



17-19 February 2021, Afternoon Online Meeting

LS<sup>2</sup>  
Life Sciences Switzerland

# LS<sup>2</sup> Annual Meeting 2021

Mechanisms in health, disease and ageing

[annual-meeting.ls2.ch](http://annual-meeting.ls2.ch)

## Wednesday, 17.02.2021

13:00 - 13:10 (CET)	<b>Welcome words</b> <b>Mario Tschan</b> (Chairman of LS <sup>2</sup> AM2021, UNIBE) & <b>Didier Picard</b> (President of LS <sup>2</sup> , UNIGE)
13:10 - 13:50 (CET)	<b>Plenary Lecture I: Dario Valenzano</b> (Max Planck Institute for Biology of Ageing, Cologne, DE) <i>African killifishes shed new light on life history evolution and reveal an important role of the gut microbiota in modulating vertebrate lifespan</i>
13:50 - 14:20 (CET)	<b>Plenary lecture II. Prix Schl�fli Award: Alice Berhin</b> (Universit� Catholique de Louvain - BE) <i>Discovery of the Root Cap Cuticle: Structure and Functions</i> Introduction by <b>Roman Ulm</b> (UNIGE) representative of the Prix Schl�fli committee
14:20 - 14:50 (CET)	<b>Plenary lecture III. Friedrich Miescher Award: two winners</b> <b>Andrea Ablasser</b> (EPFL- CH) <i>Sensing DNA as a danger signal through the cGAS-STING pathway</i> <b>Prisca Liberali</b> (FMI - CH) <i>Symmetry breaking and self-organization in intestinal organoids</i> Introduction by <b>Daniel Legler</b> (BITG) representative of the Friedrich Miescher Award committee
14:50 - 15:00 (CET)	Break
15:00 - 15:05 (CET)	<b>Introductory words from chairs of Young Scientists' e-Symposium</b> <b>No�mie Frezel</b> (UZH), <b>Alexandra Bondaz</b> (UNIGE), <b>Micha�l Bachmann</b> (UNIGE), & <b>Shalu Jhanwar</b> (UNIBAS)
15:05 - 16:05 (CET)	<b>Scientific short talks selected from abstracts</b> <b>Qiutan Yang</b> (Friedrich Miescher Institute - CH) - poster # 16 <i>Cell fate coordinates mechano-osmotic forces in intestinal crypt formation</i> <b>Magdalena Rausch</b> (University of Geneva - CH) - poster # 23 <i>Resistance to Sunitinib in clear cell renal cell carcinoma outsmarted by the optimized multi-drug combination</i> <b>Chiara Borsari</b> (University of Basel -CH) - poster # 33 <i>From Pan to PI3K�-Selective Inhibitors: A Covalent Strategy to Fine-Tune Isoform-Specific Targeting</i> <b>Najma Cherrad</b> (University of Lausanne - CH) - poster # 56 <i>Chemogenetic activation of VGLUT2 neurons in the left nodose ganglion of the vagal nerve suppresses REM sleep in mouse</i> <b>Simona Huwiler</b> (University of Zurich - CH) - poster # 37 <i>Specific lysis of prey peptidoglycan enabling predatory bacterium Bdellovibrio bacteriovorus to exit from its host bacterium</i>
16:05 - 16:50 (CET)	Poster viewing / Industry exhibition

16:50 - 17:20 (CET) **Invited speaker: Lars Dittrich** (maiLab & "Lars und die Welt" - DE)  
*Science Communication - but reasonably*

17:20 - 17:25 (CET) *Transitioning break*

17:25 - 18:25 (CET) **Networking-discussion breakout rooms**

**\*Room 1: Career corner - "A stepping stone for careers in Life Sciences" (*fem* inno program)**  
**Daniela Gunz** (program manager at *feminno* career program), **Gaby Rockman-Partridge** (Rockmann Consulting) & **Carl Emerson** (InsideOut Solutions)

**\*Room 2: Science Communication**  
FameLab finalists: **Gwendolin Schönfeld** (University of Zurich - CH), **Beichen Gao** (D-BSSE Basel - CH) & **Celia Gasselin** ( LabTwin).

