

LS²
Life Sciences Switzerland
Physiology

Annual Swiss

Physiology Meeting 2019

Meeting Booklet

3 September 2019 University of Bern

University of Bern | Gertrud-Woker-Str. 5 | 3012 Bern

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This meeting booklet belongs to:

**(Please find space for your notes at the
end of this booklet)**



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

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1. Program

- 09:00 – 10:00 **Registration and coffee**
(Gemeinschaftshörsaal, Gertrud-Woker-Str. 5, UNIBE)
- 10:00 – 10:05 **Welcome and Introductory remarks**
- 10:05 – 10:40 **Keynote lecture I:**
Prof. Marc Donath (University of Basel)
"Inflammation in type 2 diabetes: from physiology to treatment with IL-1 antagonists"
- 10:40 – 10:45 **Break**
- 10:45 – 11:20 **Keynote lecture II:**
Prof. Michaela Kress (Medical University Innsbruck, AT)
"Neuroimmune interactions in the pain pathway"
- 11:20 – 11:25 **Break**
- 11:25 – 11:55 ***Young Investigator Award, Poster competition***
Flash talks from 6 poster finalists (3' presentation + 2' discussion, each)



PhD students

Iwona Olejniczak (University of Fribourg)
"Light your way up to better mood. Can light help us combat mood disorders?"

Katrin Wendrich (University of Fribourg)
"BMAL1 of the neuronal clock in the SCN is necessary to sustain the natural sleep/wake cycle and contributes to sleep homeostasis"

Julia Günter (University of Zurich)

"The role of the deubiquitinase OTUB1 in renal inflammation and fibrosis"

Postdocs

Juliette Simonin (University of Geneva)

"Airway Surface Liquid contribution to airway epithelial protection against Pseudomonas aeruginosa"

Julie Calonne (University of Fribourg)

"Dynamics of fat oxidation from sitting at rest to light exercise in sedentary humans"

Darko Maric (University of Fribourg)

"Novel Epo regulating transcription factors"

11:55 – 12:00

Sponsor Talk: Britta Gerlach (OMNI Life Science)



"Astonishingly simple: how to better understand cellular processes - in real-time"

12:00 – 13:30

Lunch buffet + Coffee + Poster viewing

13:30 – 15:30

Young Investigator Award, Oral Communication

Talks from 8 oral finalists (10' presentation + 5' discussion, each)

PhD students

Olga Rusiecka (University of Geneva)

"Pannexin1 as a potential target for prevention of cardiac ischemia/reperfusion injury"

Francesco Ruberto (University Hospital Lausanne)

"Clipper, a novel long non-coding RNA, regulating cardiomyocyte proliferation and metabolism"

Paulina Stoklosa (University of Bern)

"Role of TRPM4 mediated currents in colorectal cancer cells viability and cell cycle"

Axel Tollance (University of Geneva)

"Determination of the quiescence and activation mechanisms of human muscle reserve cells"

Postdocs

Anna Keppner (University of Fribourg)

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

Mehdi Badaoui (University of Geneva)

"The RhoGTPase activator Vav3 controls Pseudomonas aeruginosa adherence to the Cystic Fibrosis airway epithelium"

Yu Yi (University of Fribourg)

"Arginase-II promotes melanoma migration and adhesion through enhancing hydrogen peroxide production and STAT3 signaling"

Norbert Volkmar (University of Cambridge)

"The sterol-responsive RNF145 E3 ubiquitin ligase mediates the degradation of HMG-CoA reductase together with gp78 and Hrd1"

15:30 – 15:40

Coffee break & Jury session

15:40 – 15:55

LS² Physiology Section Meeting (open to all)



16:00 – 16:15

**Award Ceremony:
YIA Research Prize 2019 of the "Stiftung für
Physiologie"**



16:15

End of meeting

2. Keynote Lectures

«Inflammation in Type 2 Diabetes: from Physiology to Treatment with IL-1 Antagonists»

Marc Donath

University of Basel (CH)

Morphological and therapeutic interventions have uncovered an inflammatory process in patients with type 2 diabetes. This inflammation is due to a pathological activation of the innate immune system by metabolic stress and is partly governed by IL-1 signaling. Initially, the inflammatory response is probably deployed to promote adaptation and regeneration. Indeed we identified a role for IL-1 β and insulin in the regulation of both metabolism and immunity in response to feeding. Yet, as it becomes chronic, activation of auto-inflammatory processes may then become deleterious. It follows that modulation of inflammatory mediators may present as a possible causal therapy. This is supported by clinical studies showing that IL-1 antagonism decreases glycated hemoglobin. Furthermore, IL-1 antagonism prevents cardiovascular diseases, the major complication of diabetes.



