# YOUNG SCIENTISTS' SATELLITE MEETING PROGRAM

**WEDNESDAY 15.02.2023**

**12:00 – 12:30** **REGISTRATION**
Lichthof area *Speakers and chairs should load their presentations. Lecture hall G60*

**12:30 – 13:00** **WELCOME COFFEE**

**13:00 – 13:05** **WELCOME ADDRESS**
Lecture hall G60
**Prof. Thomas Lutz** *(Chairman of the LS² AM2023, University of Zurich)*

**Prof. Didier Picard** *(President of the LS², University of Geneva)*

**13:05 – 13:10** **INTRODUCTION FROM CHAIRS**
**Ksenia Kapitanova** *(University of Geneva)*
**Giulia Mazzini** *(University of Zurich)*
**Dr. Magdalena Rausch** *(University Hospital of Zurich)*
**Sigma Pradhan** *(University of Bern)*

**13:10 – 13:45** **KEYNOTE LECTURE**
**Prof. Giles Yeo** *(University of Cambridge, UK)*
*Chairs:* ***Ksenia Kapitanova*** *(University of Geneva) and* ***Giulia Mazzini*** *(University of Zurich)*

*"Is obesity a choice?"*

*It is clear that the cause of obesity is a result of eating more than you burn. It is physics. What is more complex to answer is why some people eat more than others? Differences in our genetic make-up mean some of us are slightly more hungry all the time and so eat more than others. In contrast to the prevailing view, obesity is not a choice. People who are obese are not bad or lazy; rather, they are fighting their biology.*

**13:45 – 14:30** **Scientific Symposium I**
Lecture hall G60
**13:45 - 13:50** *Welcome words from chairs* ***Ksenia Kapitanova*** *(University of Geneva) and* ***Giulia Mazzini*** *(University of Zurich)*

*Selected speakers from abstracts - 10` talks (8`+ 2 Q&A)*
**13:50 - 14:00** **Samarpan Maiti** *(University of Geneva)* ***poster # 01***
*Hsp90 - Hsf1 axis rewires cellular stress response by coupling cell size increase with translation during the process of stress adaptation*

**14:00 - 14:10** **Sudip Das** *(University Hospital Bern)* ***poster # 47***
*"Unravelling the secrets of the deep lung: from microbial ecology, modulation of host immunity to fighting lung infections"*

**14:10 - 14:20** **Lucilla Giammarino** *(University of Bern)* ***poster # 76***

*Sex differences and the role of sex hormones in electrophysiological features in atrial cardiomyocytes and fibroblasts*

**14:20 - 14:30** **Peter Methys Degen** *(University of Bern)* ***poster # 11***
*Investigating the replicability of RNA-Seq differential expression results*

**14:30 – 15:00 COFFEE BREAK**

**15:00 – 15:25 PRIX SCHLÄFLI 2022 AWARD LECTURE**
Lecture hall G60
**Dr. Anna-Katharina Pfitzner** *(University of Geneva)*

*Introduced by* ***Prof. Carmen Faso (University of Bern)*** *and* ***Caroline Reymond*** *(SCNAT)*

*"Membrane remodelling by dynamic ESCRT-III polymers"*

*The endosomal protein complex required for transport-III (ESCRT-III) participates in membrane remodelling processes of essentially all cellular organelles and catalyses membrane fission from within membrane necks in many crucial cellular functions, from cell division to lysosome degradation and autophagy. The simple protein structure shared by all ESCRT-III subunits can assemble into a large variety of filament shapes, however understanding of how these filaments achieve membrane remodelling and fission is limited. We characterized a sequential polymerization of ESCRT-III subunits that, driven by a continuous subunit-turnover powered by the ATPase Vps4, induces membrane deformation and fission. During this process, the exchange of subunits induces first a tilt in the polymer-membrane interface, which triggers transition from flat spiral polymers to helical filaments to drive the formation of membrane protrusions and ends with the formation of a highly constricted co-polymer that we show is competent to promote fission when bound on the inside of membrane necks. Overall, our results suggest a mechanism of gradual changes in ESCRT-III filament structure and mechanical properties via exchange of the filament subunits to drive ESCRT-III membrane remodelling activity.*

**15:25 – 16:10 Scientific Symposium II**
Lecture hall G60

**15:25 - 15:30** *Welcome words from chairs* ***Ksenia Kapitanova*** *(University of Geneva) and* ***Giulia Mazzini*** *(University of Zurich)*

