT group

VIROLOGY 147

Phosphoproteomic-based kinase profiling early in influenza virus infection identifies GRK2 as novel antiviral drug target

Stertz, Silke

Emilio Yáñez (1), Maria Pamela Dobay (2), Soner Yıldız (3), Simon Schading (1), Umut Karakus (1), Annika Hunziker (1), Peter Gehrig (4), Ronald Dijkman (5), Mirco Schmolke (3), Silke Stertz (1)*

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(3) University of Geneva, Department of Microbiology and Molecular Medicine

(4) University of Zurich/ETH Zurich, Functional Genomics Centre Zurich

(5) University of Bern, Department of Infectious Diseases and Pathobiology

VIROLOGY 148

Heparan sulfate binding is a critical determinant of enterovirus 71 dissemination and pathogenesis in humans

Tseligka, Eirini D.

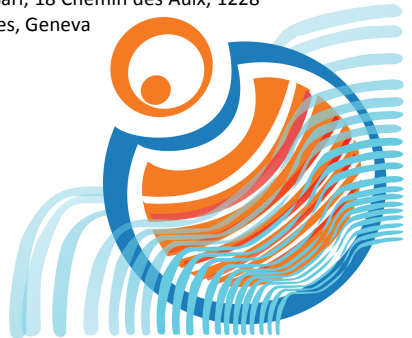
Eirini D. Tseligka (1), Komla Sobo (1), Luc Stoppini (2), Valeria Cagno (1), Isabelle Piuze (1), Pascal Meylan (3), Song Huang (4), Samuel Constant (4) & Caroline Tapparel (1)*

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(2) Tissue Engineering Laboratory, University of Applied Sciences, Western Switzerland

(3) Institute of Microbiology, Centre Hospitalier Universitaire Vaudois, Lausanne

(4) Epithelix Sàrl, 18 Chemin des Aulx, 1228 Plan les Ouates, Geneva



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UPCOMING EVENTS



Cardiovascular Research Meeting 2018

First meeting as LS² Intersection Cardiovascular Biology

15-16 March 2018
University of Fribourg, Campus de Péroilles

KEYNOTE SPEAKERS

Prof. Markus Affolter (Basel, CH)

Prof. Marlin Bennett (Cambridge, UK)

Prof. Ana Maria Gomez (Châtenay-Malabry, F)

Prof. Roberto Mollerini (Créteil, F)

Prof. Philipp Bubenzler (HEG Fribourg/ETHZ/EPFL, CH)

Prof. Julien Bertrand (Geneva, CH)

Dr. Hadi Khalil (Cincinnati, USA)

Dr. Luca Liberale (Schlieren, CH)

Dr. Jean-Sébastien Rougier (Bern, CH)

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www.meetings.ls2.ch/cardiovascular2018



Infos on the new LS² Intersection
Cardiovascular Biology:

[www.ls2.ch/sections/
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19./20. April 2018, Eurotel Montreux

"New Trends in Proteomics" Annual Swiss Proteomics Meeting

PLENARY SPEAKERS

Matthias Selbach
(Max-Delbrück-Center for Molecular Medicine, Berlin, Germany)
"Proteome Dynamics"

Jennifer Van Eyk
(Cedars-Sinai, Los Angeles, CA, USA)
"Medicine and Me: a route to individualized
monitoring and intervention"

FLASH PRESENTATIONS

ORAL PRESENTATIONS

BEST PRESENTATION AWARD

More information at:
meetings.ls2.ch/proteomics-2018

Please register before February 15th, 2018!

Design by Dagmar Bacakova



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organized by LS² & IGE

June 11-12, 2018, Centre Loewenberg, Murten

**What is a patent? How is it obtained?
What are the implications of Life Science patents for
my career perspectives, academic research & society?**

Talks & Workshops

Patents - What is it all about?
(with workshop)

**Protecting IP during commercialization
and in a SME** (with workshop)

Defend your IP rights

Ethical aspects of patenting

**Patenting in Swiss academic
institutions**

**Hands-on introduction to
patent searches
&
Career opportunities
in the patent field**

Prof. Heinz Mueller (Clinical Biochemistry, University of Basel &
Swiss Federal Institute of Intellectual Property, Bern)

Dr. Stefan Emler (SmartGeno, Zug)

Dr. Mark Schweizer (Swiss Federal Patent Court)

Prof. Herbert Zech (Life Sciences Law, University of Basel)

Dr. Anna Deplazes (Institute for Biomedical Ethics and
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Dr. Raluca Flükiger (Swiss University Technology Transfer,
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Save the date

LS²Annual Meeting 2019

Confirmed plenary speakers:

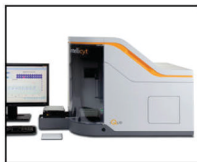
Anna Akhmanova, Utrecht University (NL)
Anne Bertolotti, Cambridge (UK)
Jody Rosenblatt, University of Utah (US)

14-15 February 2019

Campus Irchel
University of Zurich

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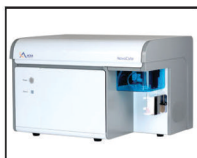
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