ZNZ Zentrum für Neurowissenschaften Zürich
Neuroscience Center Zurich

University of Zurich[UZH]

ETH
Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

# ZNZ SYMPOSIUM 2018

## 13 September 2018
## 08.30 – 18.30

## UZH Central Campus
## Häldeliweg 2
## 8044 Zurich

# OVERVIEW of the POSTER ABSTRACTS (listed by topics)

## SLEEP AND SLEEP DISORDERS

Poster Abstract number(s)

**Group Leader**



## COGNITIVE NEUROSCIENCE

**Group Leader**



## DISORDERS OF THE NERVOUS SYSTEM

**Group Leader**

## COMPUTATION AND MODELING

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## BIOMEDICAL TECHNOLOGY AND IMAGING

| Group Leader | |
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| Stippich C. | 79 |
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# POSTER ABSTRACTS

## DEVELOPMENT

### Group Leader: EDITH M. SCHNEIDER GASSER

**1** **Erythropoietin overexpression in CNS accelerates postnatal GABAergic neuron development:** K. Khalid, J. Frei, J.-M. Fritschy and E. M. Schneider Gasser

### Group Leader: LUKAS SOMMER

**2** **Defining the transcriptional network that governs human neural crest stem cell specification into Schwann cell precursors:** R. Calçada, S. Varum, E. Marzorati and L. Sommer

### Group Leader: MARTIN WOLF

**3** **Cerebral hemodynamic responses in preterm neonates to visual stimulation measured with functional near-infrared spectroscopy: Classification according to subgroups:** F. Scholkmann, S. Kleiser, D. Ostojic, H. Isler, D. Bassler, M. Wolf and T. Karen

## MOLECULAR AND CELLULAR NEUROSCIENCE

### Group Leader: CSABA FÖLDY

**4** **Single-cell RNA-seq Data Reveals Developmental Specification of Neurexin Isoform Profiles:** D. Lukacsovich, J. Winterer, L. Que, W. Luo, T. Lukacsovich, C. Földy

**5** **Single-cell RNAseq profiling of morphologically-identified GABAergic interneurons:** L.Que, J. Winterer, D. Lukacsovich, C. Földy

### Group Leader: ISABELLE MANSUY

**6** **Assessment Of The Contribution Of Germ Stem Cells To Epigenetic Inheritance:** I. Lazar-Contes

### Group Leader: MARTIN MÜLLER

**7** **Probing Glutamate Receptor Organization and Transsynaptic Alignment at the Nanometer Scale:** P. Frei, P. Muttathukunnel and M. Müller

**8** **Rapid induction and sustained expression of presynaptic homeostatic plasticity at a mammalian CNS synapse:** I. Delvendahl and M. Müller

### Group Leader: STEPHAN NEUHAUSS

**9** ***eaat2a*** **Mutant Zebrafish displays Epileptic Seizures:** A.L. Hotz, S. Niklaus, S.C.F. Neuhauss

**Group Leader: OMOLARA OGUNSHOLA (ZNZ Associate)**

**10 Targeting blood-brain barrier impairment as a therapeutic strategy: Glutathione crosstalk between astrocytes and endothelial cells:**
S. Huang, S. Engelhardt, O.O. Ogunshola

**Group Leader: SHIVA K. TYAGARAJAN**

**11 ERK1/2 and GSK3β mediated gephyrin phosphorylation at S268A and S270A affect parvalbumin (PV) innervation onto principal cells:**
M. Hleihil, P. Panzanelli, B. Campell, S.K. Tyagarajan

## NEURAL BASIS OF BEHAVIOR

### Group Leader: BENJAMIN GREWE

**12 Investigating Prelimbic Cortex Population Dynamics During Fear Conditioning:** B. Ehret, B. Grewe

### Group Leader: FRITJOF HELMCHEN

**13 Temporal dynamics of adaptive decision-making in a tactile reversal-learning task:** A. Banerjee, J. Teutsch, G. Parente, F. Helmchen

**14 Calcium imaging of L5 pyramidal cell dendrite activity in mouse barrel cortex during a texture discrimination task:** G. Schoenfeld, S. Valavanis, F. Helmchen

### Group Leader: JOHANNES BOHACEK

**15 The role of the locus coeruleus – norepinephrine system in stress-induced anxiety:** M. Privitera, O. Sturman, A. Floriou-Servou, K. Ferrari, M. Wyss, B. Weber, J. Bohacek