*Selected speakers from abstracts - 10` talks (8`+ 2 Q&A)*

**15:30 - 15:40** **Theodora Chalatsi** *(University of Lausanne)* ***poster # 5***
*Autophagy in parvalbumin interneurons is required for inhibitory transmission and memory via regulation of synaptic proteostasis*

**15:40-15:50** **Cathy Marulli** *(ETH Zurich)* ***poster # 84***
*Combining structural proteomics workflows to understand how the proteome structurally and functionally adapts to perturbations*

**15:50-16:00** **Aleksandra Jejina** *(University of Bern)* ***poster # 57***
*The two adaptors of microtubule motor proteins BicDR and BicD are functionally redundant and essential for embryo development*

**16:00-16:10** **Timo Rey** *(Cambridge University)* ***poster # 62***
*mtFociCounter: A simple open-source solution for reproducible quantitative single-cell analysis of mitochondrial nucleoids and other foci.*

**16:10 – 16:40** **COFFEE BREAK**

**16:40 – 17:40** **CAREER PANEL DISCUSSION**
Lecture hall G60
**"Collaboration vs Competition: To Share or Not to Share? Are We Better Together?!**
*Chairs:* ***Dr. Magdalena Rausch*** *(University Hospital of Zurich) and* ***Sigma Pradhan*** *(University of Bern)*

*Panelists:*
**Prof. Giles Yeo** *(Professor and Scientific Director, University of Cambridge, UK)*
**Dr. Sophia L. Samodelov** *(TransBioLine Project Coordinator, University of Zürich)*

**Dr. Simon Breitler** *(Co-Founder, EraCal Therapeutics)*
**Dr. Christian Tidona** *(Founder and Managing Director, BioMed X Institute in Heidelberg, DE)*
**Prof. Heinz Müller** *(Patent Expert in Life Sciences, University of Basel / Former Swiss Federal Institute of Intellectual Property (IPI))*

**17:40 – 17:45** **Closing Remarks**

**17:45 – 19:00** **MEET & GREAT APÉRO WITH SPEAKERS**

## Detailed program

## DAY ONE

**THURSDAY 16.02.2023**

**08:00 – 09:00** **REGISTRATION, WELCOME COFFEE**
Lichthof area
*Speakers and chairs of the morning sessions should load their presentations. Lecture hall G45*

**09:00 – 09:10** **WELCOME ADDRESS**
Lecture hall G45
**Prof. Thomas Lutz** *(Chairman of the LS² AM2023, University of Zurich)*

**Prof. Didier Picard** *(President of the LS², University of Geneva)*

**09:10 – 09:45** **PLENARY LECTURE I: KEYNOTE**
Lecture hall G45
**Prof. Richard B. Simerly** *(Vanderbilt University School of Medicine, US)*

*Chair:* ***Prof. Thomas Lutz*** *(Chairman of the LS2 AM2023, University of Zurich)*

*"Developmental Neurobiology of Neural Circuits Controlling Feeding Behavior"*

*Hunger is a basic survival state that shapes much of the activities in the living world. As in other goal directed behaviors, food intake involves decisions resulting from neural integration of signals from the external environment (e.g. sight, taste, smell) and interosensory information that signals internal state to the brain. Interosensory information is conveyed to key circuit nodes responsible for goal directed behaviors by a complex system of neural connections, and the activity of these pathways has a significant impact on prioritization of external cues and adaptive responses. Hypothalamic neural networks maintain energy homeostasis by coordinating endocrine signals with behavioral and autonomic functions to ensure that behaviors and physiological responses remain in tune with environmental demands. Because the architecture of neural circuits determines how they function, a comprehensive understanding of how neural systems responsible for neuroendocrine integration are organized is essential, and we are working to determine how developmental events impact their construction and functional properties. By evaluating the impact of early hormonal and nutritional challenges on the brain wide organization of these essential neural systems, and by profiling neuronal responses to varied interosensory stimuli in vivo, we are gaining insight into neurobiological mechanisms underlying developmental programming of neuroendocrine integration, within the functional context of feeding behavior.*

**09:45 – 10:15 PLENARY LECTURE II: LELIO ORCI AWARD 2022**

**Prof. Susan M. Gasser** *(Friedrich Miescher Institute / University of Basel)*
*Introductory words by Prof.* ***Pierre Cosson*** *(University of Geneva)*

