
Swiss Physiology Meeting

September 02, 2025

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UNIVERSITÄT
BERN

U113, Uni Muesmatt, Bern

08:45 – 09:20

Registration & Welcome coffee

09:20 – 09:25

Welcome words from Thomas Lutz (University of Zurich),
president of the LS² Section Physiology

09:25 – 10:10

Keynote lecture I

Timo Müller (Helmholtz Diabetes Center, LMU, Munich)

“From novel insights into GIP regulation of energy metabolism to next generation anti-obesity medication”

The pharmacological management of obesity has long been regarded as a “mission impossible” due to limited effectiveness and poor tolerability. However, recent advancements in biochemical engineering have transformed the landscape, leading to the development of peptide-based therapies that simultaneously target receptors for glucagon-like peptide-1 (GLP-1), glucose-dependent insulinotropic polypeptide (GIP), and/or glucagon. These innovative treatments not only achieve unprecedented efficacy in reducing body weight and improving glycemic control in individuals with obesity and type 2 diabetes, but they also hold promise for treating neurodegenerative diseases, fatty liver disease, dyslipidemia, atherosclerosis, and cardiovascular conditions. In my lecture, I will discuss the early development of these therapies, our discovery of GIP’s role in central energy metabolism regulation, and recent insights into the effects of GIP receptor agonism and antagonism. Additionally, I will present new and unpublished data on a novel, highly effective quintuple polygonist designed for the treatment of obesity and type 2 diabetes.

10:10 – 10:50

Young Investigator Award, Poster competition

Flash talks from finalists (5 + 1 min)

10:10 – 10:16

Lipsa Rani Panda (University of Bern)

“Investigating dominant-negative mechanisms in cardiac sodium channel Nav1.5 through mutant–wild-type interactions”

10:16 – 10:22

Anais Bouchat (University of Zurich)

“Peripheral and central metabolic adaptations to short- and long-term high-energy diet exposure in obesity resistant and prone rats”

10:22 – 10:28

Anna Matveeva (University of Bern)

“Gene knockout cell models for investigating steroidogenesis in P450 oxidoreductase deficiency”

10:28 – 10:34

Sophie Ebert (University of Basel)

“A BioID-based approach uncovers the interactome of hexose-6-phosphate dehydrogenase in breast cancer cells and identifies anterior gradient protein 2 as an interacting partner”

10:34 – 10:40

Thomas Forro (University of Bern)

“Disentangling emotional memories in ventral hippocampal circuits”

10:40 – 10:46

Etienne Delangre (University of Geneva)

“Targeting the S100A10-ANXA2 complex restrains fibrosis development in Human Liver Organoids (HLOs) through the inactivation of hepatic stellate cells”

10:50 – 11:15

Coffee break & Industry Exhibition

11:15 – 12:00

Keynote lecture II

Thomas Nevian (University of Bern)

“Aversive signal processing and learning in the anterior cingulate cortex”

The anterior cingulate cortex (ACC) is a prefrontal cortical area that is a hub for the processing of aversive information. It is important for emotional and affective pain aspects of pain; it is implicated in avoidance behavior and aversive memory formation. These functions are ethnologically vital mechanisms for survival, yet the underlying network mechanisms are poorly understood. I will present evidence that aversive nociceptive stimuli are represented by a population code in the ACC and that this instructs behavioral outcomes. Specific afferent inputs to the ACC contribute to decision making in approach/avoidance behavior in conflicting situations, in which reward is competing with pain. Finally, I will discuss a cellular mechanism inducing innate fear learning based on dopaminergic signaling and the activation of astrocytes in the ACC.

12:00 – 13:00

Lunch

13:00 – 14:00

Poster Session & Industry Exhibition

14:00 – 15:15

Young Investigator Award, Oral Communication

Session-I: PhD students (10 + 5 min)

14:00 – 14:15

Enrico Di Iuri (University of Bern)

“Ring-shaped microtissues for cell alignment and improved intracellular Ca²⁺ handling”

14:15 – 14:30

Keila Navarro I Batista (University of Zurich)

“Knockdown of hypothalamic astrocyte ketogenesis impairs energy expenditure and thermogenesis”

14:30 – 14:45	Kit Cheung (University of Zurich) “The role of brown and beige adipose tissue in acute ischemic stroke: mechanisms and clinical implications”
14:45 – 15:00	Océane Derivaz (University of Fribourg) “Exploring the molecular association of androglobin with the cilium-dependent sonic hedgehog pathway”
15:00 – 15:15	Masaba Sayor Baroi (University of Bern) “Stiffness-driven electrical remodeling: exploring mechanosensitive dynamics in hiPSC-CM”
15:15 – 15:35	Coffee break & Industry Exhibition
15:35 – 16:35	Young Investigator Award, <u>Oral Communication</u> Session-II: Postdocs (15 + 5 min)
15:35 – 15:55	Shannon Cox (University of Zurich) “Unravelling pericyte immune response in stroke: a focus on HIF-1”
15:55 – 16:15	Carina Osterhof (University of Fribourg) “Comparative physiology of core HIF-pathway interactions”
16:15 – 16:35	Oleg Mikhajlov (University of Geneva) “Cell adhesion and spreading on fluid membranes through microtubules-dependent mechanotransduction”
16:35 – 17:05	Coffee Break & Industry Exhibition <i>Parallel Jury session for YIA</i>
17:05 – 17:25	LS² Physiology Section Meeting (open to all)
17:25 – 17:35	Award Ceremony: YIA Research Prize 2025 of the "Stiftung für Physiologie" Presented by: Ernst Niggli
17:35 – 17:40	Closing remarks

