



**October 10-11th 2019**  
**University Hospital Zurich**  
**Zurich, Switzerland**

# **Conference Information**

**[zurich-open-innovation.b2match.io](http://zurich-open-innovation.b2match.io)**



**@OpenLifeScience**



**Universität  
Zürich** <sup>UZH</sup>

**ETH** zürich

**USZ** Universitäts  
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Booklet Design by Christina Ambrosi  
Logo & Pattern by Marieke Buffing

Open Innovation in Life Sciences  
October 10<sup>th</sup> - 11<sup>th</sup> 2019

Location Partner:



**b2match**

# Open Innovation in Life Sciences

Welcome to the 2nd Zurich Open Innovation in Life Sciences Conference 2019 (OILS 2019), taking place at the University Hospital Zurich on Thursday, October 10th, and Friday, October 11th. We continue the legacy of similar successful past events for young professionals across academia, industry and decision-makers in science. One hallmark of these events is that they are jointly initiated and organized by senior PhD students and postdoctoral fellows representing the University of Zürich (UZH), the University Hospital Zürich (USZ), and the ETH Zürich (ETHZ). The Life Science PostDoc Day fosters interactions among postdoctoral researchers and senior doctoral students in all life science fields, as well as allows to explore career perspectives. The Life Sciences Innovation Day enhances the interactions between academia, industry, and society by bringing together all relevant stakeholder groups from universities, industry and medicine to discuss topics pertaining to new technologies, drug discovery, precision medicine, and open science and innovation.

## This year's committee



Noémie Frezel, UZH



Christina Ambrosi, UZH



Lia Kallenberger, ETH



Karolina Werynska, UZH



Laetitia Thieren, UZH



Daisy Canepa, USZ



Gabriel Schweizer, UZH



Pau Pérez Escrivá, ETH



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Silvie Cuperus,  
Life Science Zurich



Helen Stauffer,  
Life Science Zurich



Joyce Kao, ETHZ  
Advisory Board



# Program PostDoc Day, October 10<sup>th</sup>

| Time          | Content   | Location              |
|---------------|---|-----------------------|
| 08:00 - 09:00 | Badge pick up & Onsite registration             | in front of HOER B10  |
| 08:20 - 08:50 | One-to-one meetings                             | Dick & Davy Cafeteria |
| 09:00 - 09:15 | Welcome from Organizer, Agenda and Goals        | HOER B10              |
| 09:15 - 09:30 | Opening by Gregor Zünd                          | HOER B10              |
| 09:30 - 10:20 | KEYNOTE Lecture 1 - Guillaume Canaud            | HOER B10              |
| 10:20 - 10:50 | 3 x 10 min Science pitches                      | HOER B10              |
| 10:50 - 11:00 | LS2 Pls of Tomorrow Pitch                       | HOER B10              |
| 11:00 - 11:30 | Coffee Break + Networking                       | Dick & Davy Cafeteria |
| 11:00 - 11:30 | One-to-one meetings                             | Dick & Davy Cafeteria |
| 11:30 - 12:30 | 6 x 10 min Science pitches                      | HOER B10              |
| 12:30 - 13:30 | Lunch Break                                     | cafeteria             |
| 12:30 - 13:30 | One-to-one meetings                             | Dick & Davy Cafeteria |
| 13:30 - 14:30 | Parallel Session 1 - Postdoc funding in science | HOER B10              |
|               | Parallel Session 2 - Career Transitions         | HOER B5               |
| 14:30 - 16:30 | Poster Session + Coffee                         | Dick & Davy Cafeteria |
| 14:30 - 16:30 | One-to-one meetings                             | Dick & Davy Cafeteria |
| 16:30 - 17:30 | Parallel Session 3 - Open Science Culture       | HOER B5               |
|               | Parallel Session 4 - Gender Equality in Science | HOER B10              |
| 17:45 - 18:30 | KEYNOTE lecture 2 - Antonia Maria Müller        | HOER B10              |
| 18.45 - 19:00 | Poster Prize Presentation & Closing             | HOER B10              |
| 19:00 - 21:00 | Apéro + Networking                              | Dick & Davy Cafeteria |

# Program Innovation Day, October 11<sup>th</sup>

| Time          | Content                                  | Location              |
|---------------|--|-----------------------|
| 08:00 - 09:00 | Badge pick up & Onsite registration      | in front of HOER B10  |
| 08:20 - 08:50 | One-to-one meetings                      | Dick & Davy Cafeteria |
| 09:00 - 09:15 | Welcome from Organizer, Agenda and Goals | HOER B10              |
| 09:15 - 09:30 | Opening by Michael Schaepmann            | HOER B10              |
| 09:30 - 09:45 | Session 1 - Introduction to Panel        | HOER B10              |
| 09:45 - 10:30 | KEYNOTE lecture 1 - Lawrence Rajendran   | HOER B10              |
| 10:30 - 11:30 | Open discussion                          | HOER B10              |
| 11:30 - 12:00 | Coffee Break + Networking                | Dick & Davy Cafeteria |
| 11:30 - 12:00 | One-to-one meetings                      | HOER B5               |
| 12:00 - 12:45 | KEYNOTE lecture 2 - Stephen Curry        | HOER B10              |
| 12:45 - 13:30 | Open discussion                          | HOER B10              |
| 13:30 - 13:45 | UZH Entrepreneurship Pitch               | HOER B10              |
| 13:45 - 14:45 | Lunch Break                              | Dick & Davy Cafeteria |
| 13:45 - 14:45 | One-to-one meetings                      | HOER B5               |
| 14:45 - 15:15 | Company Talk - Mobio Interactive         | HOER B10              |
| 15:15 - 15:30 | Session 2 - Introduction to Panel        | HOER B10              |
| 15:30 - 16:15 | KEYNOTE lecture 3 - Jeanette McCarthy    | HOER B10              |
| 16:15 - 17:15 | Open discussion                          | HOER B10              |
| 17:15 - 17:30 | Closing remarks and goodbye              | HOER B10              |
| 17:30 - 19:00 | Apéro + Networking                       | Dick & Davy Cafeteria |

# PostDoc Day - Detailed Program

**09:30 - 10:15 am Keynote by Guillaume Canaud** p. 8

## **Targeted therapy in patient with PIK3CA related overgrowth syndrome.**

CLOVES syndrome (congenital lipomatous overgrowth, vascular malformations, epidermal naevi, scoliosis/skeletal and spinal syndrome) is a genetic disorder that results from somatic, mosaic gain-of-function mutations of the PIK3CA gene, and belongs to the spectrum of PIK3CA-related overgrowth syndromes (PROS). This rare condition has no specific treatment and a poor survival rate. On the basis of studies in postnatal mouse models, BYL719, an inhibitor of PIK3CA, was used to treat nineteen patients with PROS. The drug improved the disease symptoms in all patients. The treatment was not associated with any substantial side effects. This study provides the first direct evidence supporting PIK3CA inhibition as a promising therapeutic strategy in patients with PROS.

**10:20 - 10:50 am - Science Pitches à 10 minutes** p. 20-22

### **1. Nako Nakatsuka**

Understanding Neuronal Communication using DNA Aptamer Bioelectronics.

### **2. Horea Christian**

Publishing Reproducible Results in Reexecutable Documents.

### **3. Elisabeth Fejér**

Evaluation of a Mandibular Canal Classification System to Predict the Incidence of Postoperative Complications Following Third Molar Removal

**10:50 - 11:00 am - Pls of Tomorrow - Elisa Araldi**

If you want to start an academic career in Switzerland, the LS2 PIOT session (Zurich February 13-14, 2020) is a great opportunity to showcase your past work and future project plans, and to get valuable feedback on your job interview talk from a knowledgeable jury of professors. - The PIOT session is one of the most attended session of the LS2 meeting, and most of the past winners now hold positions as group leaders!