*"How chromatin shapes the genome"*

*Segregation of genomic regions into accessible euchromatin and inaccessible heterochromatin is essential for temporal and tissue-specific gene transcription. In C. elegans, the SETDB1 homolog MET-2 promotes heterochromatic silencing of satellite repeats, transposable elements and tissue-specific genes, by promoting the demethylation of histone H3 lysine 9. The segregation of heterochromatin from euchromatin helps maintain tissue integrity by restricting gene expression and stabilizing the genome. Animals lacking the H3K9 HMT show temperature-dependent phenotypes including a loss of fertility, developmental delay, and shortened lifespan. MET-2's ability to preserve heterochromatin repression coincides with concentration in nuclear foci through physical interaction with the intrinsically disordered protein LIN-65. These foci have a second, non-catalytic function that contributes to gene repression to a limited extent. Catalytically deficient MET-2 was sufficient to reduce H3K9 and H3K27 acetylation at a subset of promoters and enhancers, and to restore fertility to a met-2 strain. We suggest that germline integrity stems in part from an appropriate organization of heterochromatic vs euchromatic domains.*

**10:15 – 10:45** **COFFEE BREAK & INDUSTRY EXHIBITION**

**10:45 – 12:35** **Special Plenary Session**
Lecture hall G45
**"PIs of Tomorrow - The Future of Swiss Research" Competition Final**

*Finalists:*
**Dr. Ronan Kapetanovic** *(Friedrich Miescher Institute for Biomedical Research)* **poster # 45**
*" "OutZincking" Bacteria - Deciphering the role of metal ions in the host-pathogen interactions"*

**Dr. Rubén D. Manzanedo** *(ETH Zurich)*
*"Forest biodiversity-stability relationships across spatiotemporal scales"*

**Dr. Mario M. Modena** *(ETH Zurich)*
*"In Vitro Platforms for Non-Pharmacological Combination-Therapy Identification"*

**Dr. Bernadette Stolz** *(EPFL / University of Oxford)* **poster # 87**
*"Topology-based biomarkers for the quantification of complexity and heterogeneity in cancer"*

*Chairs:*
**Dr. Lalita Oparija** *(University of Basel)*
**Dr. Maria Constanza Maldifassi** *(University of Bern)*
**Dr. Adam Gosztolai** *(EPFL)*
**Dr. Oksana Iamshanova** *(University of Bern)*

*Jury:*
**Prof. Francois Verrey** *(UZH)*
**Prof. Knut Drescher** *(University of Basel)*
**Prof. Sharona E. Gordon** *(University of Washington School of Medicine, US)*
**Dr. Rolf Siegwolf** *(WSL/PSI)*
**Prof. Stefanie Ranf** *(University of Fribourg)*
**Prof. Miriam Stoeber** *(University of Geneva)*

**12:35 – 14:15** **LUNCH, INDUSTRY EXHIBITION & POSTERS**
*Catering for industry representatives will be open from 12:05*

**Grab your food and visit our booths!!**

**13:20 – 14:45** **Feedback Session PIs of Tomorrow -**
Room Y21 - F70 *For jury, chairs, and finalists only*

**12:45 – 14:15** **MCB Section Board Meeting -**
Room Y23 - G04 *Upon invitation only*

**12:45 – 14:15** **SSEP council meeting**
Room Y22 - F68 *Upon invitation only*

**14:15 – 16:15** **PARALLEL SYMPOSIA SESSION I**

**14:15 – 16:15** **Life on Earth: Coping with Challenges: Mitochondria Biology**
Lecture hall G60
*Organized by the LS² Section Molecular and Cellular Biosciences.*

**14:15 - 14:20** *Welcome words from chairs* ***Prof. Monica Gotta*** *(University of Geneva) and* ***Prof. Suliana Manley*** *(EPFL).*

*Invited speakers*

**14:20 - 14:50** **Dr. Lena Pernas** *(Max Plank Institute, DE)*
*"Mitochondrial Remodeling during Infection"*

**14:50 - 15:20** **Prof. Suliana Manley** *(EPFL)*
*"Biophysical principles underlying the dynamic organization of mitochondria"*

*Selected speakers from abstracts - 15` talks (12`+ 3 Q&A)*

**15:20 - 15:35** **Julius Winter** *(EPF Lausanne)* **poster # 49**
*"Mitochondria move via distinct transport modes"*

**15:35 - 15:50** **Carmen Faso** *(University of Bern)* **poster # 50**
*"A deep dive into Giardia lamblia's unique endocytic organelles"*