**\*Room 3: Start-ups, Entrepreneurship**  
**Vincent Wagner** (Translational Accelerator UNIGE - CH)

**\*Room 4: Academic funding**  
**Beatrice Scherrer** (Head of the UZH Grants Office - CH) & **Martin Bühler** (Research Manager at the UZH Grants Office - CH)

## Thursday, 18.02.2021

13:00 - 13:05 (CET) **Welcome**  
**Chairs of workshop**

13:05 - 14:35 (CET) **Workshop: "Dialogue on Human Genome Editing"**  
Organized by Forum for Genetic Research - SCNAT  
Hosted by **Greta Guarda** (Università della Svizzera Italiana - CH) and moderated by **Anna-Katherina Ehlert** (reach - CH)

14:35 - 15:35 (CET) **Poster viewing / Industry exhibition**

15:35 - 17:20 (CET) **5 Scientific e-Symposia organized by LS<sup>2</sup> sections and partners:**  
iPSC derived cardiomyocytes and cardiac microtissues - **LS<sup>2</sup> Cardiovascular Intersect**  
Precision Medicine and Biomarkers: The Quest for Gold - **LS<sup>2</sup> Bioinformatics Intersect. - SIB**  
Autophagy and Ageing – implications for age-related diseases - **LS<sup>2</sup> Autophagy Section**  
Multiparametric Microscopy in Basic and Translational Research - **LS<sup>2</sup> Microscopy Intersect.**  
Mitochondria in health, disease and ageing - **LS<sup>2</sup> MCB Section**

17:20 - 17:25 (CET) *Transitioning break*

17:25 - 18:05 (CET) **Plenary Lecture IV: Tony Wyss-Coray** (Stanford University, US)  
*Circulatory factors as regulators of aging and brain function*

## Friday, 19.02.2021

**13:00 - 14:50 (CET) Special Plenary Session: Pls of Tomorrow "The Future of Swiss Research"**  
Chaired by: **Shalu Jhanwar** (UNIBAS), **Mehdi Badaoui** (UNIGE), **Eleonora Porcu** (UNIL) & **Myra Chavez-Rosas** (UNIBE)

**Eduardo Martin Moraud** (CHUV Lausanne - CH)

*Closing the loop in neuromodulation therapies : towards personalized treatments after neurological disorders*

**Elisa Araldi** (ETCH Zürich - CH)

*Bridging physiology and big data analysis to rediscover cholesterol biosynthesis*

**Traian Popa** (EPFL - CH)

*Non-invasive modulation of deep brain structures in health and disease*

**Karina Salina** (UZH - CH)

*Tertiary Lymphoid Structures - Immune Outposts on the Cancer Frontier*



**14:50 - 15:20 (CET) Plenary lecture V. Lelio Orci Award: Jean Gruenberg** (UNIGE - CH)

*Mechanisms of multivesicular endosome biogenesis*

Introduction by **Pierre Cosson** (UNIGE), member of the Lelio Orci Award committee

**15:20 - 16:00 (CET)**

**Poster viewing / Industry Exhibition**

**16:00 - 17:45 (CET)**

**5 Scientific e-Symposia organized by LS<sup>2</sup> sections and partners:**

Chemical Biology and Drug Discovery - **DMCCB division of the Swiss Chemical Society**

TOR signaling in health, disease and ageing - **LS<sup>2</sup> MCB Section**

Endocrine interactions - **LS<sup>2</sup> Physiology Section**

System Biology and Molecular Medicine - **LS<sup>2</sup> Systems Biology Section**

Precision Pharmacology: Translating Today's Discoveries into Tomorrow's Therapies - **SSEP**