«Neuroimmune Interactions in the Pain Pathway»

Michaela Kress

Medical University Innsbruck (AT)

Primary nociceptive afferents are sensors of immune signals which cause nociceptor excitation and sensitisation giving rise to ongoing pain sensation or hypersensitivity to mechanical or thermal stimuli. In particular, the pleiotropic interleukin-6 like cytokines act on nociceptors via neuronally expressed glycoprotein 130 signal transducer (gp130st) subunits and contribute to the generation of heat and mechanical hypersensitivity in mouse models of inflammatory, neuropathic and cancer pain. Cytokines acting via gp130st regulate TRPV1 and TRPA1 ion channels and in addition via neuronal signals impact on neuroinflammatory signatures such as spinal microgliosis and immune cells invading into inflamed tissue or the dorsal root ganglion. Together, our data support the conclusion, that neuroimmune interactions not only regulate nociceptor function but also seems to be critically involved in the control of the immune reaction to injury by sensory neurons.



Talk sponsored by the NCCR TransCure Gender Equality Program



3. Poster numbers *(In alphabetical order)*

Please find the full abstracts from page 12 onwards.

1

Badaoui, Mehdi

UNIGE

Oral presentation competition finalist

The RhoGTPase activator Vav3 controls *Pseudomonas aeruginosa* adherence to the Cystic Fibrosis airway epithelium

2

Boccia, Lavinia

UZH

Amylin's action on the lateral parabrachial nucleus CGRP neurons

3

Borgström, Anna

UNIBE

TRPM4 in cell adhesion, migration and viability of prostate cancer cells

4

Brunetti, Jessica

UNIGE

Store-Operated Calcium Entry: what is its role during in vitro maturation of human primary myofibers?

5

Calonne, Julie

UNIFR

Poster competition finalist

Dynamics of fat oxidation from sitting at rest to light exercise in sedentary humans

6

Dumas, Loïc

UNIFR

Role of fitness in a myocardial infarction event

7

Dyrda, Agnieszka

UNIGE

STIM1 long and STIM1 gate differently TRPC1 during store-operated calcium entry

8

Günter, Julia

UZH

Poster competition finalist

The role of the deubiquitinase OTUB1 in renal inflammation and fibrosis

9

Hannich, J.

UNIGE

1-deoxydihydroceramide causes anoxic death by impairing

chaperonin-mediated protein folding

10

Huang, Ji

UNIFR

Arginase-II promotes age-associated adipose tissue inflammation

11

Keppner, Anna

UNIFR

Oral presentation competition finalist

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

12

Liang, Xiujie

UNIFR

Hypoxia enhances endothelial ICAM-1 protein level through upregulation of arginase-II and mitochondrial oxidative stress

13

Luczkowska, Karolina

UNIGE

About the hepatic contribution of glutamate dehydrogenase in hyperammonemia of the HI/HA syndrome

14

Maric, Darko

UNIFR

Poster competition finalist

Novel Epo regulating transcription factors

15

Olejniczak, Iwona

UNIFR

Poster competition finalist

Light your way up to better mood. Can light help us combat mood disorders?

16

Ruberto, Francesco

CHUV

Oral presentation competition finalist

Clipper, a novel long non-coding RNA, regulating cardiomyocyte proliferation and metabolism

17

Rusiecka, Olga

UNIGE

Oral presentation competition finalist

Pannexin1 as a potential target for prevention of cardiac ischemia/reperfusion injury

18

Simonin, Juliette

UNIGE

Poster competition finalist

Airway Surface Liquid contribution to airway epithelial

protection against *Pseudomonas aeruginosa*

19

Stoklosa, Paulina

UNIBE

Oral presentation competition finalist

Role of TRPM4 mediated currents in colorectal cancer cells viability and cell cycle