**15:50 - 16:05** **Bianca Manuela Berger** *(University of Bern)* **poster # 53**
*"Organization of Mitochondrial Gene Expression in Trypanosoma brucei"*

**16:05 - 16:15** *Closing remarks*

**14:15 – 15:15** **Coping with Hypoxia and High Altitude**
Lecture hall G95
*Organized and chaired by Prof. Max Gassmann (University of Zurich).*

**14:15- 14:20** *Welcome words from chair* ***Prof. Max Gassmann*** *(University of Zurich)*

*Invited speaker*

**14:20 - 14:45** **Prof. Martina Ulrike Muckenthaler - *ONLINE TALK* -** *(University Hospital Heidelberg, DE)*
*"Iron meets Hypoxia"*

*Selected speakers from abstracts - 15` talks (10`+ 5 Q&A)*

**14:45 - 15:00** **Markus Thiersch** *(University of Zurich)* **poster # 19**
*"Erythropoietin receptor regulates tumor mitochondrial biogenesis and cancer cell survival independent of erythropoietin"*

**15:00 - 15:15** **Christian Stockmann** *(University of Zurich)*
*"Oxygen sensing by Innate Lymphoid Cells in the gut"*

**14:15 – 15:15** **Understanding the Complexity of Life: From Data to Insight**
Lecture hall G40
*Organized by the LS² Section Systems Biology*

**14:15 - 14:20** *Welcome words from chairs* ***Prof. Sahand Rahi*** *(EPFL) and* ***Dr. Simon Blanchoud*** *(University of Fribourg)*

*Invited speaker*
**14:20 - 14:45** **Prof. Tanja Kortemme** *(UCSF, US)*
*"The allosteric landscape of a fundamental molecular switch"*

*Selected speaker from abstracts - 10` talks (8`+ 2 Q&A)*
**14:45 - 14:55** **Carlos Pena-Reyes** *(University of Applied Sciences Western Switzerland at Yverdon (HEIG-VD)* **poster # 33**
*"PERPHECT: Deep Generative Methods to Drive Phage Genetic Edition"*

*Invited speaker*
**14:55-15:15** **Dr. Macarena Toll Riera** *(ETH Zurich)*
*"Exploring the limits of thermal tolerance in an Antarctic bacterium"*

**15:15 – 16:15** **New Avenues in Erythropoietin Research and Drug Development**
Lecture hall G95
*Organized by the Swiss Society Experimental Pharmacology (SSEP)*

**15:15 - 15:20** *Welcome words from chairs* ***Prof. Andrea Huwiler*** *(University of Bern) and* ***Dr. Stephan Kellenberger*** *(University of Lausanne)*

*Invited speaker*
**15:20 - 15:45** **Prof. Sina M. Coldewey** *(Jena University Hospital, DE)*
*"The role of erythropoietin in systemic infectious diseases – a translational overview"*

*Selected speakers from abstracts - 15` talks (10`+ 5 Q&A)*
**15:45 - 16:00** **Thomas Knöpfel** *(University of Zurich)* **poster # 71**
*"Reactivation of Epo-producing cells by HIF stabilizers in renal anemia"*

**16:00 - 16:15** **Bisera Stepanovska Tanturovska** *(University of Bern)* **poster # 70**
*"Sphk1 and Sphk2 differentially regulate HIF-2α Stabilization and Erythropoietin Synthesis in Mouse Renal Interstitial Fibroblasts"*

**15:15 – 16:15** **Deepening the Understanding of Biodiversity Through Genome Sequencing and Artificial Intelligence**

Lecture hall G40

*Organized by the LS$^2$ Intersection Bioinformatics.*

**15:15 -15:20** *Welcome words from chair Prof.* ***Katja Bärenfaller*** *(University of Zurich / SIB - Swiss Institute of Bioinformatics)*

*Invited speaker*

**15:20 - 15:45** **Prof. Daniele Silvestro** *(University of Freiburg, CH)*
*"Past and future biodiversity dynamics using AI"*

*Selected speakers from abstracts - 15` talks (10`+ 5 Q&A)*

**15:45 - 16:00** **Cheng Li** *(University of Zurich)* **poster # 40**
*"Association study of genetic variation and spectroscopic imaging variants"*

**16:00 - 16:15** **Robert Waterhouse** *(University of Lausanne)* **poster # 41**
*"Biodiversity Genomics: data production and management systems to catalogue, explore, and monitor the richness of life on Earth"*