**16 Digging deeper into the molecular consequences of acute stress in the mouse hippocampus:** L. von Ziegler, A. Floriou-Servou, R. das Gupta, O. Sturman, H. Lin, H. U. Zeilhofer, J. Bohacek

### Group Leader: ISABELLE MANSUY

**17 Early life trauma similarly alters metabolism and circulating miRNAs in mice and humans:** A. Jawaid, S. Rigotti, L. Hammerstein, G. v. Steenwyk, I. Lazar-Contes, I.M. Mansuy

### Group Leader: DAVID WOLFER

**18 Automated dissection of permanent effects of hippocampal or prefrontal lesions on performance at spatial, working memory and circadian timing tasks of C57BL/6 mice in IntelliCage:** V. Voikar, S. Krackow, H.P. Lipp, A. Rau, G. Colacicco, D.P. Wolfer

**Group Leader: IRMGARD AMREIN**

**19 Young neurons hit the brake: cautious phenotype is associated with high hippocampal neurogenesis**: F. Wiget, M. van Dijk, L. Slomianka, D. Wolfer, I. Amrein

**Group Leader: STEVEN BROWN**

**20 Identification and Characterization of night-active neurons in the Suprachiasmatic Nucleus that regulate daily behaviour:** S. Pierre-Ferrer[1], J. Winterer[2], B. Collins[1], C. Földy[2] and S.A. Brown[1]

[1]Chronobiology and Sleep Research Group, Institute of Pharmacology and Toxicology, University of Zürich, Zurich, Switzerland
[2]Neural Connectivity group, Brain Research Institute, University of Zürich, Zurich, Switzerland

**21 Mouse models for shiftwork: Maybe child labor isn't as bad as it seems:** M. Sato, C. M. Merz, S.A. Brown

# SENSORY SYSTEMS

## Group Leader: MELODY YING-YU HUANG

**22 Optokinetic set-point sensory adaptation in zebrafish larvae:** T.-F. Lin, F. Romano, D. Lüthi, A.M. Fathalla, D. Pul, D. Straumann, M.Y. Huang

## Group Leader: WOLFGER VON DER BEHRENS

**23 Cortical Deviance detection: beyond the primary sensory areas:** M. Hamada, A. Gurkina, W. von der Behrens

## Group Leader: SHIVA TYAGARAJAN

**24 Gephyrin recruitment of specific GABAA receptor subtype contribute to whisking-induced barrel cortex plasticity:** Y.-C. Tsai, M. Hleihil, J. Stobart, K. D. Ferrari, M. Barrett, B. Weber, S.K. Tyagarajan

## Group Leader: GIOVANNI BERTOLINI

**25 Alcohol-induced effect on self-motion perception and reflexive eye movements:** F. Romano[1,2], D. Straumann[1], G. Bertolini[1,2]

[1]Department of Neurology, University Hospital Zurich and University of Zurich, Zurich Switzerland
[2]Swiss Concussion Center, Schulthess Clinic, Zurich, Switzerland

## Group Leader: ALEXANDER HUBER

**26 The Effect of Round Window Reinforcement on Hearing: A Comparison Between Experimental Data and Numerical Simulation:** N. Liyanage, F. Pfiffner, L. Prochazka, A. Dalbert, I. Dobrev, J.H. Sim, C. Röösli, T. Kleinjung, A. Huber

**Group Leader: TOBIAS KLEINJUNG**

**27 Monitoring of neuroplastic changes after cochlear implantation in SSD – contribution to a better understanding of hearing and tinnitus improvement:** N. Peter, C. Hemsley, L. Jagoda, S. Leske, V. Treyer, R. Probst, T. Kleinjung

**Group Leader: TOBIAS KLEINJUNG AND MARTIN MEYER**

**28 Individualized alpha/delta neurofeedback protocols lead to stable alleviation of tinnitus-related distress:** D. Güntensperger, C. Thüring, T. Kleinjung, P. Neff, M. Meyer

## SLEEP AND SLEEP DISORDERS

### Group Leader: ROBERT RIENER

**29 Substitution Therapy for Sleep-Related Rhythmic Movement Disorder:** R.M. van Sluijs, E. Wilhelm, Q. Rondei, L. Jäger, M. Gall, H. Garn, H.-P. Landolt, P. Achermann, O. Jenni, C.M. Hill and R. Riener

### Group Leader: SALOME KURTH

**30 Interplay Between Sleep, Behavioral Maturational Status And Gut Bacteria In Infant Development:** S.F. Schoch, J.L. Castro-Mejía, B. Leng, W. Kot, Ł.Krych, D.S. Nielsen, S. Kurth