20

Teng Wei, Koay

UNIFR

Transcriptional regulation of androglobin and calcium-mediated androglobin cleavage

21

Tollance, Axel

UNIGE

Oral presentation competition finalist

Determination of the quiescence and activation mechanisms of human muscle reserve cells

22

Vdovenko, Daria

UZH

The dual role of IL-23 in autoimmune myocarditis development

23

Volkmar, Norbert

University of Cambridge

Oral presentation competition finalist

The sterol-responsive RNF145 E3 ubiquitin ligase mediates the degradation of HMG-CoA reductase together with gp78 and Hrd1

24

Wendrich, Katrin

UNIFR

Poster competition finalist

BMAL1 of the neuronal clock in the SCN is necessary to sustain the natural sleep/wake cycle and contributes to sleep homeostasis

25

Xiong, Yuyan

UNIFR

Myosin 1b regulates nuclear Akt activation through preventing localization of PTEN in the nucleus

26

Yu, Yi

UNIFR

Oral presentation competition finalist

Arginase-II promotes melanoma migration and adhesion through enhancing hydrogen peroxide production and STAT3 signaling

5. Organizers

Life Sciences Switzerland (LS²)

Elena Cardenal & Carolin von Schoultz (Scientific Officers)

Jacqueline Oberholzer (Executive Secretary)

...and our freelance support:

Dagmar Bocakova (design, bocakova@gmail.com)

Dominique Ritter (administration)

Michael Vögeli (IT)

LS² Section Physiology

Board members :

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Christine Peinelt (Vice president, UNIBE)

Nicolas Demaurex (Past President, UNIGE)

Marc Chanson (UNIGE)

Maud Frieden (UNIGE)



6. Upcoming Physiology Meetings

- **10th Fribourg Obesity Research Conference (FORC-2019) - Pathogenesis of Obesity & CardioMetabolic Diseases:**
September 12, 2019, University of Fribourg, Switzerland
(organizer: Abdul Dulloo)
- **Federation of European Physiological Societies 2019 Meeting:**
September 10-13, 2019, Bologna, Italy
- **98th Meeting of the German Physiological Society – Joint Meeting with the Austrian Physiological Society (APS) and LS2-Physiology Section:** September 30 – October 2, 2019, Ulm, Germany
- **LS2 Annual Meeting 2020:** 13-14 February 2020, University of Zurich, Irchel Campus, Switzerland
 - Including a **Physiology Symposium chaired by Xiu-Fen Ming** (UNIFR)
 - **Registration is open at www.annual-meeting.ls2.ch**
- **LS2-Swiss Physiology Meeting 2020,** September 2020, Fribourg
- **Europhysiology 2020:** September 11-13, 2020, Berlin, Germany
- **39th Congress of the International Union of Physiological Sciences (IUPS):** August 20-24, 2021, Beijing China

Space for notes



Space for notes



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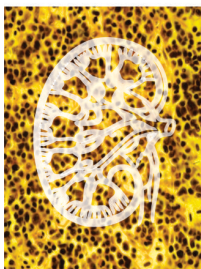
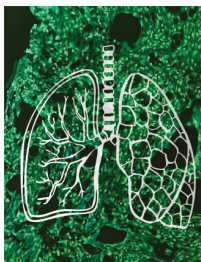
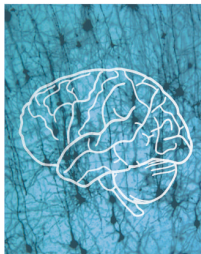
We're very grateful for the generous support of :



Thank you all for your participation!

Feedback to:
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Upcoming with LS²



LS²
Life Sciences Switzerland



Universität
Zürich

13-14 February 2020, Zurich

Life Sciences Switzerland LS2

FEBS3+
Annual
Meeting 2020

Cells, Molecules & Organisms

German Society for Biochemistry and Molecular Biology

Austrian Association of Molecular Life Sciences and Biotechnology

PLENARY SPEAKERS

Valerie Horsley
(Yale University, US)

Alex Schier
(Biozentrum, University of Basel)

Melina Schuh
(Max Planck Institute for Biophysical Chemistry, DE)

Erin Schuman
(Max-Planck-Institute for Brain Research, DE)

Info & Registration
annual-meeting.ls2.ch