**16:15 – 16:45 COFFEE BREAK, INDUSTRY EXHIBITION & POSTERS**

**16:45 – 17:20 PLENARY LECTURE III: KEYNOTE**

Lecture hall G45

**Prof. Sharona E. Gordon** *(University of Washington School of Medicine, US)*

*Chair:* ***Prof. Thomas Lutz*** *(Chairman of the LS2 AM2023, University of Zurich)*

*Real-time traffic: new optical tools for measuring exocytosis and endocytosis applied to TRPV1 ion channels*

The sensitivity of peripheral pain-receptor neurons to noxious thermal and chemical stimuli is tuned by a variety of receptors and second messengers, in part through tuning the sensitivity and number of TRPV1 ion channels that act as receptors for thermal and chemical stimuli. The gain can be decreased, producing desensitization, or increased, producing hyperalgesia. Over the last decade, significant progress has been made in understanding both desensitization and hyperalgesia at the cellular and molecular levels. This talk will focus on the mechanisms regulating plasma membrane density of TRPV1 ion channels. Nerve growth factor released onto sensory neurons during inflammation triggers a signaling cascade that increases the number of TRPV1 ion channels in the neuronal plasma membrane. The increased number of channels make the cell more sensitive to noxious TRPV1 activators. We have recently developed new click chemistry tools to label TRPV1 channels on the cell surface with unprecedented speed and specificity. Together with genetic code expansion to incorporate noncanonical amino acid click substrates into TRVP1 and optogenetic methods to manipulate the nerve growth factor signaling cascade, these tools allow us to dissect the steps of TRPV1 trafficking– or any membrane protein – in living cells in real time.

**17:20 – 18:40 POSTER SESSION & INDUSTRY EXHIBITION**
*(Posters: 17:20 - 18:00 odd numbers, 18:00 - 18:40 even numbers)*

**18:40 – 19:20 APÉRO & INDUSTRY EXHIBITION**

## Detailed program

# DAY TWO

**FRIDAY 17.02.2023**

**08:15 – 09:00 REGISTRATION**
Lichthof area
*Speakers and chairs of the morning sessions should load their presentations. Plenaries in Lecture hall G45. Symposia - in the corresponding lecture halls.*

**09:00 – 09:05 WELCOME ADDRESS**
Lecture hall G45
**Prof. Thomas Lutz** *(Chairman of the LS$^2$ AM2023, University of Zurich)*

**09:05 – 09:40 PLENARY LECTURE IV: EMBO KEYNOTE LECTURE**
Lecture hall G45
**Prof. Lea Sistonen** *(Åbo Akademi University, FI)*

*Chair:* ***Prof. Thomas Lutz*** *(Chairman of the LS2 AM2023, University of Zurich)*

*"Stress-type specific genome-wide transcription programs of genes and enhancers"*

*Cellular stress triggers re-programming of transcription, which is fundamental for the maintenance of protein homeostasis, also called proteostasis, under adverse growth conditions. Stress-induced changes in transcription include induction of cytoprotective genes and repression of genes related to the regulation of the cell cycle, transcription programs, and metabolism. Induction of transcription is mediated through the activation of stress-responsive transcriptions factors that facilitate the release of stalled RNA polymerase II, thereby allowing for transcriptional elongation. Repression of transcription, in turn, involves components that retain RNA polymerase II in a paused state in gene promoters. Moreover, transcription during stress is regulated by a massive activation of enhancers and complex changes in chromatin organization. Heat shock has provided an excellent model to investigate the mechanisms of nascent transcription, but less is known about the transcriptional regulation upon other types of cellular stress. Therefore, we examined re-programming of genes and enhancers in response to two distinct stresses, i.e. oxidative stress and heat shock by combining different genome-wide analyses (PRO-seq and ChIP-seq). This approach allowed determining the target repertoire of specific members of the heat shock factor (HSF) family. We found that HSF1 and HSF2 drive stress-type specific transcription programs and that besides functioning as promoter-binding transcription factors, both HSFs activate genes through enhancers in response to oxidative stress and heat shock. Intriguingly, in contrast to the promoter-bound HSF1, which regulates classical chaperone genes, recruitment of HSF1 to enhancers is required for the induction of genes encoding proteins that reside in the plasma membrane. It is also plausible that the capacity of HSFs to orchestrate transcription via enhancers is not limited to stress responses, since HSFs play important roles also in developmental and pathological processes, such as progression of cancer.*

**09:40 – 10:20** **COFFEE BREAK, INDUSTRY EXHIBITION & POSTERS**

**10:20 - 12:05** **PARALLEL SYMPOSIA SESSION II**

**10:20 - 12:05** **Understanding the Role of Ion Channels and Membrane Transporters in Cardiac and Renal Diseases**

Lecture hall G60

*Organized by the LS$^2$ Section Ion Channels and Membrane Transporters*

**10:20 - 10:25** *Welcome words from chairs* ***Prof. Maud Frieden*** *(University of Geneva) and* ***Prof. Katja Odening*** *(University of Bern)*

*Invited speaker*

**10:25 - 10:50** **Prof. Rose Ellen Dixon** *(University of California Davis, US)*
*"Phospholipid regulation of Cardiac Excitation-Contraction Coupling"*

*Selected speakers from abstracts - 8` talks (6`+ 2 Q&A)*

**10:50 - 10:58** **Varjany Vashanthakumar** *(University of Bern)* **poster # 27**
*"Cardiac electrophysiological consequences of a new knock-in mouse model for TRPM4 channel"*

**10:58 - 11:06** **Julien Louradour** *(University of Bern)* **poster # 24**
*"Arrhythmia or heart failure? –Beneficial APD-shortening effects of DHA-glycine in LQTS are accompanied by detrimental effects on cardiac mechanical function"*

*Industry talk*

**11:06 -11:16** **Fitzwilliam Seibertz** *(University of Göttingen/ The representative of Nanion Technologies GmbH, DE)* **poster # 91**
*"APC and the atria: High performance automated patch clamp of mammalian atrial cardiomyocytes"*

*Invited speaker*

**11:16 - 11:41** **Prof. Eric Feraille** *(University of Geneva)*
*"Mechanism of sodium and chloride retention in nephrotic syndrome"*

*Selected speakers from abstracts - 8` talks (6`+ 2 Q&A)*

**11:41 - 11:49** **Ganesh Pathare** *(University of Zurich)* **poster # 2**
*"Antiaging hormone Klotho derived from renal distal-convolution regulates calcium but not phosphate homeostasis"*

**11:49 - 11:57** **Loann Laubry** *(University of Geneva)* **poster # 79**
*"STIM1 and STIM1L in skeletal muscle: central regulators of calcium circuitry?"*

**11:57 - 12:05** *Closing remarks*

**10:20 - 12:05** **Challenging Blood Flow Conditions in Atherosclerotic Cardiovascular Disease**

Lecture hall G40

*Organized by the LS$^2$ Intersection Cardiovascular Biology*

**10:20 - 10:25** *Welcome words from chairs* ***Prof. Elena Osto*** *(University of Zurich) and* ***Prof. Marie Luce Piallat*** *(University of Geneva)*

*Invited speaker*

**10:25 - 10: 50** **Prof. Paul C. Evans** *(University of Sheffield, UK)*
*"Endothelial responses to mechanical shear stress"*

**10:50 - 11:15** **Prof. Dan Meng - *ONLINE TALK* -** *(Fudan University, CN)*
*"The role of the transcription factor BACH1 in atherosclerosis"*

*Selected speakers from abstracts - 15` talks (10`+ 5 Q&A)*

**11:15 - 11:30** **Duilio Michele Potenza** *(University of Fribourg)* **poster # 26**
*"Arginase II ablation prevents heart remodeling induced by high salt intake"*

**11:30 - 11:45** **Valentina Zollet** *(University of Bern)* **poster # 28**

*"Elevated citrullinated fibrinogen delays fibrinolysis in a porcine model of acute limb ischemia reperfusion injury, possibly contributing to the development of thrombo-inflammatory events"*

**11:45 - 12:00** **Oksana Iamshanova** *(University of Bern)* **poster # 23**
*"Macromolecular complex of the cardiac sodium channel Nav1.5 dimers"*

**12:00 - 12:05** *Closing remarks*

**10:20 - 12:05** **Innate Immunity Across Life Kingdoms**
Lecture hall G95
*Organized by the Department of Plant and Microbial Biology, University of Zurich*

**10:20 - 10:25** *Welcome words from chairs* ***Prof. Cyril Zipfel*** *(University of Zurich) and* ***Prof. Bruno Lemaitre*** *(EPFL)*

*Invited speaker*
**10:25 - 10:50** **Prof. Andrea Ablasser** *(EPFL)*
*"Sensing DNA as a danger signal through the cGAS-STING pathway"*