**17:45 - 17:50 (CET)**

*Transitioning break*

**17:50 - 18:30 (CET) Plenary Lecture VI: Katrien de Bock** (ETH Zurich, CH)

*Metabolic interactions between the endothelium and the muscle*

**18:30 - 18:45 (CET) Closing Remarks & winners announcement**

**Mario Tschan** (Chairman of LS<sup>2</sup> AM2021, UNIBE) & **Didier Picard** (President of LS<sup>2</sup>, UNIGE)

With the generous support from:



LS<sup>2</sup> Annual e-Meeting 2021  
17-19 February 2021 – ONLINE  
[www.annual-meeting.ls2.ch](http://www.annual-meeting.ls2.ch)

## Poster and Exhibition Prizes

**FEBS Letters** Poster Prize given by LS2 MCB Section

**FEBS Letters** Poster Prize given by LS2 Autophagy Section

**SSEP** poster prize

**Department of cell physiology and metabolism from the UNIGE** given by LS2 Physiology section

**MS Wil** poster prize given by LS2 MCB section

**Zeiss** poster prize given by LS<sup>2</sup> Microscopy intersection

**Cells - MDPI** poster prize

1<sup>st</sup> Exhibition prize sponsored by **Vitaris**

2<sup>nd</sup> Exhibition prize sponsored by **Zeiss**

3<sup>rd</sup> Exhibition prize sponsored by **BioConcept**

**FEBS**  
*Letters*



Seeing beyond

## Exhibitors - Virtual Booths



Seeing beyond



17-19 February 2021, Afternoon Online Meeting

LS<sup>2</sup>  
Life Sciences Switzerland

# LS<sup>2</sup> Annual Meeting 2021

Mechanisms in health, disease and ageing

[annual-meeting.ls2.ch](http://annual-meeting.ls2.ch)

## Program of e-Symposia

Thursday, 18. 02. 2021

15:35 - 17:20 (CET)

iPSC derived cardiomyocytes and cardiac microtissues - *LS2 Cardiovascular Intersection*  
Precision Medicine and Biomarkers: The Quest for Gold - *LS2 Bioinformatics-SIB Intersection*  
Autophagy and Ageing – implications for age-related diseases - *LS2 Autophagy Section*  
Multiparametric Microscopy in Basic and Translational Research - *LS2 Microscopy Intersection*  
Mitochondria in health, disease and ageing - *LS2 Molecular & Cellular Biosciences Section*

### iPSC derived Cardiomyocytes and Cardiac Microtissues

*LS2 Intersection: Cardiovascular Biology*

- 15:35 - 15:40 Welcome note by chairs of the symposium  
**Gabriela Kania** (University of Zurich - CH) & **Marie-Noëlle Giraud** (University of Fribourg - CH)
- 15:40 - 16:00 **Christine Mummery** (Leiden University Medical Center, Leiden, The Netherlands)  
*Mechanisms underlying contractile responses of hiPSC-derived cardiomyocytes*
- 16:00 - 16:20 **Christian Zuppinger** (University Hospital Bern - CH)  
*3D cardiac cells culture*
- 16:20 - 16:30 **Sandrine Morel** (University of Geneva - CH) - *Selected from abstracts. Poster # 27*  
*Primary cilia control endothelial permeability by regulating expression and location of junction proteins*
- 16:30 - 16:40 **Olga Rusiecka** (University of Geneva - CH) - *Selected from abstracts . Poster # 28*  
*Deletion of Pannexin1 confers protection against cardiac ischemia-reperfusion injury*
- 16:40 - 17:00 **Przemyslaw Blyszczuk** (University Hospital Zurich - CH)  
*Human cardiac microtissues as a model to study myocardial fibrosis*
- 17:00 - 17:15 Q&A
- 17:15 - 17:20 Closing remarks

## Precision Medicine and Biomarkers: The Quest for Gold

*LS2 Intersection: Bioinformatics - Swiss Institute of Bioinformatics (SIB)*

- 15:35 - 15:40 Welcome note by chairs of the symposium  
**Mark Ibberson** (SIB - CH) & **Alan Bridge** (SIB - CH)
- 15:40 - 16:10 **Ewan Pearson** (University of Dundee - UK)  
*Precision medicine in Diabetes*
- 16:10 - 16:20 **Gema Fuerte Hortigón** (Bucher Biotec AG & Mission Bio Inc) - *Industry talk*  
*High-throughput single-cell DNA-sequencing and protein analysis reveals CRISPR-editing efficiency as well as clonal evolution in cancer*
- 16:20 - 16:30 **David Benz** (Bucher Biotec AG) - *Industry talk*  
*Exosomes as Novel Multicomponent Biomarkers: Challenges and Opportunities*
- 16:30 - 17:00 **María Gomez** (Lund University, Sweden)  
*BEAt-DKD (Biomarker Enterprise to Attack DKD) and the power of public private partnerships in diabetes research*
- 17:00 - 17:15 Q&A
- 17:15 - 17:20 Closing remarks



## Autophagy and Ageing – Implications for Age-Related Diseases

*LS2 Section Autophagy*

*Supported by the Swiss Society for Aging Research (SSFAR)*

- 15:35 - 15:40 Welcome note by chairs of the symposium  
**Alexander Eggel** (University of Bern - CH) & **Jörn Dengjel** (University of Fribourg - CH)
- 15:40 - 16:10 **Katja Simon** (Kennedy Institute of Rheumatology - UK)  
*Autophagy in Immune Senescence*
- 16:10 - 16:15 **Moushumi Das** (University of Bern - CH) - *Selected from abstracts. Poster # 1*  
*Impact of genome folding on C. elegans lifespan*
- 16:15 - 16:25 **Jiongming Lu** (Max Planck Institute for Biology of Ageing - DE) - *Selected from abstracts. Poster #3*  
*Sestrin is a key regulator of stem cell function and lifespan in response to dietary amino acids*
- 16:25 - 16:30 **Nicolas Niklaus** (University of Bern - CH) - *Selected from abstracts. Poster # 7*  
*Oncogene-induced autophagy enhances migration and invasion of breast and prostate cancer cells*
- 16:30 - 16:35 **Sreoshee Rafiq** (University of Bern - CH) - *Selected from abstracts. Poster # 8*  
*Linking lysosomes with chemotherapy resistance in acute myeloid leukemia*
- 16:35 - 17:05 **Linda Partridge** (Max Planck Institute for Biology of Ageing - DE & UCL -UK)  
*Ageing: a gut feeling*
- 17:05 - 17:15 Q&A
- 17:15 - 17:20 Closing remarks



## Multiparametric Microscopy in Basic and Translational Research

LS2 Microscopy Intersection

- 15:35 - 15:40 Welcome note by chairs of the symposium  
**Urs Ziegler** (UZH - CH), **Laure Plantard** (FMI - CH) & **Joanna Delgado Martins** (UZH - CH)
- 15:40 - 16:15 **Lucas Pelkmans** (Department of Molecular Life Sciences, UZH - CH)  
*Cellular state determines the multimodal signaling response of single cell*
- 16:15 - 16:35 **Christian Holz** (Molecular Devices) - *Industry talk*  
*New 3D applications on Molecular Devices intelligent automated imaging solutions*
- 16:35 - 16:45 **Ana Kalichava** (University of Bern - CH) - *Selected from abstracts. Poster #38*  
*Ultrastructure Expansion Microscopy of TAC Protein-complex Arrangement in T. brucei*
- 16:45 - 16:55 **Ilya Lukonin** (Friedrich Miescher Institute - CH) - *Selected from abstracts. Poster #39*  
*Phenotypic landscape of intestinal organoid regeneration*
- 16:55 - 17:15 Q&A
- 17:15 - 17:20 Closing remarks



## Mitochondria in health, disease and ageing

LS2 Molecular & Cellular Biosciences Section

- 15:35 - 15:40 Welcome note by chair of the symposium  
**Torsten Ochsenreiter** (University of Bern- CH)
- 15:40 - 16:05 **Pierre Maechler** (University of Geneva - CH)  
*Short or long mitochondria, a dilemma for glucose homeostasis*
- 16:05 - 16:15 **Timo Rey** (EPF Lausanne - CH) - *Selected from abstract. Poster # 50*  
*Mitochondrial transcription is confined (Organisation of mitochondrial transcripts and fission sites)*
- 16:15 - 16:25 **Miriam Valera-Alberni** (EPF Lausanne - CH) - *Selected from abstract. Poster #54*  
*Crosstalk between Drp1 phosphorylations during mitochondrial remodeling and their impact on metabolic adaptation.*
- 16:25 - 16:45 **Stephen Helliwell** (Rejuveron Life Sciences AG, Zürich - CH) - *Industry talk*  
*Ageing and mitochondria*
- 16:45 - 17:10 **Ana Wredenberg** (Karolinska Institut, Sweden)  
*The role of mitochondrial SAM in health and disease*
- 17:10 - 17:15 Q&A
- 17:15 - 17:20 Closing remarks



17-19 February 2021, Afternoon Online Meeting

LS<sup>2</sup>  
Life Sciences Switzerland



# LS<sup>2</sup> Annual Meeting 2021

Mechanisms in health, disease and ageing

[annual-meeting.ls2.ch](http://annual-meeting.ls2.ch)

## Program of e-Symposia

Friday, 19. 02. 2021

16:00 - 17:45 (CET)

Chemical Biology and Drug Discovery - *DMCCB division of the Swiss Chemical Society*

TOR signaling in health, disease and ageing - *LS2 Molecular & Cellular Biosciences Section*

Endocrine interactions - *LS2 Physiology Section*

System Biology and Molecular Medicine - *LS2 Systems Biology Section*

Precision Pharmacology: Translating Today's Discoveries into Tomorrow's Therapies - *SSEP*

### Chemical Biology and Drug Discovery

*DMCCB division of the Swiss Chemical Society*

- |               |  |
|---------------|--|
| 16:00 - 16:05 | Welcome note by chairs of the symposium<br><b>Christian Heinis</b> (EPFL - CH)   |
| 16:05 - 16:35 | <b>Nina Hartrampf</b> (UZH - CH)<br><i>Flow-based Synthesis of Chemically Modified Peptides and Proteins</i>   |
| 16:35 - 16:55 | <b>Vanessa Pierroz</b> (Promega) - <i>Industry talk</i><br><i>Promega's 3-in-one assay to study autophagy: Autophagy LC3 HiBiT Reporter Assay System</i>   |
| 16:55 - 17:05 | <b>Lorenzo Lafranchi</b> (Karolinska Institutet - SE) - <i>Selected from abstracts. Poster #31</i><br><i>Universal Single-Residue Terminal Labels for Fluorescent Live Cell Imaging of Microproteins</i> |
| 17:05 - 17:35 | <b>Stefan Knapp</b> (Johann Wolfgang Goethe University Frankfurt am Main - DE)<br><i>Targeting protein scaffolding function in kinases</i>   |
| 17:35 - 17:45 | Q&A and closing remarks  |





## TOR signaling in Health, Disease and Ageing

LS2 Molecular & Cellular Biosciences Section

- 16:00 - 16:05 Welcome note by chairs of the symposium  
**Robbie Joséph Loewith** (UNIGE - CH) & **Claudio De Virgilio** (UNIFR - CH)
- 16:05 - 16:30 **Estela Jacinto** (Rutgers University - US)  
*mTORC2 and the hexosamine pathway in T cell development and lymphoma*
- 16:30 - 16:55 **Matthias Wymann** (University of Basel - CH) - *Sponsored talk*  
*Targeting the phosphoinositide 3-kinase / target of rapamycin pathway in cancer, immunity, metabolism and neurodegenerative disease*
- 16:55 - 17:05 **Chloé Roffay** (university of Geneva) - *Selected from abstracts. Poster #14*  
*Active regulation of the passive coupling between membrane tension and cell volume changes*
- 17:05 - 17:15 **Constantinos Demetriades** (Max Planck Institute for Biology of Ageing - DE) - *Selected from abstract. Poster #44*  
*A novel mTORC1-GRASP55 signaling axis reshapes the extracellular proteome upon stress*
- 17:15 - 17:40 **Joseph Baur** (University of Pennsylvania -US)  
*Adipocyte mTORC1 maintains systemic lipid homeostasis*
- 17:40 - 17:45 Q&A and closing remarks



## Endocrine Interactions

LS2 Section Physiology

- 16:00 - 16:05 Welcome note by chairs of the symposium  
**Thomas Lutz** (UZH - CH)
- 16:05 - 16:35 **Hans-Rudolf Berthoud** (Pennington Center in Baton Rouge - US)  
*Gut-Brain Communication and Bariatric Surgery*
- 16:35 - 16:40 **Lavinia Boccia** (University of Zurich - CH) - *Selected from abstracts. Poster #55*  
*Role of CGRP LPBN neurons in the mediation of amylin's and sCT's anorectic effect*
- 16:40 - 16:45 **Tomaz Martini** (University of Fribourg - CH) - *Selected from abstracts. Poster #59*  
*Glial Per2 regulates mood-related behaviour in mice*
- 16:45 - 16:55 **Marie Labouesse** (University of Zurich - CH and Columbia University - US).  
*Selected from abstracts. Poster #57*  
*New players in the brain circuits of movement: D1 axonal collaterals act as a second "direct" pathway to support motor control*
- 16:55 - 17:25 **Christina Boyle** (UZH - CH)  
*Influence of obesity during pregnancy on the mother's mental and metabolic health*
- 17:25 - 17:40 Q&A
- 17:40 - 17:45 Closing remarks

## Systems Biology and Molecular Medicine

*LS2 Systems Biology Intersection*

- 16:00 - 16:05 Welcome note by chairs of the symposium  
**Yolanda Schaerli** (UNIL-CH) & **Attila Becskei** (UNIBAS- CH)
- 16:05 - 16:35 **Michael Knop** (University of Heidelberg - DE)  
*Applications of Multiplexed AnchorSeq insertion site sequencing: from functional genomics to Covid-19 diagnostics*
- 16:35 - 16:45 **Benjamin Towbin** (University of Bern - CH). *Selected from abstracts. Poster #74*  
*Mechanisms of size uniformity during animal growth*
- 16:45 - 17:00 **Maria Zimmermann-Kogadeeva** (EMBL Heidelberg - DE). *Selected from abstracts. Poster #75*  
*Integrated multiomics unravels metabolic diet-microbiota-host interactions*
- 17:00 - 17:30 **Mihaela Zavolan** (Biozentrum, UNIBAS- CH)  
*Modulation of protein synthesis during cellular and organismal life*
- 17:30 - 17:40 Q&A
- 17:40 - 17:45 Closing remarks

## Precision Pharmacology: Translating Today's Discoveries into Tomorrow's Therapies

*Swiss Society of Experimental Pharmacology (SEEP)*

- 16:00 - 16:05 Welcome note by chair of the symposium  
**Gabriele Weitz-Schmidt** (UNIBAS- CH)
- 16:05 - 16:25 **Sonja Kleinlogel** (UNIBE - CH)  
*Precision pharmacology in ocular diseases (gene therapy)*
- 16:25 - 16:45 **Christoph Handschin** (UNIBA - CH)  
*Engaging skeletal muscle for healthy aging: lifestyle and pharmacological interventions*
- 16:45 - 16:55 **Ngoc-Hien Du** (University of Zurich). *Selected from abstracts. Poster #72*  
*Circadian traits as quantitative biomarkers in diabetes*
- 16:55 - 17:05 **George M. Ramzy** ( University of Geneva - CH). *Selected from abstracts. Poster #22*  
*Employing complex 3D co-culture models and mathematical modeling to optimize multidrug combinations and boost colorectal carcinoma treatment*
- 17:05 - 17:30 **Carole Bourquin** (UNIGE - CH)  
*Precision pharmacology in cancer immunotherapy*
- 17:30 - 17:40 Q&A
- 17:40 - 17:45 Closing remarks