## COGNITIVE NEUROSCIENCE

### Group Leader: VALERIO MANTE

**31** **Tuned persistent activity in prefrontal cortex reliably follows every saccade:** I. Calangiu, V. Mante

**32** **Time varying dynamics of trial-by-trial variability underlying evidence accumulation and saccades:** A. Galgali, M. Sahani and V. Mante

### Group Leader: TODD HARE AND CHRISTIAN RUFF

**33** **Decisions to explore are preceded by increased baseline arousal:** A. Raja Beharelle, M. Grueschow, R. Polanía, M. Moisa, T. Hare* and C.C. Ruff* * denotes shared senior authorship

### Group Leader: CHRISTIAN RUFF

**34** **Arousal optimizes neural evidence representation for human decision-making:** M. Grueschow, R. Polania, T.A. Hare and C.C. Ruff

### Group Leader: BORIS B. QUEDNOW

**35** **The behavioural and neural effects of dopamine on impulsive decision-making differ from, but do not oppose, those of serotonin:** D.M. Cole, L. Rigoux, A.O. Diaconescu, F. Brandl, C. Mathys, Z. Nagy, D. Müller, A.E. Steuer, E. Seifritz, K.E. Stephan, B.B. Quednow

### Group Leader: FRANK SCHARNOWSKI

**36** **Amygdala cue-reactivity encodes the shift from liking to wanting in nicotine dependence**: A. Haugg, A. Manoliu, R. Sladky, L. Hulka, M. Kirschner, M. Herdener, B.B. Quednow, A. Brühl, E. Seifritz, F. Scharnowski

**Group Leader: PHILIPPE TOBLER**

**37 Surprising absence and occurrence of aversive and appetitive liquids activate the amygdala:** J.-C. Kim, L. Hellrung, M. Grüschow, E. Kapetaniou, A. Bagaini, D. Hinz, P.N. Tobler

**38 Impact of satiation and menstrual cycle phase on the hedonic system of obese women:** S. Gobbi, S. Weber, A. Soutschek, G. Graf, D. Hinz, N. Geary, T. Hare, P. Tobler, L. Asarian, B. Leeners

**Group Leader: DOMINIK BACH**

**39 Computational properties of learning to predict threat**: K.E. Ojala[1,2], A. Tzovara[1,2], and D.R. Bach[1,2,3]

[1]Division of Clinical Psychiatry Research, Department of Psychiatry, Psychotherapy and Psychosomatics, Psychiatric Hospital, University of Zurich, Zurich, Switzerland
[2]Neuroscience Centre Zurich, University of Zurich, Zurich, Switzerland
[3]Wellcome Trust Centre for Neuroimaging, University College London, London, UK

**Group Leader: DANIEL BRANDEIS**

**40 Aggression Subtypes Relate to Abnormal Resting State Functional Connectivity in Children and Adolescents with Disruptive Behavior:** J. Werhahn, S. Mohl, D. Willinger, L. Smigielski, J. Naaijen, P. Aggensteiner, N. Holz, S. Baumeister, T. Banaschewski, B. Franke, J. Glennon, J. Buitelaar, S. Walitza, D. Brandeis, Aggressotype and MATRICS consortia

**Group Leader: CHRISTOPH STIPPICH**

**41 Clinical fMRI tool to image cognitive-motor dual task in elderly subjects at risk for dementia:** O.G. Rus[1,3], J. Reinhardt[1,2], C.N. Bürki[1,3], S.A. Bridenbaugh[3,] C. Stippich[1], R.W. Kressig[3] and M. Blatow[1]

[1]University Hospital Zurich, Department of Neuroradiology, Zürich, Switzerland
[2]University of Basel Hospital, Department of Radiology, Basel, Switzerland
[3]Felix Platter-Hospital, University Center for Medicine of Aging, Basel, Switzerland

**Group Leader: SILVIA BREM**

**42** **Word reading in advanced readers: An fMRI study:** S.V. Di Pietro, I. Karipidis, G. Pleisch, D. Willinger, S. Brem

**43** **Dynamic causal modelling identifies contextual modulation of affect during face matching within the cortico-limbic circuitry:** D. Willinger, I. Karipidis, S. Beltrani, S. Di Pietro, S. Brem

**Group Leader: NICOLE WENDEROTH**

**44** **Muscle-specific modulation of indirect inputs to M1 during action observation:** A.L. Cretu, N. Wenderoth

**45** **Steady-state responses in the somatosensory system interact with intrinsic oscillatory activity:** M.J. Wälti, M. Bächinger, N. Wenderoth

**Group Leader: NICOLAS LANGER**

**46** **Parametrization of neural power spectra in healthy elderly and young subjects:** M. Tröndle, A. Pedroni, N. Langer

**47** **White matter alterations in data-driven ADHD subgroups**: S. Dziemian, R. Pfändler, A. Pedroni, N. Langer

**Group Leader: JOHANNES SARNTHEIN**

**48** **Persistently active neurons in the human hippocampus support the verbal working memory network:** E. Boran, T. Fedele, P. Klaver, P. Hilfiker, L. Stieglitz, T. Grunwald, J. Sarnthein

**Group Leader: PAUL GERSON UNSCHULD**

**49** **Cortical iron load increases default mode network activity in cognitively healthy old aged ApoE4 carriers:** S.M. Kagerer, J.M.G. van Bergen, X. Li, F.C. Quevenco, A.F. Gietl, S. Studer, V. Treyer, R. Meyer, P.A. Kaufmann, R.M. Nitsch, P.C.M. van Zijl, C. Hock, P.G. Unschuld

# DISORDERS OF THE NERVOUS SYSTEM

## Group Leader: MARKUS CHRISTEN

**50 The state of neuroethics in German-speaking research – a survey:** M. Christen[1], R. Jox[2], S. Müller[3]

[1]University of Zurich
[2]University of Lausanne
[3]Charité Universitätsmedizin Berlin

**51 Deflating the "DBS causes personality changes" bubble:** F. Gilbert, J.N.M. Viaña and C. Ineichen

## Group Leader: HENNRIC JOKEIT

**52 NEmo – a test battery for clinical assessment of social cognition: preliminary data from patients with temporal lobe epilepsy:** J. Bauer, B.K. Steiger, L.C. Kegel, E. Spirig, J. Büchel, M. Eicher, A. Fankhauser, B. Schaer-Rauber, A. Verrey, H. Jokeit

## Group Leader: HANS H. STASSEN

**53 Polypharmacy in Psychiatry: Unwanted Side Effects and Inflammatory Response System — A Naturalistic Study of 195 Patients under Treatment:** H.H. Stassen, S. Bachmann, R. Bridler, K. Cattapan, D. Herzig, K. Höppner, A. Schneeberger, E. Seifritz, A. Wirth and M. Weisbrod

**54 Monitoring the Effects of Chronic Stress by Voice Analysis: Longitudinal Study of 86 Students over 14 Days:** I. Moragrega, C. Mohr, C. Papagno, M. Possenti, D. Rochat, J. Sánchez Parramon, A. Schneeberger and H.H. Stassen

## Group Leader: SVEN SCHIPPLING

**55 Optic nerve electric stimulation in acute autoimmune optic neuritis – Pathobiological basis and design of a phase II protocol:** C.A. Wicki, J. Hanson, S. Schippling

**Group Leader: ARMIN CURT**

**56 Improved Diagnosis of Cervical Myelopathy Through Multi-Modal Neurophysiological Assessments:** P.S. Scheuren, J. Rosner, R. Lütolf, C.R. Jutzeler, J.L.K. Kramer, A. Curt, M. Hubli

**57 Comparison of targeted and normal treadmill walking in healthy and spinal cord injured individuals – differences in kinematics and EMG:** C. Meyer, S. Stalder, C.S. Easthope, T. Killeen, L. Filli, A. Curt, B. Zörner, M. Bolliger

**Group Leader: PATRICK FREUND**

**58 Training induced macro- and microstructural changes in healthy subject during training using novel quantitative MRI techniques**: M. Azzarito, G. Ziegler, E. Huber, M. Seif, P. Freund

**Group Leader: SUSANNE WEGENER**

**59 Stroke detection using deep learning approaches:** L. Herzog[2,4], E. Murina[4], O. Dürr[5], S. Wegener[1,3*], B. Sick[2,4]

[1]Department of Neurology, University Hospital Zurich and University of Zurich, Switzerland
[2]Department of Biostatistics, EBPI, University of Zurich, Switzerland
[3]Neuroscience Center Zurich, University and ETH Zurich, Switzerland
[4]School of Engineering, IDP, ZHAW, Switzerland
[5]Faculty of Computer Science, IOS, HTWG Konstanz, Germany
*contributed equally

**Group Leader: SPYROS KOLLIAS**

**60 A multicenter study observing relations between white matter integrity, affective symptoms and social support in adults with cerebral glioma before and after surgery**: S. Fuchs[1], L. Michels[2], D. Bellut[3], A. Richter[4]

[1]Department of Consultation Psychiatry and Psychosomatics, University Hospital of Zurich
[2]Department of Neuroradiology, University Hospital Zurich
[3]Department of Neurosurgery, University Hospital of Zurich
[4]Department of Consultation Psychiatry and and Psychosomatics, University Hospital of Zurich

**Group Leader: PATRICK ROTH**

**61 Influence of tumor-treating fields (TTFields) on the immunogenicity of glioma cells:** M. Silginer, L. Hänsch, M. Weller, P. Roth

**Group Leader: PAUL GERSON UNSCHULD**

**62 Region-specific overlap between tau and ß-amyloid associated connectivity:** F.C. Quevenco, J.M. van Bergen, A. Gietl, S. Studer, V. Treyer, P. Kaufmann, R.M. Nitsch, C. Hock, P.G. Unschuld

**Group Leader: UWE KONIETZKO**

**63 APP Nuclear Signaling and Transcriptional Regulation is Mediated by Fe65 and Tip60:** S. Probst, F. Riese, M.T. Gersbacher, M. Krüger, L. Kägi, D. Schuppli, R.M. Nitsch, U. Konietzko

**Group Leader: JAN KLOHS**

**64 Genetic deletion of the coagulation FXII mitigates cognitive and vascular impairment in the arcAβ mouse model of Alzheimer's disease:** M. Rouault, R. Ni, L. Liberale, G. Camici, L. Kulic, J. Klohs

**Group Leader: CHRISTIAN TACKENBERG**

**65 A quick and efficient method to differentiate iPSC astrocytes for the analysis of APOE gene effects in Alzheimer's disease:** S. de Leeuw, S. Schoeffmann, D. Wanner, R.M. Nitsch, C. Tackenberg

**Group Leader: CHRISTOPHER PRYCE**

**66 Extracellular vesicles as potential mediators of periphery-to-brain communication in inflammation-associated neuropsychiatric disorders:** N. Haymour, A. Mazumdar, M. Holm, I. Knüsel, C. Pryce, G. Bergamini

**Group Leader: MIRKO SANTELLO**

**67 Migraine-associated cellular dysfunctions in the anterior cingulate cortex:** J. Romanos, D. Pietrobon, H.-U. Zeilhofer, M. Santello

**Group Leader: THORSTEN HORNEMANN**

**68 The Role of 1-deoxy-sphingolipids in Cell Migration and Wound Healing:** G. Karsai, R. Steiner, A. von Eckardstein, T. Hornemann

**Group Leader: EDITH M. SCHNEIDER GASSER**

**69 Erythropoietin promotes Oligodendrocyte Precursor Cell maturation and Myelination following Perinatal White Matter Injury:** M. Wälti, P. Muttathukunnel, J.-M. Fritschy and E.M. Schneider Gasser

**Group Leader: EMANUELA KELLER**

**70 Cell-Free Oxyhemoglobin in Cerebrospinal Fluid after Aneurysmal Subarachnoid Hemorrhage: A Biomarker and Potential Therapeutic Target:** M. Hugelshofer*, C. Sikorski*, M. Seule, J. Deuel, R. Buzzi, C. Muroi, D. Schaer, E. Keller *Contributed equally

**Group Leader: OMOLARA OGUNSHOLA (ZNZ ASSOCIATE)**

**71 The Blood-Brain Barrier as a stroke treatment: Pericyte-mediated HIF-1 signaling regulates barrier function and outcome:** C.-C. Tsao[1,2], Y. Garcia[2], N. Kachappilly[2] and O. Ogunshola[1,2]

[1]Zurich Center of Integrative Human Physiology
[2]Institute for Veterinary Physiology, University of Zurich

**Group Leader: SUSANNE WEGENER**

**72 The impact of collaterals on reperfusion and stroke outcome:** N. Binder[1,3], M. El Amki[1,3], M. Wyss[2,3], T. Najimi[1,3], B. Weber[2,3], S. Wegener[1,3]

[1]Department of Neurology, University Hospital Zurich and University of Zurich, Switzerland
[2]Institute of Pharmacology and Toxicology, Experimental Imaging and Neuroenergetics, University of Zurich, Switzerland
[3]Neuroscience Center Zurich, University and ETH Zurich, Switzerland

## COMPUTATION AND MODELING

### Group Leader: SHIH-CHII LIU

**73 Event-driven probabilistic model of sound source localization using cochlea spikes:** J. Anumula, E. Ceolini, Z. He, A. Huber and S.-C. Liu

### Group Leader: GIACOMO INDIVERI

**74 Neuromorphic models of cortical circuits:** M. Milde, S. Solinas, E. Donati, D. Liang, D. Zendrikov, A. Renner, Y. Sandamirskaya, G. Indiveri

**75 Event-based neuromorphic systems for personalized medicine:** E. Donati, M. Payvand, R. Krause, N. Risi, K. Burelo, Q. Ning, M. Sharif

### Group Leader: WOLFGER VON DER BEHRENS

**76 Implementation on neuromorphic processor of deviance detection:** N. Vanattou-Saïfoudine, W. von der Behrens, G. Indiveri

### Group Leader: YULIA SANDAMIRSKAYA

**77 Neuronally inspired architectures for navigation and map formation, realized in neuromorphic agents:** R. Kreiser, M. Cartiglia, M. Blätter, D. Niederberger, S. Glatz, J. Martel and Y. Sandamirskaya

**78 Synaptic plasticity for reinforcement learning and pattern formation in bio-inspired recurrent networks:** A. Renner, G. English, H. Vazquez Martinez, V. Metry, Y. Sandamirskaya

# BIOMEDICAL TECHNOLOGY AND IMAGING

## Group Leader: CHRISTOPH STIPPICH

**79 Reproducibility of brain neurometabolites by using three different MR Spectroscopy sequences:** A. Baeshen[1,2], P.O Wyss[1,3], A. Henning[3,4,5], S. Kollias[1], L. Michels[1]

[1]Department of Neuroradiology, University Hospital Zurich, Zurich, Switzerland
[2]Department of Radiological Sciences, College of Applied medical sciences, King Saud University, Riyadh, Saudi Arabia
[3]Institute for Biomedical Engineering, UZH and ETH Zurich, Zurich, Switzerland
[4]Max Planck Institute for Biomedical Cybernetics, Tubingen, Germany
[5]Institute for physics, University of Greifswald, Greifswald, Germany

## Group Leader: ANDRAS JAKAB

**80 Portraying pathological fetal brain development with in utero super-resolution magnetic resonance imaging:** K. Payette, M. Bach Cuadra, S. Tourbier, P. Deman, R. Tuura, A. Jakab

## Group Leader: TOBI DELBRUCK

**81 Back Side Illumination DAVIS for Imaging Neural Activity:** G. Taverni, D. Paul Moeys, F.F. Voigt, F. Helmchen, T. Delbruck

## Group Leader: JOHANNES SARNTHEIN

**82 Real-time detection of High-Frequency Oscillations with a euromorphic Device: first steps:** K. Burelo, M. Sharifshazileh, T. Fedele, G. Indiveri, J. Sarnthein

## Group Leader: NICOLE WENDEROTH AND VALERIO ZERBI

**83 Pharmacogenetic activation of somatosensory cortex by DREADDs modulates brain-wide functional connectivity in wildtype mice:** M. Markicevic, B.D. Fulcher, M. Rudin, N. Wenderoth, V. Zerbi

**Group Leader: BERND WOLLSCHEID**

**84** **Dynamics of the neuronal surface proteotype:** M. van Oostrum, M. Müller, B. Wollscheid

**Group Leader: MEHMET FATIH YANIK**

**85** **A calcium imaging-based closed-loop Brain-Machine Interface protocol in awake mice:** B. Wu, M. Marks, M. Ghannad Rezaie, W. von der Behrens, M.F. Yanik

**86** **Non-invasive, receptor-specific, millimetre-precision targeting of Brain Circuits:** M. Özdas, A. Shah, P. Johnson, M. Marks, B. Yasar, W. von der Behrens, M.F. Yanik

## ZNZ GROUP LEADERS (in alphabetic order and with poster numbers)

# **Additional Posters** (not in the booklet)

## Group Leader: MARKUS RUDIN

**87 Investigating the Biological Basis of the BOLD fMRI Signal in Mice**
Z. Skachokova, F. Schlegel, Y. Sych, A. Schroeter, J. Stobart, B. Weber, F. Helmchen, M. Rudin

## Group Leader: DENIS BURDAKOV

**88 Investigating the mechanisms of claustrum-cortical connectivity**
J. Jackson, M. Karnani, D. Burdakov, A. Lee