*Selected speakers from abstracts - 15` talks (10`+ 5 Q&A)*
**10:50 - 11:05** **Léa Bernaleau** *(University of Lausanne)* **poster # 42**
*"Function and regulation of the lupus-associated SLC15A4-TASL complex in TLR-induced immune responses"*

**11:05 - 11:20** **Nino Espinas** *(University of Lausanne)* **poster # 55**
*"SARM1 drives a novel form of cell death in eukaryotic cells"*

**11:20 - 11:35** **Jennifer Keller** *(University Hospital Zurich)* **poster # 58**
*"Cell death-dependent and -independent mechanisms of Interleukin-36 cytokine release in skin inflammation"*

*Invited speaker*
**11:35 - 12:00** **Prof. Stefanie Ranf** *(University of Fribourg, CH)*
*"Bacterial 3-hydroxy fatty acid metabolites activate LORE-mediated immunity in cruciferous plants"*

**12:00 - 12:05** *Closing remarks*

**12:05 – 13:05** **LUNCH & INDUSTRY EXHIBITION**
*Catering for industry representatives will be open from 11:35*
*Speakers and chairs of the afternoon sessions should load their presentations. Penaries in Lecture hall G45. Symposia in the corresponding lecture halls.*

**Grab your food and visit our booths!!**

**12:15 – 13:15** ICMT Section Board Meeting

Room Y42 - J11 *Upon invitation only*

**13:05 – 14:05** **POSTER SESSION**
*(Posters: 13:05-13:35 odd numbers, 13:35-14:05 even numbers)*

**14:05 – 15:50** **PARALLEL SYMPOSIA SESSION III**

**14:05 - 15:50** **Cell Death and Its Consequences**
Lecture hall G60
*Organized by the Department of Immunology (University of Lausanne)*

**14:05 - 14:10** *Welcome words from chairs* ***Prof. Lynn-Wong*** *(University of Zurich) and* ***Prof. Petr Broz*** *(University of Lausanne)*

*Invited speakers*

**14:10 - 14:35** **Prof. Ana J. Garcia Saez** *(University of Cologne, DE)*
*"Illuminating mitochondrial permeabilization in apoptosis"*

**14:35 - 15:00** **Prof. Pascal Meier** *(The Institute of Cancer Research, London, UK)*
*"Regulation of Cell Death and Inflammation"*

*Selected speakers from abstracts - 10` talks (8`+ 2 Q&A)*

**15:00 - 15:10** **Saray Ramos** *(University of Lausanne)*
*"The structural basis for ninjurin-1 mediated plasma membrane rupture in inflammatory cell death"*

**15:10 - 15:20** **Stefanie Rufli** *(University of Zurich)*
*"Identifying a non-caspase dependent cell death mechanism regulated by XIAP"*

**15:20 - 15:30** **Carmen Kalbermatter** *(University of Bern)* **poster # 16**
*"Hexokinase 3 in myeloid malignancies"*

*Selected speaker from abstracts - 15` talks (10`+ 5 Q&A)*

**15:30 - 15:45** **Paolo Armando Gagliardi** *(University of Bern)* **poster # 3**
*"Local and global effects of apoptosis-induced survival mediated by ERK/Akt signaling waves in epithelia"*

**15:45 - 15:50** *Closing remarks*

**14:05 - 15:50** **Canonical and Non-canonical Functions of Autophagy**
Lecture hall G95
*Organized by the LS$^2$ Section Autophagy*

**14:05 - 14:10** *Welcome words from chairs* ***Prof. Julien Puyal*** *(University of Lausanne) and* ***Prof. Vassiliki Nikoletopoulou*** *(University of Lausanne)*

*Invited speaker*

**14:10 - 14:40** **Prof. Claudine Kraft** *(University of Freiburg, DE)*
*"Spatial confinement and avidity drive autophagosome formation"*

*Selected speakers from abstracts - 15` talks (10`+ 5 Q&A)*

**14:40 - 14:55** **Akrivi-Dimitra Daskalaki** *(University of Lausanne)* **poster # 6**
*"Unravelling the role of atg101 in the brain: generation of the first (hypomorph) atg101 knock-in mouse"*

**14:55 - 15:10** **Joel Tuomaala** *(University of Bern)* **poster # 7**
*"Preferential autophagy of biosynthesis proteins balances organismal starvation survival and recovery dynamics"*

*Invited speaker*

**15: 10 - 15:45** **Prof. Ivan Dikic** *(Goethe University Frankfurt / Max Planck Institute for Biophysics, DE)*

*"Endoplasmic reticulum remodeling via ER-phagy pathways"*

**15:45 - 15:50** *Closing remarks*

**14:05 - 15:50** **Single Cell Proteomics: Are We There Yet?**
Lecture hall G40
*Organized by the LS$^2$ Section Proteomics*

**14:05 - 14:10** *Welcome words from chairs* ***Dr. Paolo Nanni*** *(University of Zurich) and* ***Dr. Maria Pavlou*** *( EPFL)*

*Invited speaker*

**14:10 - 14:30** **Dr. Edward Emmott** *(Centre for Proteome Research, University of Liverpool, UK)*
*"Prioritised SCoPE2-based analysis of post-translational modifications at single-cell level"*

**14:30 - 14:50** *Industry talk:*
**Bruker Switzerland AG**
*"On the benefits and challenges of single cell proteomics"*

*Invited speaker*

**14:50 - 15:10** **Prof. Bernd Bodenmiller** *(University of Zurich)*
*"Highly multiplexed imaging of tissues with subcellular resolution by imaging mass cytometry"*

*Selected speakers from abstracts - 10` talks (8`+ 2 Q&A)*

**15:10 - 15:20** **Daniel Gonzalez-Bohorquez** *(University of Zurich)*
*"Low input proteomics to understand cell division history and metabolic disruptions in human forebrain organoids"*

**15:20 - 15:50** **Questions & Round Table Discussion**

**15:50 – 16:10** **COFFEE BREAK, INDUSTRY EXHIBITION & POSTERS**

**16:10 – 16:40 PLENARY LECTURE V: FRIEDRICH MIESCHER AWARD 2023**

**Prof. Barbara Treutlein** *(ETH Zurich)*

*Introductory words by* ***Prof. Daniel Legler*** *(Biotechnology Institute Thurgau at the University of Konstanz)*

*"Understanding brain development and regeneration with single cell technologies"*

*The brain is a highly complex and fascinating organ and we are interested in understanding how cellular heterogeneity emerges during brain development and how brain cells can regenerate upon injury. We are tackling these questions by applying and further developing integrative, multi-modal single-cell technologies.*
*In the first part of my talk, I will present our work on human pluripotent stem cell (PSC) derived organoids that model human brain development in vitro. We generated a single-cell multiomic atlas and developed a novel computational tool to infer a gene regulatory network underlying early human brain organoid development. We then used pooled genetic perturbation with single-cell transcriptome readout to assess transcription factor requirement for cell fate and state regulation in organoid and identified an important role of GLI3 during human telencephalon dorso-ventral patterning. Further, we developed single-cell methodologies to directly track developmental lineages in brain organoids and could identify clonality of brain organoid regions as well as a temporal window of regional fate specification.*
*In the second part of my talk, I will present our work on understanding the organization and regeneration of the telencephalon in the axolotl salamander using single-cell genomics. We first generated a single-cell multiomic atlas of the axolotl telencephalon, identified evolutionary conservation of neuronal cell types and reconstructed trajectories of post-embryonic neurogenesis. We then showed that upon major injury, all neuronal cell types reemerge through regenerative neurogenesis and neuronal projections to other brain regions are re-established. Finally, we identified a regeneration specific state of neural progenitor cells that is characterized by expression of wound healing genes.*
*Together, our work highlights the power of single-cell technologies to understand the gene regulatory logic underlying brain development and*

**16:40 – 17:10 AWARD CEREMONY**

Lecture hall G45

***Prizes:***

*Prix Schläfli 2022 Award*
*Pls of Tomorrow: Jury*
*Pls of Tomorrow: Public*
*Best Poster - SSEP*
*1st Best Poster - Section MCB*
*2nd Best Poster - Section MCB*
*Best Poster - general*
*Best Poster - general*

*1st Best Poster - Bioinfomatics*
*2nd Best Poster - Bioinfomatics*
*Best Poster - Physiology Section*
*Best Poster - Proteomics*
*Best Poster - Cardiovascular Biology*
*Best Poster - ICMT*
*Best Poster Design Award*
*Exhibition Lottery draw*

**17:10 – 17:15 CLOSING REMARKS & ACKNOWLEDGMENTS**

Lecture hall G45

**Prof. Thomas Lutz** *(Chairman of the LS2 AM2023, University of Zurich)*

**Prof. Didier Picard** *(President of the LS2, University of Geneva)*

**Prof. Mario Tschan** *(Vice-President of the LS2, University of Bern)*