# PostDoc Day - Detailed Program

**11:30 am - 12:30 pm - Science Pitches à 10 minutes** p. 23-28

**4. Karin Meier**

Metabolic landscape of the mammalian digestive tract.

**5. Augusto Martins Lima**

A novel “bleeding-free” antiplatelet drug to treat thrombosis.

**6. Daria Glushkina**

Physiologically-based toxicokinetic models to assess TCDD transfer from feed into edible tissues of pigs.

**7. Giada Ingoglia**

Heme-Nrf2 signaling triggers macrophage hypoinflammation conferring disease tolerance to macrophage-driven inflammatory disease in acute hemolysis.

**8. Lafi Aldakak**

The Relationship between Autoimmune Diseases and Protection against Infections.

**9. Flavia Camponovo**

Modelling and simulations to investigate alternative use of vaccines for malaria control, elimination and prevention of resurgence.

**1:30 - 2:30 pm - Parallel Sessions 1** p. 10-11

## **Postdoc Funding in Science - How to apply for money? by Sabine Werner, Alexandra Zingg and Joao Matos**

What is the best path to transition from a postdoc to become an independent researcher? What are the different funding agencies that one can apply to? What is the best moment to start applying for funding? In this workshop we will try to answer those questions and get the different points of view of people that have successfully perform this transition and helped others to achieve it. Join this session if you are curious about what does it take to successfully bring your own research idea to the next level.

# PostDoc Day - Detailed Program

## **Topic 2: Career Transitions - How to find your map?**

**by Verity Elston**

With so few tenure track academic positions on the market, many postdoctoral researchers consider other career paths. Join this session if you are curious about how one makes the transition from an academic position into a career outside of academia. We will explore what resources and strategies are available to you to support this transition.

## **2:30 - 4:30 pm - Poster Session**

The poster session will take place at the Dick & Davy Cafeteria from 2.30 - 4.30 pm accompanied with snacks and coffee. Posters are to be put up at best during registration (8:00 - 9:00 am), and no later than Lunch (1:30 pm). Posters need to be removed at the latest 7:00 pm. Any remaining posters will be discarded. For poster numbers and abstracts, please see page 19.

## **4:30 - 5:30 pm - Parallel Sessions 2**

p. 12-20

### **Open Science Culture - Science for all, by all**

**by Wen Hwa Lee, Markus Köster & Leila Alexander**

Most of the biggest challenges we face today can't be solved by isolated groups of very specialised scientists and their knowledge. It is thus imperative that we start exploring how to bring together the many experts to create knowledge which is much bigger than the sum of its parts - the path to breakthrough innovation. One of the most effective way to achieve this next level of hyper-connection is to start sharing real, high-quality research tools and platforms, where anyone can get free or equitable access to co-create with colleagues from all disciplines and sectors. We will be running three parallel workshops using Open Science resources which are available right now, including drug discovery compounds, datasets for AI, data sciences and personalised medicine in UK and Switzerland.

### **Gender Equality**

**Panel Discussion with Eleonore Lépinard, Simona Isler, Johannes Bohacek on gender equality in science moderated by Mirko Santello.**



# PostDoc Day - Detailed Program

**05:45 - 6:45 pm Keynote by Antonia Maria Müller**

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## **Translating cellular therapies from the bench to the bedside.**

In this talk it will be exemplified how crucial preclinical laboratory studies were and continue to be for the improvement of existing hematopoietic cell therapies and the development of innovative strategies such as chimeric antigen-receptor T cell therapies. Cellular therapies are one prime example of true translational innovation reaching and shaping today's everyday care.

# PostDoc Day - Speaker Information

## Guillaume Canaud



Guillaume Canaud is a MD, PhD working in the Renal Division of Necker Hospital. He did his medical school in Montpellier, his Residency in Nephrology in Paris (2002 to 2007). He became Senior Resident in the Renal Division of Necker (Prof. Legendre) from 2007 to 2012. Concurrently, he spent four years in the laboratory of Dr. Fabiola Terzi (Necker Hospital) to achieve his PhD degree in molecular and cellular biology.

Then, he joined the Joseph Bonventre's Laboratory (Harvard Medical School, Boston, USA) from 2012 to the end of 2013 for his postdoc. He came back to Christophe Legendre's team with a Faculty position (Associate Professor) and is building now his own group of research dedicated to podocyte biology and translational medicine.

He obtained this year the highly prestigious and very competitive European Research Council starting grant in 2015 for his podocyte research project and a European Research Council Proof of Concept grant in 2016 for his translational research.

# PostDoc Day - Speaker Information

## Maria Antonia Müller



Antonia Müller is a physician scientist working in the area of stem- and immune cell therapies at the Department of Medical Oncology & Hematology of the University Hospital Zurich, Switzerland. Before joining the Hematology Department in Zurich in 2012 Antonia spent >6 years in research in a basic transplant immunology laboratory at Stanford, California, Division of Blood & Marrow Transplantation. There, she developed preclinical stem cell transplantation models, which would serve to identify the beneficial and detrimental impacts of specific cellular graft components on blood and immune reconstitution as well as side effects after transplantation. Such studies provide critical basic knowledge to highly manipulate and engineer cellular grafts for clinical implementation. Today in Switzerland Antonia continues to examine the basics of blood and immune reconstitution, but also heads the clinical cell laboratory for stem- and immune cell therapies, the autologous stem cell transplantation program, as well as the CAR-T cell program. Her overall goal as a physician scientist is to improve cellular therapies, increase the chance of cure, and lower the pain and burden of transplant-related side effects.

# PostDoc Day - Speaker Information

## Sabine Werner



Sabine Werner is from Reutlingen, Germany, and she studied Biochemistry at the Universities of Tübingen and Munich. In 1989 she earned her Ph.D. at the University of Munich, after having completed her dissertation at the Max-Planck-Institute of Biochemistry in Martinsried in the department of Prof. Peter Hans Hofschneider. After a short postdoctoral period at the same institute, she moved to the University of California San Francisco, where she started to work on the molecular mechanisms of growth factor action and tissue repair as a postdoctoral scientist in the laboratory of Prof. Lewis.T. Williams. From 1993-1999 she was a group leader at the Max-Planck-Institute of Biochemistry in Martinsried, Germany. In 1996 she obtained a Hermann-and-Lilly Schilling professorship of Medical Research at the same institute and from 1995-1999 she was also Associate Professor of Biochemistry at the Ludwig-Maximilians-University of Munich. She has been Professor of Cell Biology at the ETH Zurich since February 1999. Between 2016 and 2018 she was the Chair of the Institute of Molecular Health Sciences, ETH Zurich. Sabine Werner is also the Chair of the "Hochschulmedizin Zurich" Flagship Project "SKINTEGRITY" and had been elected to the Research Council (Forschungsrat) of the Swiss National Science Foundation in 2005.



# PostDoc Day - Speaker Information



**Alexandra Zingg**

Alexandra Zingg is a research and project manager at the EU GrantsAccess office providing information on international research funding and supporting researchers with EU proposals. She performed her PhD at the Institute of Environmental Decisions studying public perception of health and food related risks and became shortly after that, the scientific project leader of the EU funded project 'Talent and Extended Mobility in the Innovation Union'. After a two years working as a project leader for academic relations in the Swiss start-up swissnex she joined the EU GrantsAccess office where she has been for the past four years.

# PostDoc Day - Speaker Information

**Joao Matos**



Joao Matos is a biochemist that performed his PhD at the laboratory of Wolfgang Zachariae at the Max Planck Institute of Cell Biology and Genetics, Dresden. His PhD thesis work focused on the regulation of chromosome segregation during meiosis. He moved to London in 2009, to carry out postdoctoral work with Stephen West, at Clare Hall Laboratories. In the West laboratory Joao worked on the biochemistry of homologous recombination, with particular emphasis on the regulation of structure-selective endonucleases. In 2014 Joao moved to Zürich, where he was appointed assistant professor and research group leader at ETH. His current research focuses on the regulation of DNA repair in proliferating cells and during meiosis.

# PostDoc Day - Speaker Information

## Verity Elston



Dr Verity Elston leads the career counselling service for PhDs and postdocs at the University of Lausanne Graduate Campus. Previously director of the Transversal Programme in Transferable Skills at the Conference of Western Swiss Universities (CUSO), Verity began her career in doctoral education as Deputy to the Dean of the EPFL Doctoral School. Verity holds a doctorate in Sociocultural Anthropology from the University of Chicago as well as certificates in adult education and integral coaching and has broad professional experience in the private and public sectors in several countries.

She conducts ongoing qualitative and quantitative research and analysis on the career paths of doctorate holders in Switzerland and in Europe. In her dual role as director of Portfolio Formation, she coaches senior researchers across Switzerland and internationally and offers training workshops as well as individual counselling for junior researchers considering their career options off the traditional academic path.

# PostDoc Day - Speaker Information

**Wen Hwa Lee**



Lee is a molecular and structural biologist with a wide international network in drug discovery, including charities, academia, industry and government agencies. Previously at the University of Oxford, Lee is an experienced leader in setting up partnerships and alliances with multiple stakeholders to accelerate discoveries for drug discovery. He designed and implemented several strategies in two of the largest and most successful international public-private partnerships for drug discovery – the Structural Genomics Consortium and the European Lead Factory. Along with his scientific endeavours, Lee also advised high-level government representatives from different countries and charitable institutions on policy and strategy to integrate scientific, societal and economic impact using Open Science. He is also co-director of Oxford Martin School's Affordable Medicines Programme, at the University of Oxford, and has been recently invited to become an Ambassador for the European Open Science Cloud.



# PostDoc Day - Speaker Information



## Markus Köster

Markus is a molecular biologist with a focus on development biology by training and has subsequently gained 20 years of experience in the biotechnology and pharmaceutical industry field. Currently, as part of his role as Director in a staff office reporting to the VP Discovery Research he leads communication & operations of Boehringer Ingelheim's open innovation portal [opnMe.com](https://www.opnme.com). With [opnMe.com](https://www.opnme.com), the company aims to share well-characterized high-quality preclinical tool compounds free of charge with scientists around the world to foster independent research & publications and to invite scientists to submit novel biology concepts for selected molecules as part of a research collaboration proposal. Upon selection by an internal scientific jury, winning proposals are pursued as bi-lateral collaborations with the proposing scientists. Besides [opnMe](https://www.opnme.com), Markus established scientific crowdsourcing as a new open innovation tool to attract externally generated new therapeutic concepts for Boehringer Ingelheim's preclinical pipeline. Before he focused on the fascinating field of open innovation, Markus has accumulated broad experience in pharmaceutical drug discovery, development and innovation – both in research and commercial roles. Prior to his current role, he was Council Chair for R&D Competitive Intelligence at Boehringer Ingelheim and Head of Global Business Intelligence Oncology at Merck KGaA which covered market research, forecasting and competitive intelligence and many, many strategic projects.

# PostDoc Day - Speaker Information



**Leila Alexander**

Leila T. Alexander is the Chief Operating Officer at the SIB Personalized Health Informatics group. She graduated as a Medical Engineer in 2009, earned her doctorate in drug discovery from the University of Oxford in 2013 and gained post-doctoral experience in cancer metabolomics at ETH Zürich. Leila over 8 years' experience in bridging the gap between industry and academia, having worked at Novartis, AstraZeneca, a software development startup and health economics consultancy. She joined SIB Swiss Institute of Bioinformatics in 2017, where she is responsible for the operational oversight of the SPHN Data Coordination Centre and the BioMedIT project.

# PostDoc Day - Speaker Information

## Eléonore Lepinard



Eléonore Lepinard is appointed Associate Professor of Gender Studies and Director of the Center for Gender Studies LIEGE. After studying at the Ecole Normale Supérieure in Cachan and at Sciences-Po Paris, Eléonore Lepinard completed a thesis in sociology at the Ecole des Hautes Etudes en Sciences Sociales (EHESS), which resulted in a book entitled "The equality not found" (L'égalité introuvable). Eleanor Lepinard was a Fulbright Scholar at Rutgers University's Institute for Research on Women and received postdoctoral fellowships from the University of Quebec at Montreal, from the Ecole Normale Supérieure de Cachan and the National Institute of Demographic Studies. She was appointed Assistant Professor of Political Science at the University of Montreal in 2008 and was a visiting researcher at the Robert Schuman Center of the European University Institute in 2011-2012. Her research focuses on intersectionality, feminist movements and theory, gender quotas in political representation, and the inclusion of minorities in liberal societies in a comparative perspective that intersects sociology of law and political theory. She has published her research in many high quality journals as well as several chapters of collective works and has won two awards from the American Science Association.

# PostDoc Day - Speaker Information



**Johannes Bohacek**

Johannes Bohacek (born 1981) received his diploma in Psychology at the University of Graz, Austria in 2003. He then moved to the United States where he completed a Master's degree in Applied Biopsychology at the University of New Orleans, and in 2009 earned his PhD in Neuroscience from Tulane University. After a Postdoctoral Fellowship with Prof. Isabelle Mansuy at the ETH he became a group leader at the Brain Research Institute at the University Zurich. In 2017 he was appointed assistant professor (tenure track) in the Department of Health Sciences and Technology at the ETH Zurich. His research group is interested in understanding the organism-wide consequences of stress, with a focus on the molecular and circuit changes underlying stress-induced anxiety disorders. He is a father of two children and member of the Gender Equality Committee at the Neuroscience Center Zurich.



# PostDoc Day - Speaker Information



**Simona Isler**

Simona Isler finished her studies on history, Spanish literature, and philosophy at the University of Bern in 2011, followed by her doctorate at the Basel Graduate School of History until 2013 where she focused her studies on the history of female movements and feminism in the 20th century. Since then, she serves as a research associate in the project of "Differenzierungsarbeit. Aushandlungen von Arbeitskonzepten in Berufsberatung und Frauenbewegung (Schweiz, 20. Jhdt.)" at the University of Basel. She is also part of WIDE Switzerland and equal opportunity commissioner for research funding of the Swiss National Funds.

# PostDoc Day - Speaker Information



**Mirko Santello**

Mirko received his PhD in 2011 at the University of Lausanne studying multiple sclerosis. After a short-term postdoctoral fellowship at NYU, USA, he pursued his postdoc at the University of Bern by elucidating mechanisms of chronic pain development and discovering new drugs. In 2016, he became junior group leader at the University of Zurich. His lab studied chronic nervous system pathologies with the goal to unravel specific pathophysiological mechanisms that are responsible for occurrence of neurological diseases. He was also part of the Gender Equality Committee at the Neuroscience Center Zurich. Since 2019, Mirko is editor at Frontiers in Lausanne, Switzerland.

# PostDoc Day - Poster Abstracts

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# PostDoc Day - Poster Abstracts

## 1. Nako Nakatsuka - Understanding Neuronal Communication using DNA Aptamer Bioelectronics

The War of the Soups and the Sparks was a debate in the 1930s between the rapidly advancing fields of neuropharmacology (soups) and electrophysiology (sparks) about how neurons communicate to enable signal transduction in the brain. Decades later, we recognize that electrical signals (action potentials) stimulate neurochemical release in synapses and that the combination of the two regulates neuronal communication. While many tools have emerged to study the brain from both a chemical and electrical signaling perspective, there exists no technology that unites the two for simultaneous monitoring of the two mechanisms. In vitro neuronal networks with defined topology enable investigations into how ensemble network geometries and connectivity affect brain activity. We have developed strategies to grow neuronal circuits with both structurally and functionally directional connections between neurons using polymeric guidance microstructures on multi-electrode arrays (MEAs). While in vitro MEA recordings of electrical signalling from spiking neurons is standard practice, simultaneous monitoring of neurochemical signaling has not been possible. Recently, rationally designed oligonucleotide sequences termed aptamers demonstrated specific and selective neurotransmitter recognition in complex physiological environments. Upon target binding, aptamers undergo conformational changes resulting in the rearrangement of the negatively charged backbone at surfaces. Using this technology, we have developed two new systems for parallel monitoring of neurochemical flux and electrophysiology. In the first approach, we functionalize MEAs with aptamers and target binding reversibly alters the surface potential, which can be measured as transient changes in voltage. In the second approach, we couple aptamers to the inner surface of nanoscale quartz pipettes to approach patterned neuronal networks. Target-specific aptamer conformational changes reversibly gate the diffusion of ions under applied bias potential, resulting in measurable changes in ionic current. Such DNA aptamer-based systems will enable sensing of neurotransmitter flux in localized regions of neuronal networks providing a method of interrogating fundamental neuroscience questions such as the molecular mechanisms of learning and adaptation (plasticity).

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# PostDoc Day - Poster Abstracts

## 2. Horea Christian - Publishing Reproducible Results in Reexecutable Documents

The prevalent and currently most accessible medium of exchange for high-level (i.e. semantic) scientific results is that of the document. As this medium (including e.g. posters and articles) is static, it encourages the creation of work which is unreproducible. We present an infrastructure which addresses this issue, by automatically generating variable article elements (e.g. figures and statistics) directly from code and data.

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# PostDoc Day - Poster Abstracts

## **5. Elisabeth Fejér - Evaluation of a Mandibular Canal Classification System to Predict the Incidence of Postoperative Complications Following Third Molar Removal**

**Objectives:** Third molar removal is the most common intervention in oral and maxillofacial surgery. However, the removal of mandibular third molars is associated with complications that can result in pain, inconvenience, and morbidity. The aim of this study was to develop a classification system that can better predict the post-operative complications after mandibular third molar removal.

**Methods:** 466 mandibular third molar removal cases treated between 2004 and 2014 were analyzed in this retrospective longitudinal study. Age, preexisting conditions, retention type (Sailer and Pajarola classification), and the third molar's proximity to the mandibular canal (SPMC) were considered as potential risk factors for surgical complications. Surgical complexity's were delineated per the Simple-Advanced-Complex (SAC) classification. A multivariate logistic regression model was used to investigate the effect of these risk factors on the occurrence of post-operative complications.

**Results:** The logistic regression model revealed that Advanced and Complex categories of SPMC classification and presence of odontogenic cyst significantly predicted post-operative complications ( $p=0.017$ ,  $OR=2.36$ ,  $p=0.004$ ,  $OR=5.33$  respectively). Advanced and Complex category of modified SPMC classification demonstrated higher risk of post-operative complications in comparison to Simple category ( $OR: 2.36$ ,  $p= 0.017$ ).

**Conclusions :** We propose a novel classification that can provide clinician with a tool for assessing anatomical risk factors for mandibular third molar removal with a better predictive power than previous classification system.

# PostDoc Day - Poster Abstracts

## 4. Karin Meier - Metabolic landscape of the mammalian digestive tract

Much of our knowledge about the complex metabolic and microbial processes in the digestive tract is based on the analysis of fecal samples. Within the intestine, it is challenging to investigate which microbes occur where and what the specific nutritional conditions are in these niches. Here we attempt to lay a foundation for understanding intestinal metabolism. Using mice as a model system, we are characterizing microbial metabolism using a combination of untargeted LC-TOF-MS metabolomics and 16S rRNA sequencing. We obtained metabolomics and metagenomics samples from 15 sites spanning the entire gastrointestinal tract of mice colonized with three different compositions of microbiota. The comparison between colonized and germ-free mice allows identification of metabolic characteristics of each colonization status. Based on quantitative data of 100+ metabolites, we can investigate the effect of the microbiota composition on gastrointestinal metabolism. Generally, metabolite concentrations are higher in colonized mice than in germ-free mice. Amino acids are present in high concentrations in the beginning of the small intestine of colonized mice, whereas in the small intestines of germ-free mice simple sugars are measured in high concentrations. Furthermore, products of bacterial fermentation and derivatives of amino acids appear in high concentrations only in the large intestines of colonized mice. In order to draw conclusions about microbe-derived effects, we are integrating metabolite measurements with information about species abundance in the different regions. Ultimately, we aim to identify significant associations between location-specific metabolomes and microbiota compositions to derive hypotheses about niche-specific metabolism of individual species.

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# PostDoc Day - Poster Abstracts

## 3. Augusto Martins Lima - A novel “bleeding-free” antiplatelet drug to treat thrombosis

What: Arterial thrombosis is one of the leading causes of mortality worldwide and current treatments induce bleeding as side effect, which may lead to serious, or even fatal, consequences. Therefore, there is clear unmet clinical need to develop more efficient and safer drugs for thrombosis therapy. GPVI is a platelet-specific receptor, which plays a crucial role in thrombus formation. GPVI deficiency has been identified in patients who presented, at the most, a slight tendency to mild bleeding, but a significant reduction in collagen-induced thrombus formation, indicating that an isolated GPVI deficiency reduces thrombus formation without causing severe bleeding. Together, these observations strongly suggest that physiological haemostasis does not require GPVI, but pharmacological GPVI modulation can give rise to novel “bleeding free” antithrombotic therapies, and a potential benefit a wide range of platelet-related disorders. Using computational models and cell-based assays, we have already identified new molecules capable of inhibiting GPVI-induced platelet function. Next, we plan to perform lead optimization and derive a definitive, final molecule, where we will perform initial safety measures, and animal tests to assess the capability of the drug to inhibit thrombus formation. Aim/Technological Description: To date, there is no optimal therapeutic strategy to inhibit GPVI-mediated platelet activation. In this project, we aim to develop small molecules capable of inhibiting GPVI-induced platelet activation and, consequently, thrombus formation. Using an interdisciplinary approach, we have established a platform to execute the proposed project with access to the following technologies: invitro assays designed for human platelets (primary cells), chemical libraries for drug screening, and the production of the human recombinant GPVI protein. Our group has already identified 5 hit compounds that reduced GPVI-induced platelet activation and GPVI binding to collagen-related peptide, a GPVI-selective ligand.

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# PostDoc Day - Poster Abstracts

## **6. Daria Glushkina - Physiologically-based toxicokinetic models to assess TCDD transfer from feed into edible tissues of pigs**

2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) is an environmentally ubiquitous and bioaccumulative persistent organic pollutant. It can potentially enter the food chain due to consumption of contaminated feed by food producing animals. To assess the transfer of this chemical into the food products from pigs (*Sus scrofa domesticus*), physiologically based toxicokinetic (PBTK) models are required. Several permeability-limited PBTK models for substance fate in the growing pigs are presented. The models considered adipose tissue, blood and liver compartments. The values of tissue-blood partition coefficients of individual congeners were obtained from the open-source LSER UFZ database. The PBTK models on pigs describe the transfer of TCDD from contaminated feed into edible tissues and excretions. The animals were exposed to doses ranging from 24.52 ng to 3269.25 ng of TCDD. The models considered either dose-dependent absorption or self-induced liver metabolism (SIM) of the contaminant. The SIM toxicokinetic model was successfully validated using the 1999 Belgian case of contaminated feeding fats. These PBTK models are the first models that predict the fate of TCDD in growing pigs. This is the first step on the way to develop the series of PBTK models for individual congeners from the polychlorinated dibenzodioxins, dibenzofurans (PCDD/Fs) and polychlorinated biphenyls (PCBs) families for various farm animals. They may be used to estimate accumulation of PCDD/Fs and PCBs in food of animal origin, revise the maximum allowed levels in feed and assess the suitability of farm soil for food production without additional animal experimentation. Additionally, these PBTK models may aid risk managers dealing with contamination events.

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# PostDoc Day - Poster Abstracts

## **7. Giada Ingoglia - Heme-Nrf2 signaling triggers macrophage hypoinflammation conferring disease tolerance to macrophage-driven inflammatory disease in acute hemolysis**

Clearance of red blood cells and hemoproteins is a key metabolic function of macrophages during hemolytic disorders and after tissue injury. By this archetypical phagocyte-function, heme is detoxified and iron is recycled to support erythropoiesis. Hemolysis is common and reciprocal interactions of heme-metabolism and inflammatory macrophage functions may modify disease-outcomes in a broad scope of clinical conditions. We discovered that acute extravascular hemolysis blocked an anti-CD40 antibody-induced pathway of macrophage activation with an inflammatory cytokine release-syndrome and necrotizing hepatitis. We identified intracellular heme as main driver of the immunosuppression. The anti-inflammatory heme-signal was induced in macrophages by an increased intracellular concentration of the porphyrin, which activated the transcription factor Nrf2. Systemic administration of heme-albumin complexes specifically delivers heme to macrophages and replicated the anti-inflammatory effect of hemolysis, suggesting that induction of heme-signaling could be approached as a therapeutic strategy for macrophage-driven diseases.

# PostDoc Day - Poster Abstracts

## **8. Lafi Aldakak - The Relationship between Autoimmune Diseases and Protection against Infections**

Discrimination is essential to the function of the immune system, yet prone to error. To detect what is harmful, the immune system uses molecular clues. Interestingly, the costs of the two possible types of errors are not equal. While false positives cause autoimmune pathologies, false negatives mean increased virulence (higher mortality rates due to infection). Selection works on the precision of the immune system to balance the risks of autoimmunity (specificity) and infections (sensitivity) depending on the risk of infections. Nonetheless, the average immune precision in the population determines the prevalence of the pathogen and hence the infection risk. Our model shows that increased population density selects for higher levels of sensitivity and lower levels of specificity (i.e., higher risk for autoimmune diseases). This effect is stronger when the pathogen mimics self-antigens. We predict that crowding has played a role in increasing the incidence of autoimmune diseases in humans and domestic animals alike. Moreover, the global prevalence of autoimmune diseases should correlate with the geohistorical distribution of pathogens.

# PostDoc Day - Poster Abstracts

## 9. Flavia Camponovo - Modelling and simulations to investigate alternative use of vaccines for malaria control, elimination and prevention of resurgence

**Background:** It is increasingly important to investigate benefits of combining malaria interventions as progress to continue malaria incidence reduction stalls and is threatened by resistance. To investigate novel applications of interventions, it requires understanding the likely impact over a large number of possible strategies and delivery paths, and it is not feasible to test all combinations in the field. Modelling and simulation lend themselves to providing evidence before moving to demonstration field studies. In the current study we assessed the potential impact on transmission of deploying anti-infective vaccines with characteristics similar to the most advanced vaccines: high initial efficacy and with limited duration of protection, to wider age ranges and possibly with co-administration of antimalarial treatment. **Methods:** Malaria transmission and intervention dynamics were simulated using OpenMalaria, an individual-based simulation model of malaria transmission, by considering a seasonal transmission setting and by varying epidemiological and setting parameters such as transmission intensity, case management, intervention types and intervention coverages. Chemopreventive drugs and anti-infective vaccine efficacy profiles were based on previous studies in which model parameters were fitted to clinical trial data. These intervention properties were used to evaluate the potential of seasonal mass applications of preventative anti-infective malaria vaccines, alone or in combination with chemoprevention, to reduce malaria transmission, prevent resurgence, and/or reach transmission interruption. **Results:** Deploying a vaccine to all ages on its own is a less effective intervention strategy compared to chemoprevention alone. However, vaccines combined with drugs are likely to achieve dramatic prevalence reductions and in a few settings, transmission interruption. The combined mass intervention will result in lower prevalence following the intervention compared to chemoprevention alone and will increase chances of interruption of transmission resulting from a synergistic effect between both interventions. The combination of vaccine and drug increases the time before transmission resurges after mass interventions cease compared to mass treatment alone. Deploying vaccines and drugs together requires fewer rounds of mass intervention and fewer years of intervention to achieve the same public health impact as chemoprevention alone. **Conclusions:** Through simulations we identified a previously unidentified value of deploying vaccines with drugs, namely in preventing and delaying transmission resurgence for longer periods than with other human targeted interventions. This suggests a potential role for deploying vaccines alongside drugs in transmission foci as part of surveillance-response strategies. Our study illustrates the advantage of carrying out in silico investigations of the potential of novel deployment options in order to provide additional understandings and guide thinking for the role of malaria vaccines in the future, including the design of future field and clinical trial studies.

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# PostDoc Day - Poster Abstracts

## **10. Sarah Thoeni - Depression of accumbal to lateral hypothalamic synapses drives overeating**

Overeating typically follows periods of energy deficit but is also sustained by highly palatable and calorically dense foods even without metabolic need. Dopamine D1- receptor expressing medium spiny neurons (D1-MSNs) of the nucleus accumbens shell (NAcSh) project to the lateral hypothalamus (LH) and authorize feeding when inhibited. Whether plasticity at these synapses can affect food intake remains elusive. Here, ex vivo electrophysiology recordings reveal that D1-MSN-to-LH inhibitory transmission is depressed in circumstances where overeating is promoted. Endocannabinoid signalling is identified as the induction mechanism, as inhibitory plasticity and concomitant overeating were prevented by CB1R antagonism. D1-MSN-to-LH projectors were largely non-overlapping with D1-MSNs targeting ventral pallidum or ventral midbrain, providing an anatomical basis for distinct circuit plasticity mechanisms. Our study reveals a critical role for plasticity at D1-MSN-to-LH synapses in adaptive feeding control, and which may underlie persistent overeating of unhealthy foods, a major risk factor for developing obesity.

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# PostDoc Day - Poster Abstracts

## 11. Thomas Valentin - Using Mixed Reality in Practical Lab Courses to Advance Learning Outcomes

Phenomena in natural sciences can be hard to understand by students. This is partly due to their inherent complexity, but also due to the inability to cognitively perceive the underlying processes and mechanisms. For example, many chemical and physical phenomena are not visible to the naked eye as they occur at the atto- and nanoscale, creating a disconnect between the student's understanding of the experiment and the underlying fundamentals. Beyond perception, it is important to give students opportunities to change conditions and parameters so that they can experience cause and effect, and ultimately build up intuition. Numerous studies suggest that hands-on activities in science courses can address these challenges by allowing students to interact with these processes in a real world setting while increasing their engagement and motivation. However, these traditional lab courses are limited in their effectiveness: students are often required to follow strict, prescribed protocols which lack opportunities to iterate and control parameters and ultimately limit the student's problem solving and critical thinking skills. These course formats often reinforce rote memorization and decreases the student's ability to learn through trial-and-error. Therefore, more effective methods of teaching and engaging students in these practical instruction courses, as well as novel opportunities for them to develop their intuition are urgently needed. Mixed Reality (MR) tools combine anchored virtual objects with the real world, making it possible to treat them as "real" and allowing students to interact with and experience their environment in new ways. In this way MR affords the opportunity to expand beyond strict, limited protocols and allows students a safe space to explore the learning material with limited consequences. We hypothesize that MR will enhance students' deep understanding and help them develop intuition by creating a real-time interactive learning environment that expands student perception by making the unseeable seen, building intuition by giving opportunities to interact and observe cause and action, and merging abstract theory and real-world practice by enabling overlaid multimodal representations. To test this, we are combining MR with learning sciences strategies such as Multimodal Representations in the form of digital animations and overlays, Control-of-Variables with interactive and immersive simulations, as well as Scaffolding and Gamification to improve student's understanding, intuition, and motivation. Additionally, we will evaluate the learning sciences impact of incorporating MR by testing and comparing the learning outcomes between groups of students with and without MR assistance. We believe this combination of technology and learning sciences will ultimately improve students' understanding, motivation, intuition, and problem solving in a supportive and resourceful environemnt.

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# PostDoc Day - Poster Abstracts

## **12. Til Schlotter - Localized detection of biomolecules using a nanopore integrated into a micro-channelled cantilever**

**INTRODUCTION:** Scanning ion conductance microscopy (SICM) is a well-established technique for the measurement of topographical properties or surface charges on the nanoscale [1]. Those measurements are based on the ionic current through a nanopore, caused by an externally applied electrical potential, superimposed by other effects, such as ion rectification and/or surface charges. Prior we reported a SICM setup that is built on an AFM, together with a micro-channelled cantilever with an opening in the nanometer range at the apex of the cantilever tip [2].

**METHODS:** Here we use a SICM setup, in order to measure the translocation of DNA through a, modified nanopore. The translocation is measured by monitoring the ionic current through the tip of the AFM cantilever, which is measured by two electrodes; one is placed inside the microchannel of the cantilever and a reference electrode in aqueous solution (here: 2M KCl). We expect to obtain spatially localized information about the size and maybe even the sequence of DNA molecules similarly to the specifically designed solid state and biological nanopores that already have been used for the measurement of DNA translocation [3].

**RESULTS:** Preliminary results indicate that the translocation of 20'000 bp DNA through the tip opening can be measured.

**DISCUSSION & CONCLUSIONS:** This technique is a new approach for DNA sensing and later on also could be extended to examine other biomolecules.

# PostDoc Day - Poster Abstracts

## **13. Conny Waschkies - Phenotypization of A549 lung adenocarcinoma and MC-38 colon carcinoma cell grafts grown on the Chorioallantoic Membrane of the Chicken Embryo in ovo with regards to their vascular reactivity and oxygenation status**

Recently, a tumor model based on the chorioallantoic membrane (CAM) was characterized structurally with Magnetic Resonance Imaging (MRI). Yet, capability of MRI to assess vascular functional reserve and potential of oxygenation-sensitive MRI remain largely unexplored in this model. For this purpose, we compare MC-38 colon and A549 lung adenocarcinoma cell grafts grown on the CAM using quantitative T1 and T2\* MRI readouts as imaging markers. These are associated with vascular functionality and oxygenation status when compared between periods of air and carbogen exposure.

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# PostDoc Day - Poster Abstracts

**- Not available for Poster Session - Presentation only on October 11th**

## **14. Adhideb Ghosh - Biological function polarity prediction using missense variants**

NGS technologies can identify on average 20,000 missense variants per exome, out of which very few can be held responsible for causing the underlying disease. Therefore, it is very important to interpret the functional significance of these variants. A number of in silico bioinformatics tools have been already developed for the similar purpose, out of which CADD and PolyPhen2 are most commonly used. While SIFT and PolyPhen2 predict the deleteriousness of variants, CADD scores the variants based on a supervised machine learning approach. There are also tools like Condel, which integrates the output of SIFT and PolyPhen2 along with other tools in order to assess the variant impact on protein function. The aim of this study is to develop a computational model based on these tools that can predict whether the variant causes a gain-of-function or loss-of-function at the protein level. A large number of variants was extracted from public database ClinVar, namely 522 gain-of-function (GOF) and 3,350 loss-of-function (LOF) variants with supporting evidences in terms of literature texts, clinical reports and research projects. The variants were annotated using Variant Effect Predictor. Prediction scores of different in silico tools were analyzed and carefully selected to develop the classifier. Our results show two peaks of mean Condel scores across GOF and LOF variants ( $p < 0.05$ ) indicating a non-random difference. To avoid conserved sequence bias CADD scores were also selected along with Condel scores to build the weighted boosting classifier. Weighted approach was used to address the variant class imbalance and hence ROC curve was used to assess the classifier's performance. The area under the ROC curve ( $>0.8$ ) highlights the predictive power of our computational tool. Therefore, this tool can be useful to predict the functional significance of a missense variant. However, the predictions should be used more as an indicator as they need to be interpreted with further evidence on pathogenicity.

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# PostDoc Day - Poster Abstracts

*- Not available for Poster Session - Presentation only on October 11th -*

## **15. Hind Hashwah - Expression Data Integration: Immuno-Oncology Biomarker Discovery and Validation**

Suppressive immune checkpoint pathways are hijacked by tumors in order to evade the immune system. The immune-evading pathways are currently being clinically targeted, but the therapies are not effective in all patients and across all cancer types. More efforts and efficient approaches are needed to identify how responsiveness can be predicted, and to discover novel targets. In this study, we used GENEVESTIGATOR® to search for novel targets in cancer immunotherapy and to validate biomarkers. GENEVESTIGATOR® is an analysis tool and database, containing high quality curated gene expression data. It allows the user to mine the data of thousands of experiments simultaneously, to identify genes having a very specific profile, or indications associated with the transcriptional activity of selected genes. When studying the specificity of biomarkers or targets, the validation of their expression patterns across cell types provides crucial insights. Using GENEVESTIGATOR®, the expression of CCR8 and MAGEH1, previously reported as markers of intra-tumoral T-reg cells (De Simone et al., Plitas et al., 2016), was compared across CD-4 T-cells compendium-wide. Their combined strength in marking tumor-derived T-reg cells could be confidently confirmed. Furthermore, using the compendium-wide gene search function in GENEVESTIGATOR®, genes specifically expressed in tumor-derived macrophages were identified. A gene set-enrichment search revealed these genes to be primarily involved in cell mobility and chemotaxis. These studies show how GENEVESTIGATOR® can effectively take advantage of the world's high-quality expression data, and help in identifying new biomarkers and characterising their expression patterns.

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# PostDoc Day - Poster Abstracts

## 16. Eric Wasson Burns - SCIVVY

Tired of the academic mafia? We are a young Swiss digital research platform startup and we want research to be flexible and personal again. Find new collaborations, sell or request equipment and expertise, search for grants, advertise/apply for positions... Are you savvy? Join our SCIVVY revolution!

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# Innovation Day - Detailed Program

**09:30 - 10:30 am Keynote by Lawrence Rajendran** p. 39

## **Open and reproducible Science - the ScienceMatters way.**

There is a serious crisis in current models of science publishing: Irreproducibility, non-communication and blocked access of scientific data. One of the important reasons for this crisis is the pressure and demand for full story-based, positive scientific studies to be considered for publication in most of the journals. The agony and the anxiety to get the studies in limited space in these journals combined with the unfair incentives of a “Publish or Perish” culture breed dishonesty that gives rise to irreproducibility in science. During this tortuous process, many scientific observations remain unpublished either because of the inability to develop them into the “stories” including negative data, confirmatory data or observations that are not “sexy” enough. Estimates are that less than 1% of researchers publish more than one paper a year. This suggests that most of the scientific observations made with taxpayers’ funds are never communicated to find place in scholarly space. We would like to change this fundamentally.

We have created ScienceMatters ([www.sciencematters.io](http://www.sciencematters.io)) is the first platform for scientists to publish single observations and not fully developed stories. By eliminating the need to tell full stories, and favoring simple data-based observations over story-telling, we eliminate the current pressure to tell sexy stories. Scientists can publish single and robustly validated observations, be it orphan, negative, confirmatory, contradicting after the observations are vetted through triple-blind peer-review and all the peer review reports are published along with the papers. This also reduces the negative incentives associated with publishing in high-impact journals, namely to come up with data that must fit the big storyline, since it is this narrative pressure that in some unfortunate cases can lead to fraudulence. Therefore, ScienceMatters brings honesty and speed to scientific publishing and helps the science community to produce robust and better results. The platform is open access and allows scientists to get the unique opportunity to publish peer-reviewed single observations with the integration of cutting-edge social media features, thus engaging the community to provide post-publication review both by the experts and other scientists/readers. The platform has the possibility of being a one-stop source for rapid dissemination of honest and scientifically valid observations or data on replication, thereby enabling the natural emergence of the honest scientific narrative as opposed to the pruned narrative of data, as it is done currently.

**11:45 am - 12:30 pm Keynote by Stephen Curry** p. 40

## **The Declaration on Research Assessment (DORA): Opening up the measure of success.**

We seem to have spent the last twenty years on the threshold of the open access “revolution”. Though tremendous progress has been made, we have yet to realise all the potential that digital technology appeared to offer at the outset of the 21st Century.



# Innovation Day - Detailed Program

Part of the difficulty is that the scholarly community has become entangled by the metricisation of research assessment. Unpicking this knotty problem is the task that DORA – among others – has set itself. But it is not enough just to expose the problem. We have to focus on providing solutions that work for science and for society at large.

## Panel Discussions on

### Open Science and Science Evaluation

p. 42-45

- Lawrence Rajendran
- Stephen Curry
- Moderator: Wen Hwa Lee
- Merja Hoppe
- Tania Jenkins
- Bernd Pulverer

## 1:15 - 1:30 pm Insights into the UZH Entrepreneur Fellowship

### by Maria Olivares & Prajwal Prajwal

With the UZH Entrepreneur Fellowships in BioTech and MedTech, the University of Zurich provides funding, training, lab facilities and expert advice to young researchers in life sciences and related fields who intend to start up a company based on their own research carried out at UZH. UZH Entrepreneur Fellows will be given the opportunity to further develop their technology, product or novel service and to evaluate the potential for the commercialization of such a technology, product or service before founding the company.

## 2:30 – 3:00 pm Mobio Interactive Company Talk

Mobio Interactive (MI) is a digital therapeutics and performance enhancement company empowering better living and faster healing. MI blends science and design with internally developed psycho-biometrics and rigorously interrogates the efficacy of its products through random controlled trials. This commitment of using science to test and tailor its products to each individual user ensures that a MI product is an effective product for everyone. They will introduce Am, an award-winning and clinically-validated app that delivers performance enhancement and resilience training as part of a fun and personalised experience. There is a free subscription to the Am App for every OILS 2019 participant.

# Innovation Day - Detailed Program

**3:15- 4:00 pm Keynote by Jeanette McCarthy**

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## **Genetic Testing: Past, Present and Future**

Most people think of the genome as static, but while your DNA doesn't change, our knowledge about the relationship between your genetic variation and disease does. It was only in the 1990's when the first genes for hereditary cancers were discovered and 2005 when the first genome-wide association study for common diseases bore fruit. Genetic testing really began taking off in 2013 and continues to expand as we unravel the genetic basis of disease. Big changes have occurred even in the last five years as we hone in on new genes, revise risk estimates associated with genetic variants and develop new applications, some of which are already being used in the clinic. In this presentation, you'll learn about the state of the art in genetic testing: where we've been, where we're at and where we're going.

## **Panel Discussion on**

## **Ethics and Challenges in Precision Medicine**

- **Jeanette McCarthy**
- **Stephan Beck**
- **Ulrike Held**
- **Susanne Driessen**
- **Guillaume Carbonneau**
- **Sonali Quantius**
- **Moderator - Paolo Cinelli**

p. 46 - 51

# Innovation Day - Speaker Information

## Lawrence Rajendran



Prof. Lawrence Rajendran is a renowned expert in the cell biology of Alzheimer's disease. He studies the cellular and molecular underpinnings of amyloid formation and synapse loss that characterize Alzheimer's, in particular, his lab uses both cell and systems biology approaches to dissect out the complexity of the disease process. He is interested both in neuronal as well as microglial cell biology. He is one of the founding members of the International Society for Extracellular Vesicles (ISEV) and served on the board as the Steering committee member. On the social side, he is also the founder of Raise.Rural, a non-profit organization dedicated to support rural students in India to pursue research. He holds a PhD in Immunology and an MBA from London School of Economics. He has won many awards and honors including the European Young Scientist Grand Prize, German Neuroscience Society's Schilling's prize, the Breuer Award, the National Medal of Honor and the President's Prize by the Govt. of Panama, German Alzheimer's Hirnliga's Steinberg-Krupp Prize, Boehringer Ingelheim Apopis Prize, European Neuroscience Society Award and a University gold medalist in both Bachelors and Masters. Rajendran featured in the 2009 World's top 100 Scientists. He is also the founder and Chairman of ScienceMatters, the next generation open-access and open science journal platform that publishes single observations in science and Eureka, a blockchain based science publishing platform.

# Innovation Day - Speaker Information

## Stephen Curry



Professor Stephen Curry holds joint appointments at the Imperial College London, UK. In October 2017, he was appointed as Assistant Provost for Equality, Diversity and Inclusion to direct the College's strategy in these important areas for staff and students. Prof. Curry is also a member of the Department of Life Sciences (DoLS), where he has worked as a structural biologist on a variety of problems related to protein-drug interactions and the replication of RNA viruses such as foot-and-mouth disease virus and human norovirus (the winter vomiting bug). His group has made major contributions to our understanding of drug interactions with human serum albumin and of a range of host-virus protein interactions that are crucial to initiate translation of viral RNA into new virus proteins in infected cells. Though he is now winding down his structural biology research, Prof. Curry remains an active teacher in DoLS, contributing to a range of undergraduate and postgraduate degree programmes in Biochemistry. From 2011-15 he served as Director of Undergraduate Studies in DoLS. He is also a member of the Equality, Diversity and Inclusion Committee in the Department. Prof Curry's research and teaching have long been combined with strong interests the wider role of science in society. He is active in public engagement, having made and presented a number of science videos. He has keen interests in science policy, particularly in R&D funding, in research evaluation (and the use and mis-use of metrics), and in scholarly publication.



# Innovation Day - Speaker Information



**Jeanette McCarthy**

Prof Dr Jeanette McCarthy is a UC Berkeley trained genetic epidemiologist and spent the early part of her career in industry at Millennium Pharmaceuticals before transitioning to academia. She currently holds adjunct faculty positions at Duke University and UCSF. Her previous research had focused on the genetic underpinnings of complex diseases, both infectious and chronic. More recently, she has become a leading educator in the field of genomic and precision medicine involved in demystifying genomics for non-technical audiences, including health care providers, patients and other stakeholders. In 2014, she helped launch the first consumer-facing magazine in this field, *Genome*, where she served as editor-in-chief. She teaches genomic and precision medicine online through Coursera and Precision Medicine Academy. She also designs and delivers custom workshops, symposia, and webinars through her consulting business ([precisionmedicineadvisors.com](http://precisionmedicineadvisors.com)). Jeanette is coauthor of the book: *Precision Medicine: A Guide to Genomics in Clinical Practice*.



# Innovation Day - Speaker Information

## Tania Jenkins



Dr Tania Jenkins is scientific officer at the Swiss Academy of Sciences (SCNAT) working for the platform Science & Policy. Moreover, she is developing workshops to promote a healthier research culture for the project "we scientists shape science". She is also promoting positive interactions between scientists and members of the general public and is a co-founder of "Evolutionary Knowledge for Everyone" (EvoKE). She holds a doctorate in evolutionary ecology from the Imperial College London.

# Innovation Day - Speaker Information

**Merja Hoppe**



Merja Hoppe is head of the section of Research Support Services at ETH Library since 2019, dealing with digitalization and open science as main drivers for the transformation of research and education. Before, she established and headed a research group for Sustainable Transport Systems at ZHAW for eight years, after holding a position as a Senior Economist for four years at the Economic Research of Credit Suisse. Her educational background is based on a Diploma in Geography with focus on Geoecology, a PhD in the field of Regional Economy as well as a Bachelor in Psychology.

# Innovation Day - Speaker Information



**Bernd Pulverer**

Following undergraduate studies in Cambridge, Bernd received his PhD in 1992 from the Ludwig Institute for Cancer Research, London, for uncovering posttranslational regulation of the transcription factors c-Jun and c-Myc by the JNK and MAP kinases. He carried out postdoctoral research at the Ontario Cancer Institute, Toronto, the Fred Hutchinson Cancer Research Center, Seattle and at the University of Innsbruck. Bernd was associate and then senior editor at Nature from 1999 until 2002 and subsequently chief editor of Nature Cell Biology. He has been the chief editor of The EMBO Journal and Head of Scientific Publications at EMBO since 2009, and serves on the advisory boards of bioRxiv, the San Francisco Declaration on Research Assessment (DORA), ASM and the ESOF program committee.

# Innovation Day - Speaker Information

**Wen Hwa Lee**



Lee is a molecular and structural biologist with a wide international network in drug discovery, including charities, academia, industry and government agencies. Previously at the University of Oxford, Lee is an experienced leader in setting up partnerships and alliances with multiple stakeholders to accelerate discoveries for drug discovery. He designed and implemented several strategies in two of the largest and most successful international public-private partnerships for drug discovery – the Structural Genomics Consortium and the European Lead Factory. Along with his scientific endeavours, Lee also advised high-level government representatives from different countries and charitable institutions on policy and strategy to integrate scientific, societal and economic impact using Open Science. He is also co-director of Oxford Martin School's Affordable Medicines Programme, at the University of Oxford, and has been recently invited to become an Ambassador for the European Open Science Cloud.

# Innovation Day - Speaker Information

**Stephan Beck**



Stephan Beck is Professor of Medical Genomics at the UCL Cancer Institute and Director of the UK Personal Genome Project. He received his PhD in 1985 from the University of Konstanz where he studied DNA structure. After appointments at the MRC Laboratory of Molecular Biology in Cambridge, Millipore Corporation in Boston and the Imperial Cancer Research Fund in London, he joined the Wellcome Trust Sanger Institute in 1996. During his tenure as Head of Human Sequencing, he played a leading role in the sequencing and analysis of the human and mouse genomes. Using experimental and computational approaches, he has broad interests in the genomics and epigenomics of phenotypic plasticity in health and disease to advance translational, regenerative and personalized medicine. He is a Fellow of the Academy of Medical Sciences and recipient of a Royal Society Wolfson Research Merit Award.



# Innovation Day - Speaker Information

## Ulrike Held



Ulrike Held, PD Dr. rer. nat, is a senior scientist and head of the Scientific Methods Consulting Group at EBPI, Dept. of Biostatistics. Ulrike Held is a biostatistician with more than 15 years of experience in clinical research, epidemiology, as well as meta-research. Her research interests are meta-analysis of diagnostic studies, causality in observational research and individualized treatments. Ulrike Held is senior lecturer in Master and PhD programs at UZH and she is a fellow of the Center for Reproducible Science at UZH.

# Innovation Day - Speaker Information



**Susanne Driessen**

Susanne Driessen, MD, worked initially as a physician in clinical care as well as in clinical and basic research in hematology, oncology and immunology. For the last 10 years she has focused on pharmaceutical medicine and ethics in human research, and currently serves as president of swissethics and of the ethical committee of Eastern Switzerland.

# Innovation Day - Speaker Information



**Sonali Quantius**

After obtaining her PhD at the University Hospital Zurich, Sonali moved to ETHZ for postdoctoral studies in proteomics at the Institute of Molecular Systems Biology. She then transitioned to industry working at Eli Lilly as a research scientist in computational systems biology. After five years with Eli Lilly Sonali deepened her applied research expertise at Astra Zeneca in Sweden, where she worked in translational bioinformatics, before she became the director of computational biology at Glaxo Smith Kline in London. Sonali is an expert in analysing big data and in understanding and enabling approaches towards personalized medicine.

# Innovation Day - Speaker Information



## **Paolo Cinelli**

Paolo Cinelli obtained his PhD at Institute of Biochemistry UZH under the supervision of Prof. P. Sonderegger in 2000. After pursuing his postdoctoral fellowship at the University Hospital Zurich until 2003, he became senior research group leader as head of the molecular genetics laboratory at the Institute of Laboratory Animal Science at University of Zurich. Since 2012, Cinelli is head of research, at the Department of Trauma Surgery at University Hospital Zurich and since 2017 head of the Center for Surgical Research at the University and University Hospital Zurich. His Competences lie in Stem Cell Biology, Bone Regeneration, and Bioengineering.

# Notes



# Disclaimer

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# Venue

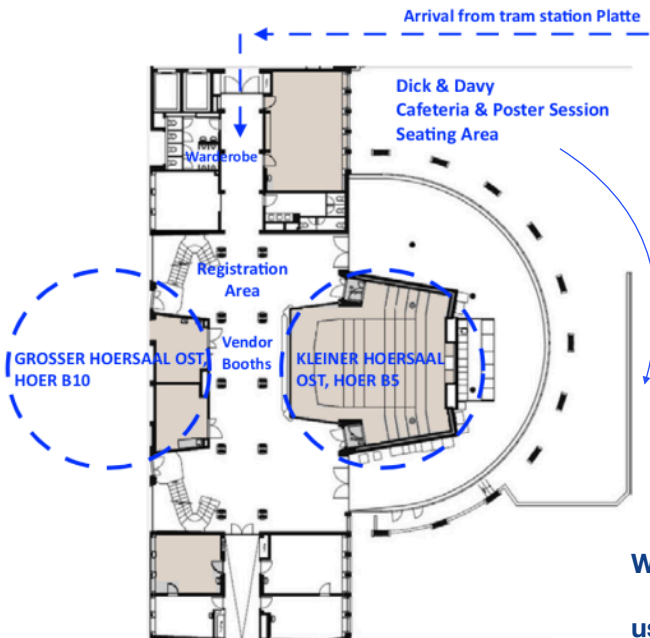
## University Hospital Zurich

**USZ** Universitäts  
Spital Zürich

Gloriastrasse 29, 8006 Zürich

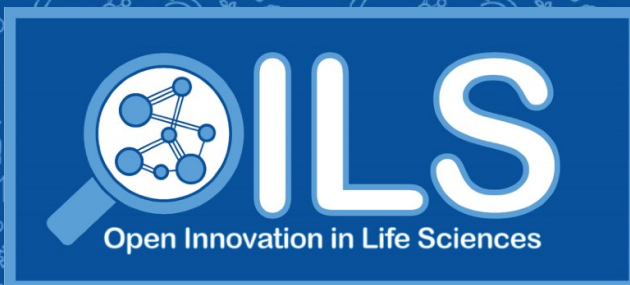
- Big Lecture Hall - OST HOER B10
- Small Lecture Hall - OST HOER B5
- Cafeteria Dick & Davy

The OST building at USZ can be reached by tram lines 5, 6, 9, and 10, and also the Polybahn (funicular) from Central Station. The closest tram stop is Platte (tram 5, 6). Another possibility is to walk from the tram stop ETH/Universitätsspital (trams 6, 9, 10).



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