

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 2023

14 September 2023

08.30 – 18.00

**ETH Main Building
Rämistrasse 101
8092 Zurich**

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PROGRAM

- 08:30 – 08:45 **Introduction**
Prof. Fritjof Helmchen, Director ZNZ
- 08:45 – 09:30 Volker Henn Lecture
Mechanisms of axon growth and regeneration
Prof. Frank Bradke, German Center for Neurodegenerative Diseases, Bonn
- 09:30 – 10:15 Coffee Break
- 10:15 – 11:45 Parallel Workshops
- Updates on neurodegeneration research: From bench to bedside and back**
Lecture Hall F7, Organization: Dr. Daniela Noain
- Precision recording and manipulation of brain circuits**
Lecture Hall F5, Organization: Prof. Fatih Yanik
- Beauty and the beast - hijacking of physiologic brain functions by glioblastoma**
Lecture Hall F3, Organization: PD Dr. Hans-Georg Wirsching
- 11:45 – 14:15 **Poster Session**, Lunch (Foyer)
- 11:45 **General Assembly of ZNZ group leaders** (Lecture Hall F7)
- 14:15 – 14:30 **ZNZ Award for the Best PhD Thesis 2023**
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Short Talks of New Members

- 14:30 – 14:50 **Astrocytes in brain development and behavior**
Dr. Tina Notter, Institute of Pharmacology and Toxicology, UZH
- 14:50 – 15:10 **The interface between epilepsy and neurodegeneration**
PD Dr. Marian Galovic, Department of Neurology, USZ
- 15:10 – 15:30 **Neurorehabilitation technologies: Supporting upper limb functional recovery from the clinic to home**
Dr. Olivier Lambercy, Institute of Robotics and Intelligent Systems, ETHZ
- 15:30 – 15:50 **Brain-inspired structure-function duality in resistive memory-based electronics**
Prof. Melika Payvand, Institute of Neuroinformatics, UZH and ETHZ
- 15:50 – 16:30 Coffee Break
- 16:30 – 17:15 Betty and David Koetser Award Lecture
Making memories in mice
Prof. Sheena Josselyn, University of Toronto, Canada
- 17:15 – 18:00 Apéro

Parallel Workshops, 10:15 – 11:45

Updates on neurodegeneration research: From bench to bedside and back (Lecture Hall F7)

Neurodegenerative diseases, such as Alzheimer's disease (AD), Parkinson's disease (PD) and Prion disease, lead to a hugely decreased quality of life for patients as well as to a considerable socioeconomic burden for healthcare systems worldwide. Despite the investment of decades of intensive research, effective treatments for specific management of symptoms and disease-modifying therapies remain a largely unmet medical need.

In this workshop, we will highlight both basic and clinical AD, PD and Prion investigations and discuss key research questions ranging from molecular mechanisms involved in disease pathogenesis, to development and exploration of multimodal imaging approaches for disease monitoring, to non-invasive deep sleep modulation for symptoms management and disease modification in clinical populations. The rich expertise of the invited expert panel will provide wide opportunity for attendees to gain new insights into the bidirectional bench-bedside research dialogue.

Introduction and moderation

Dr. Daniela Noain, Department of Neurology, USZ

Dr. Juan Gerez, Laboratory of Physical Chemistry, ETHZ

Dr. Ruiqing Ni, D-ITET, ETHZ

10:15 – 10:25	Introduction
10:25 – 10:40	Unravelling the molecular basis of synucleinopathies: From biology to pathobiology Prof. Tiago Outeiro, Department of Neurodegeneration and Restorative Research, University Medical Center Göttingen
10:40 – 10:55	Slow wave enhancement in Parkinson disease - from symptomatic benefit to neuroprotection Dr. Angelina Maric, Department of Neurology, USZ
10:55 – 11:10	Multimodal imaging in animal models of neurodegenerative diseases Dr. Ruiqing Ni, D-ITET, ETHZ
11:10 – 11:25	Brain change during aging: Implications for prevention and treatment of dementia. Prof. Paul Unschuld, Geriatric Psychiatric Service, University Hospital Geneva
11:25 – 11:40	Studying the role of primary cilia in prion toxicity Dr. Tingting Liu, Institute of Neuropathology, USZ
11:40 – 11:45	Closing remarks

Parallel Workshops, 10:15 – 11:45**Precision recording and manipulation of brain circuits**

(Lecture Hall F5)

This workshop will highlight recent advances and applications in precision recording and manipulation of brain circuits in animal models and discuss their clinical potential. The talks will cover high-density ultraflexible electrodes for brain machine interfaces, non-invasive ultrasound-based receptor-specific modulation of brain circuits, as well as potential applications in high-channel count neuroprosthetics and closed-loop systems for brain disorders.

- 10:15 – 10:30 **A thousand-channel deep-brain visual prosthesis**
Prof. Nathaniel Kilian, Albert Einstein College of Medicine, USA
- 10:30 – 10:45 **Closed-loop recruitment of striatal interneurons prevents compulsivity in mouse model**
Dr. Christiane Schreiweis, Paris Brain Institute, Paris, France
- 10:45 – 11:00 **Long-term single-neuron recordings from multiple brain areas with high-density ultra-flexible electrode arrays**
Baran Yasar, Institute of Neuroinformatics, UZH and ETHZ
- 11:00 – 11:15 **Combined electrical and optical recording of multi-scale neural circuit dynamics with flexible multi-electrode arrays**
Dr. Christopher Lewis, Brain Research Institute, UZH
- 11:15 – 11:30 **Non-invasive focally-concentrated drug delivery by AU-FUS**
Dr. Mehmet Ozdas, Institute of Neuroinformatics, UZH and ETHZ
- 11:30 – 11:45 **FUS for personalised medicine - from in silico to in vivo**
Dr. Esra Neufeld, Associate Director, IT'IS Foundation, Zurich

Parallel Workshops, 10:15 – 11:45

Beauty and the beast – hijacking of physiologic brain functions by glioblastoma (Lecture Hall F3)

Glioblastoma is the most common primary malignant brain cancer in adults and conveys an invariably deadly disease course. Despite multimodal treatment comprising surgery and chemoradiotherapy, median survival of glioblastoma patients is in the range of just one year. A key obstacle to overcoming the highly malignant phenotype and resistance to anti-neoplastic therapy is the hijacking and reshaping of the brain microenvironment by glioblastoma cells. Beyond the induction of immunosuppressive, tumor cell-like phenotypes of microglia and macrophages, accumulating evidence established the presence of gap-junction-coupled glioma cell calcium signaling networks as well as the electrochemical integration and mutual modulation of these networks into astrocytic and neuronal signaling networks. In this workshop, we will introduce basics, emerging concepts and clinical strategies to reprogram the brain microenvironment for the benefit of glioblastoma patients.

- 10:15 – 10:20 **Introduction**
PD Dr. Hans-Georg Wirsching, Department of Neurology, USZ and UZH
- 10:20 – 10:40 **Reprogramming of brain immunity in glioblastoma models**
Dr. Tobias Weiss, Department of Neurology, USZ and UZH
- 10:40 – 11:00 **Targeting glutamatergic signal transduction in glioblastoma patients**
PD Dr. Hans-Georg Wirsching, Department of Neurology, USZ and UZH
- 11:00 – 11:45 **The cancer neuroscience of brain tumor networks**
Dr. Varun Venkataramani, Department of Functional Neuroanatomy, Heidelberg University

OVERVIEW of the POSTER ABSTRACTS (listed by topics)**DEVELOPMENT**

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Group Leader

Stoeckli E.	1,2
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SYNAPTIC TRANSMISSION / PLASTICITY**Group Leader**

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GLIA / METABOLISM**Group Leader**

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STRESS AND RELATED DISORDERS**Group Leader**

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NEURODEGENERATION

Poster Abstract number(s)

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STROKE**Group Leader**

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MOLECULAR / CELLULAR BASIS OF BEHAVIOR**Group Leader**

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EPILEPSY

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COGNITIVE / SOCIAL NEUROSCIENCE**Group Leader**

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STUDIES IN PSYCHIATRY

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POSTER ABSTRACTS

DEVELOPMENT

Group Leader: ESTHER STOECKLI

1 Primary cilia are important for the PNS formation: E. Yusifov, A. Dumoulin, E. Stoeckli

2 WITHDRAWN

Group Leader: CHRISTOPHER PRYCE

3 Development of multi-sensory learning in mice: S. Wicki, A. Canziani, C. Pryce

Group Leader: ISABELLE MANSUY

4 Dissecting the molecular mechanisms of epigenetic inheritance in male germline stem cells: L.B. Zingler-Herrero, I.M. Mansuy

Group Leader: KATHARINA GAPP

5 Paternal transmission of glucocorticoid receptors to the early embryo: M. Kretschmer, P.L. Germain, I. Ivanova, K. Gapp

Group Leader: EDITH SCHNEIDER GASSER

6 Prenatal immune activation in mice induces long-term alterations in brain mitochondrial function: R. Schaer, F.S. Mueller, A.C. Bernhardt, U. Weber-Stadlbauer, E.M. Schneider Gasser

Group Leader: GIANCARLO NATALUCCI

7 From milk to brain to love - How human milk affects mother-infant neural synchrony and bonding: D. Suppiger, S. Guglielmini, T. Reinelt, M. Wolf, G. Natalucci

SYNAPTIC TRANSMISSION / PLASTICITY**Group Leader: MARTIN MÜLLER**

- 8 Towards a human in vitro model of presynaptic homeostatic plasticity:**
M. Brasili, W. Hänseler, E. Stoeckli, M. Müller
- 9 A dynamin-dependent increase in quantal size maintains synaptic transmission after tetanic stimulation:** A. Nair, N. Bollmohr, P. Muttathukunnel, M. Müller

Group Leader: IGOR DELVENDAHL

- 10 Deep learning-based detection of spontaneous synaptic events:**
P. O'Neill, M. Calace, P. Rupprecht, M. Müller, I. Delvendahl

Group Leader: GERHARD SCHRATT

- 11 Circular RNA Rere is implicated in the regulation of synaptic density through the modulation of miR-128-3p:** D. Kelly, S. Bicker, C. Dieterich, G. Schratt

Group Leader: SEBASTIAN JESSBERGER

- 12 Mechanisms underlying the experience-dependent remodeling of the hippocampal network:** A. Chiosso, X. Su, S. Jessberger

GLIA / METABOLISM**Group Leader: TINA NOTTER**

- 13 The role of astrocytes in the functional maturation of the medial prefrontal cortex:** J. Furrer, S. Schalbetter, U. Meyer, B. Weber, T. Notter

Group Leader: PETER RUPPRECHT

- 14 Centripetal integration of past events by hippocampal astrocytes, controlled by the locus coeruleus:** P. Rupprecht, S.N. Duss, D. Becker, C.M. Lewis, J. Bohacek, F. Helmchen

Group Leader: BRUNO WEBER

- 15 The multifaceted role of the lactate transporter MCT2 in maintaining brain homeostasis and function:** A. von Faber-Castell, M. Wyss, M. El Amki, J. Droux, R. Bertschinger, A. Saab, B. Weber

Group Leader: RUIQING NI

- 16 Relationship between reactive astrocytes, by [18F]SMBT-1 imaging, with amyloid-beta, tau, glucose metabolism, and microgliosis in mouse models of AD:** C.A. Maschio, Y. Kong, B. Yao, F. Xie, C. Zuo, U. Konietzko, K. Shi, A. Rominger, J. Xiao, Q. Huang, R.M. Nitsch, Y. Guan, R. Ni

Group Leader: CHRISTIAN TACKENBERG

- 17 The role of apolipoprotein E (APOE) isoforms in neural energy metabolism:** V. Budny, S. M. de Leeuw, Y. Knöpfli, C. Tackenberg

Group Leader: AIMAN SAAB

- 18 Potassium signaling and its function in regulating the axon-oligodendrocyte metabolic unit:** Z.J. Looser, L. Ravotto, R.B. Jung, H.B. Werner, T. Ruhwedel, W. Möbius, D.E. Bergles, F. Barros, K.-A. Nave, B. Weber, A.S. Saab
- 19 Exploring the impact of oligodendroglial reactive oxygen species on axonal function:** U. Dalvi, H.S. Zanker, L. Ravotto, Z.J. Looser, R. Fairless, S. Williams, J.P. Bolaños, B. Weber, A.S. Saab

STRESS AND RELATED DISORDERS

Group Leader: GERHARD SCHRATT

- 20 A potential role for the stress-regulated miR-708 in affective disorders:** C. Gilardi, H.C. Martins, A.Ö. Sungur, F. Gross, R. Daswani, D. Colameo, S. Bicker, M. Wöhr, G. Schrott

Group Leader: CHRISTOPHER PRYCE

- 21 A mouse model for validating new targets to treat pathological aversion processing: the case of TRPC4/5 channel inhibition:** G. Poggi, D. Queisser, A. Senn, H. Sigrist, C. Pryce

Group Leader: KATHARINA GAPP

- 22 Behavioral and molecular effects of paternal chronic stress on the offspring:** V. Fischer, M. Kretschmer, I. Ivanova, P. Kohling, K. Gapp
- 23 Potential biases in analyzing the effects of stress on sperm chromatin:** V. Fischer, T. Germade, P.L. Germain, K. Gapp

Group Leader: ISABELLE MANSUY

- 24 Circulating extracellular vesicles can vehicle signals of stress exposure from the body to reproductive cells in males:** A. Alshanbayeva, L. Steg, A. Othman, F. Manuella, R.G. Arzate-Mejía, N. Zamboni, I.M. Mansuy
- 25 WITHDRAWN**

Group Leader: JOHANNES BOHACEK

- 26 Tonic and burst-like locus coeruleus noradrenaline release dynamically shifts network processing in the forebrain:** S.N. Duss, C. Grimm, M. Privitera, B. Munn, M. Wilhelm, N. Karalis, J. Shine, J. Bohacek, V. Zerbi

Group Leader: BIRGIT KLEIM

- 27 Resilience in the face of stress: Investigating the neurobiological correlates of emotional conflict and arousal in a preregistered prospective cohort study:** E. McPherson, L.E. Meine, M. Grueschow, F. Cathomas, C.C. Ruff, B. Kleim

NEURODEGENERATION

Group Leader: LINJING MU

- 28 Validation and characterization of mitochondrial ATP5A as promising biomarker for Alzheimer's disease and in vitro screening of J147 derivatives:** A. Delparente, C. Jie, C. Keller, R. Schibli, L. Mu

Group Leader: DANIELA NOAIN

- 29 Closed-loop auditory stimulation (CLAS) of slow-wave sleep in mouse models of neurodegeneration:** I. Dias, M. Lopez, S. Kollarik, C.R. Baumann, C. G. Moreira, D. Noain
- 30 Sleep-dependent modulation of retinal pathological protein accumulation in mouse models of neurodegeneration:** I.V. Gysin, I. Dias, I. Barbaric, D. Noain
- 31 Effect of closed-loop auditory stimulation (CLAS) of sleep slow-waves onto cognitive performance in the forced alternation T-maze task in AD mice:** I. Barbaric, I. Antunes dos Santos Dias, D. Noain

Group Leader: RUIQING NI

- 32 Efficient characterization of multiple binding sites of small molecule imaging ligands on amyloid-beta, tau and alpha-synuclein:** J. Sobek, J. Li, B. Combes, J. Gerez, M. Henrich, F. Geibl, P. Nilsson, K. Shi, A. Rominger, W. Oertel, R. Nitsch, A. Nordberg, H. Ågren, R. Ni

TRAUMATIC BRAIN INJURY

Group Leader: MARTIN SCHWAB

- 33 Increased anxiety levels of mice with mild traumatic brain injury compare to intact mice in the Barnes maze test:** L. Rodriguez Peris, M. Scheuber, H. Shan, M. Braun, M. Schwab
- 34 Traumatic brain injury: Delayed appearance of functional deficits after closed head diffuse axonal injury in mice:** M.I. Scheuber, L. Rodriguez Peris, S. Martins, H. Shan, M.E. Schwab

Group Leader: KATRIN RAUEN

- 35 The utility of antisaccade assessment to assess cognitive dysfunction in TBI patients: Systematic review and meta-analysis:** G.F. Symons, E. Sokolenko, S. Mast, S.R. Shultz, K. Rauen
- 36 Portable sleep monitors compared to polysomnography in patients with traumatic brain injury: A systematic review and meta-analysis:** T. Van Der Meer, S. Schiebler, S. Abeijon, B. Nasta, K. Rauen

MOTOR SYSTEM

Group Leader: LINARD FILLI

- 43 **EMG-EMG coherence: A novel biomarker for reticulospinal motor drive?:** N.S. Holliger, F. Zipser-Mohammadzada, D.F. Carpanese, M. Schubert, L. Filli
- 44 **Mapping reticulospinal control of single joint movements in upper and lower extremity muscles:** A.M. Eilfort, D.F. Carpanese, L.C. Neumann, L. Filli
- 45 **Validating the primary method for studying reticulospinal motor control in humans – cortical activity during the StartReact effect:** L.C. Neumann, N. Mahnoor, S. van der Lely, M. Rüfli, N. Furlan, M.D. Liechti, L. Filli

Group Leader: NICOLE WENDEROTH

- 46 **Dynamic causal modelling highlights the importance of decreased self-inhibition of the sensorimotor cortex in motor fatigability:** C. Heimhofer, M. Bächinger, R. Lehner, S. Frässle, J. Balsters, N. Wenderoth
- 47 **TMS-based motor imagery neurofeedback enhances individuation of neural finger representations:** I. Odermatt, S. Kikkert, N. Wenderoth

Group Leader: ELISA DONATI

- 48 **Motor units-based proportional control of individual finger movements for upper limb prosthesis using EMG:** F. Baracat, G. Indiveri, E. Donati

Group Leader: ROGER GASSERT

- 49 **Investigating the neural mechanisms underlying pathological gait patterns in Parkinson's Disease:** L. Salzmann, Z. Mei, L. Fusi, D.K. Ravi, C. Awai, W.R. Taylor, O. Lambercy, R. Gassert

Group Leader: RETO HUBER

- 50 Neural signatures of musical cue processing in targeted memory reactivation for lower-limb motor learning - A pilot study:** V. Kasties, N.-H. Moser, S. Zamora, T. Maffei, R. Sassenburg, M.L. Ferster, C.E. Awai, C.R. Baumann, A.R. Luft, R. Huber, M. Branscheidt, A. Maric

Group Leader: SANNE KIKKERT

- 51 Exploring functional reorganisation of the somatosensory processing stream following injury:** P. Howell, P. Freund, S. Meissner, N. Wenderoth, S. Kikkert

Group Leader: THOMAS KESSLER

- 52 Feasibility of lumbosacral spinal cord imaging for patients with neurogenic lower urinary tract dysfunction: A diffusion MRI study:** S. Büeler, P. Freund, T.M. Kessler, G. David, M.D. Liechti

STROKE

Group Leader: BRUNO WEBER

- 37 OPTOMIST: Novel optical method to induce single capillary microstrokes:** J. Condrau, C. Glück, M. Wyss, T. Esipova, S. Vinogradov, M. El Amki, B. Weber

Group Leader: MOHAMAD EL AMKI

- 38 Neutrophils as key players in microvascular injury and failure in stroke:** J. Droux, A. Del Campo Fonseca, C. Glück, M.T. Wyss, B. Weber, S. Wegener, D. Ahmed, M. El Amki

Group Leader: CHRISTIAN TACKENBERG

- 39 Genetic modification of iPSC-derived neural progenitor cells for endovascular delivery following stroke:** B. Achon Buil, R.Z. Weber, N.H. Rentsch, R.M. Nitsch, R. Rust, C. Tackenberg

Group Leader: ROGER GASSERT

- 40 Usability evaluation of personalized augmented feedback for gait rehabilitation:** R. Jelitto, M.L. Lestoille, A. Luft, R. Gassert, O. Lambercy, C.E. Awai
- 41 Augmented feedback in gait rehabilitation: Influence of targeted parameters:** M.L. Lestoille, O. Hochstrasser, C. Magrini, A. Luft, R. Gassert, C.A. Easthope, O. Lambercy

Group Leader: CHRIS E. AWAI (ZNZ Associate)

- 42 Handshake-algorithm: AI-Driven clinical decision support for post-stroke gait rehabilitation:** A. Böni, A. Ryser, M. Branscheidt, J.E. Vogt, A. Luft, C.A. Easthope

MOLECULAR / CELLULAR BASIS OF BEHAVIOR**Group Leader: EDNA GRÜNBLATT**

- 53 Elucidating the functional effects of omega-3 fatty acids as a treatment in ADHD against inflammation and oxidative stress:** N.M. Walter, C.M. Yde Ohki, S. Walitza, E. Grünblatt
- 54 Involvement of the Wnt signalling in Methylphenidate (Ritalin) treatment of Attention-deficit hyperactivity disorder:** C.M. Yde Ohki, N.M. Walter, S. Walitza, E. Grünblatt

Group Leader: MARIE LABOUESSE

- 55 Developmental perturbation of nigrostriatal and mesolimbic dopamine pathways via chemogenetic manipulation:** K. Otomo, M.A. Labouesse
- 56 Nucleus accumbens subcircuits regulating reward and aversion behavior:** A. Marinescu, E. Kamal, P. Leary, N. Savic, M.A. Labouesse

Group Leader: GERHARD SCHRATT

- 57 microRNA regulation of interneuron circuits and its potential role in the modulation of engram sparsity:** P. Nanda, G.S. Schratt

EPILEPSY

Group Leader: GEORGIA RAMANTANI

- 58 Long-term intellectual and developmental outcomes after pediatric epilepsy surgery: A systematic review and meta-analysis:** I. Stefanos-Yakoub, K. Wingeier, U. Held, B. Latal, E. Wirrell, M.L. Smith, G. Ramantani
- 59 Changes in synaptic dynamics underlies benzodiazepine resistance in paediatric status epilepticus:** T. Fedele, R.J. Burman, A. Steinberg, G. Selmin, G. Ramantani, R. Rosch
- 60 Arterial spin labelling: Exploring the connection between perfusion changes, lesion characteristics, and EEG findings in children with focal cortical dysplasia:** A.G. Gennari, G. Bicciato, I. Stefanos-Yakoub, D. Cserpan, R. Kottke, G. Ramantani, R. Tuura O’Gorman
- 61 Scalp high-frequency oscillations differentiate neonates with seizures from healthy neonates:** D. Cserpan, G. Guidi, B. Alessandri, T. Fedele, F. Pisani, J. Sarnthein, G. Ramantani

Group Leader: LUKAS IMBACH

- 62 Alpha waves as a potential EEG-biomarker for classifying dissociative non-epileptic seizures:** D. Ledergerber, M. Küenzler, M. Schmutz, L. Imbach
- 63 Out-patients LFP recordings from the anterior thalamus in epilepsy patients: Neurophysiological properties and clinical impact:** G. Aiello, D. Ledergerber, T. Dubcek, L. Stieglitz, C. Baumann, R. Polania, L. Imbach

Group Leader: GEORGIA RAMANTANI

- 64 Scalp high frequency oscillation stability through consecutive nights:** P. Karatza, D. Cserpan, T. Fedele, A. Gennari, K. Moser, S.P. Lo Biundo, G. Ramantani

Group Leader: JOHANNES SARNTHEIN

- 65 Multicenter comparison of interictal high frequency oscillations as a predictor of seizure freedom:** V. Dimakopoulos, J. Sarnthein
- 66 Real-time framework to detect and cluster epilepsy biomarkers in electrocorticography with a neuromorphic hardware:** F. Costa, G. Indiveri, J. Sarnthein

Group Leader: GIACOMO INDIVERI

- 67 Electrographic seizure detection using low-power neuromorphic hardware in intracranial EEG:** O. Gallou, F. Costa, D. Ledergeber, L. Imbach, G. Indiveri, J. Sarnthein

PAIN

Group Leader: MICHAEL MEIER

- 68 Sensory cortex reorganization in chronic low back pain: Solving the riddle:** M. Dörig, D. Cole, A. Guekos, P. Stämpfli, P. Schütz, L. Schibli, P. Scheinhardt, M. Meier

Group Leader: PETRA SCHWEINHARDT

- 69 Disentangling state and trait alterations in chronic low back pain: A study protocol:** B. Chozas Barrientos, L. Sirucek, M. Hau, P. Schweinhardt
- 70 The potential influences of respiration patterns on experimental pain sensitization: A pilot study:** M. van Opstal, M. Hau, G. Mergola, P. Schweinhardt

Group Leader: MICHELE HUBLI

- 71 The use of pain-related evoked potentials: New insights in the pain processing in CRPS type I:** F. Allmendinger, P. Scheuren, I. De Schoenmacker, F. Brunner, J. Rosner, A. Curt, M. Hubli
- 72 Central sensitization in neuropathic pain after spinal cord injury:** J. Metzger, I. De Schoenmacker, R. Lütolf, S. Mehli, J. Rosner, A. Curt, M. Hubli

SEX / GENDER SPECIFIC NEUROSCIENCE**Group Leader: THOMAS KESSLER**

- 73 Frequency effects and sex differences in pudendal nerve somatosensory evoked potentials:** M. Rüfli, S. van der Lely, C.E. Anderson, N. Furlan, S.A. Stalder, U. Mehnert, T.M. Kessler, M.D. Liechti

Group Leader: ILIANA KARIPIDIS

- 74 Effects of sex and gender on white-matter properties of the inferior fronto-occipital fasciculus and anxiety levels in early puberty:** Y. Tang, P. Gerwig, D.S. Hong, I.I. Karipidis

Group Leader: KATRIN RAUEN

- 75 Diagnostic of major depression: A systematic review and meta-analysis on sex- and gender-specific phenotypes:** T. Van Der Meer, J. Kunz, E. Seifritz, K. Rauen

COGNITIVE / SOCIAL NEUROSCIENCE**Group Leader: RICHARD HAHNLOSER**

- 76 The role of imitation in vocal learning:** M. Basha, R. Hahnloser, S. Stoll
- 77 Bayesian model of template formation:** K. Lee, T. Tomka, D. Lipkind, R. Hahnloser

Group Leader: CHRISTIAN RUFF

- 78 CHASE – A novel neurocomputational approach to assessing mentalization capabilities:** N. Bürgi, G. Aydogan, A. Konovalov, C.C. Ruff
- 79 Fluctuations in risk preference are driven by Bayesian inference on noisy neural representations:** G. de Hollander, M. Grueschow, F. Hennel, C.C. Ruff

Group Leader: HENNRIC JOKEIT

- 80 A leap in social cognition assessment: Unveiling COSIMO's initial validation:** R. Johannessen, M. Eicher, H. Jokeit

Group Leader: MARTIN MEYER

- 81 The neural representation of hierarchical structure in sentence planning: Insights from cross-serial dependencies in Swiss German:** A. Shaw, S. Sauppe, M. Meyer, A. Giraud, B. Bickel

READING / WRITING**Group Leader: SILVIA BREM**

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- 83 The structural covariance of reading-related brain regions in adults and children with typical reading skills and developmental dyslexia:** A. Haugg, N. Frei, C. Lutz, S.V. Di Pietro, I.I. Karipidis, S. Brem
- 84 Neural correlates of narration processing during a movie watching paradigm in healthy adults:** S.V. Di Pietro, N. Raduner, L. Strickler, S. Weidle Scatolin, N. Ehrhardt, R. Borbás, P. Dimanova, C. Providoli, I.I. Karipidis, A. Haugg, C. Ruff, M. Von Rhein, S. Brem*, N.M. Raschle
- 85 Audiovisual associative learning in the adult brain:** C. Providoli, N. Raduner, S. Di Pietro, S. Bedi, E. Casimiro, N. Ehrhardt, I.I. Karipidis, M. Von Rhein, N.M. Raschle, C. Ruff, S. Brem
- 86 Brain activation during audio-visual and tactile-visual feedback learning in adults:** N. Raduner, C. Providoli, S. Di Pietro, S. Bedi, E. Casimiro, N. Ehrhardt, S. Gubler, I.I. Karipidis, M. Schneebeili, M. Von Rhein, N.M. Raschle, C. Ruff, S. Brem

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- 87 Modulation of alpha power lateralization with EEG-based neurofeedback in order to enhance auditory spatial attention:** F. Stockar, N. Fartdinova, T. Ros, B. Preisig
- 88 Exploring attentional effects on alpha power lateralization in normal-hearing and hearing-impaired individuals:** N. Fartdinova, M. Alavash, T. Popov, M. Wöstmann, J. Obleser, B. Preisig

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- 89 Feasibility of extracochlear stimulation to induce hearing and reduce tinnitus:** R. Bertschinger, L. Sijgers, M. Geys, L. Epprecht, A. Dalbert,
- 90 Electrophysiology and delayed hearing loss in cochlear implant users:** M. Geys, L. Sijgers, F. Pfiffner, R. Bertschinger, A. Kunut, A. Dalbert, C. RööslI, A. Huber

STUDIES IN PSYCHIATRY

Group Leader: BIRGIT KLEIM

- 91 Untangling Brain networks in suicidal individuals: EEG functional connectivity as candidate predictor of suicide-related outcomes:** A. Bankwitz, A. Rüesch, A. Adank, C. Hörmann, T. Villar de Araujo, G. Schoretsanitis, B. Kleim, S. Olbrich
- 92 Predicting CBT outcome in anxiety using EEG-based markers of emotional conflict adaptation and emotional reactivity: A preregistered randomised controlled clinical trial:** M. Müller-Bardorff, L.E. Meine, E. McPherson, M. Grueschow, D. Recher, A. