ZNZ SYMPOSIUM 2016

15 September 2016
08.30 – 18.30

UZH Central Campus
Häldeliweg 2
8044 Zurich
PROGRAM
Thursday, 15 September 2016
UZH Central Campus, Lecture Hall HAH E3, Häldeliweg 2, Zurich

8:30 – 8:45 Introduction
8:45 – 9:30 Volker-Henn Lecture
The first steps in vision: cell types, circuits and repair
Prof. Botond Roska, Friedrich Miescher Institute, Basel
9:30 – 10:00 Coffee Break
10:00 – 11:30 Parallel Workshops:
Neural stem cells and neurogenesis (Lecture Hall E3)
Organization: Prof. Sebastian Jessberger
Invasive treatment of pharmacotherapy-refractory epilepsy (Lecture Hall F1)
Organization: Prof. Christian Baumann
Interdisciplinarity in neuroscience (Lecture Hall E11)
Organization: Dr. Marion Betizeau and Dr. Gregor Pilz
11:30 – 14:00 Poster Session, Lunch (Foyer)
11:30 General Assembly of ZNZ Group Leaders (Lecture Hall E3)

Short Talks, Part I:
14:00 – 14:20 Cortical dysfunctions in pathological pain
Dr. Mirko Santello, Institute of Pharmacology and Toxicology, UZH
14:20 – 14:40 Brain circuit formation in health and disease
Prof. Theofanis Karayannis, Brain Research Institute, UZH
14:40 – 15:00 Single-cell approaches in brain circuit analysis
Prof. Csaba Földy, Brain Research Institute, UZH
15:00 – 15:20 Prognostic and etiologic blood biomarkers in acute ischemic stroke patients
PD Dr. Mira Katan Kahles, Department of Neurology, USZ
15:20 – 16:00 Coffee Break
Short Talks, Part II:

16:00 – 16:20  **Neural systems for processing human voices and affective vocalizations**  
                Prof. Sascha Frühholz, Department of Psychology, UZH

16:20 – 16:40  **Modulating human brain function with neurofeedback**  
                Prof. Frank Scharnowski, Psychiatric University Hospital Zurich

16:40 – 16:55  **ZNZ Award for the Best PhD Thesis 2016**

                Short Break

17:00 – 17:45  Betty and David Koetser Award Lecture:  
                **A circuit model for addiction opening doors for novel therapeutic approaches**  
                Prof. Christian Lüscher, University of Geneva

17:50 – 18:30  Apéro
Parallel Workshops, 10:00 – 11:30

Neural stem cells and neurogenesis (Lecture Hall E3)

Adding new neurons throughout life is required for brain functions associated with learning and cognition. Further, the regenerative potential of adult neural stem cells and their capacity to generate neurons may be harnessed for endogenous repair. The three lectures will present novel findings regulating the distinct developmental steps from quiescent neural stem cells to fully integrating neurons and will discuss how these data may be used for translational approaches to repair or rejuvenate the injured brain.

10:00 – 10:05 Introduction
Prof. Sebastian Jessberger, Brain Research Institute, UZH

10:05 – 10:30 Metabolic control of adult neural stem cells
Dr. Marlen Knobloch, Brain Research Institute, UZH

10:30 – 10:55 Functional separation of RhoGEF9 isoforms during adult neurogenesis for Cdc42 regulation
Dr. Shiva Tyagarajan, Institute of Pharmacology and Toxicology, UZH

10:55 – 11:20 Role of mitochondria in the regulation of adult neurogenesis
Prof. Chichung Lie, Institute of Biochemistry, FAU Erlangen

11:20 – 11:30 Conclusions
Parallel Workshops, 10:00 – 11:30

Invasive treatment of pharmacotherapy-refractory epilepsy
(Lecture Hall F1)

Epilepsy belongs to the most prevalent neurological diseases and many affected patients suffer from pharmacotherapy-refractory seizures. Treatment escalation for these patients is available in highly specialized centers which offer invasive epilepsy treatment, i.e. surgical therapy. This workshop will share insights into the current state of the art of both curative and palliative epilepsy treatments, and into the distinct role of electrophysiology in these therapies.

10:00 – 10:05 Introduction
Prof. Christian Baumann, Department of Neurology, USZ

10:05 – 10:25 Curative epilepsy treatment: current options
PD Dr. Niklaus Krayenbühl, Department of Neurosurgery, USZ

10:25 – 10:45 Palliative epilepsy treatment: deep brain stimulation
Dr. Lukas Imbach, Department of Neurology, USZ

10:45 – 11:05 The role of electrophysiology in invasive epilepsy treatment
PD Dr. Johannes Sarnthein, Department of Neurosurgery, USZ

11:05 – 11:30 Panel discussion
Interdisciplinarity in neuroscience (Lecture Hall E11)

Using a biochemical substrate of cells subjected to the laws of physics, the brain performs information processing that enables us to interact with our environment, and adapt our behavior to the world. Understanding the brain requires multiple disciplines to study and integrate a wide range of scales, ranging from behavior, circuit networks, neuron physiology, down to molecules. The interplay of different approaches, including state of the art biological and technological tools (advanced imaging, genetic tools, mathematical modeling and computer simulations), is bringing valuable insight into how the brain functions and computes. In this workshop different examples of interdisciplinary studies will be presented to illustrate and introduce an interactive discussion about the advantages and challenges of these combined approaches.

10:00 – 10:15 Explaining cortical development as autonomous self-construction
Gabriela Michel (PhD Student, Institute of Neuroinformatics, UZH & ETH)

10:15 – 10:30 Utilizing chronic 2-photon microscopy to image adult hippocampal neurogenesis in vivo
Sara Bottes (PhD student, Brain Research Institute, UZH)

10:30 – 10:45 Mathematical modeling, decision-making, psychiatric disorders: A neuro-computational account of “theory of mind” and its clinical utility for psychiatry
Dr. Andreea Diaconescu (Postdoc, Translational Neuromodeling Unit, UZH & ETH)

10:45 – 11:00 Subjecting algorithms to biological constraints
Daniel Neil (PhD student, Institute of Neuroinformatics, UZH & ETH)

11:00 – 11:30 Panel discussion on advantages and challenges of interdisciplinary approaches in neuroscience
Moderation: Marion Betizeau
Participants: Michel, Bottes, Diaconescu and Neil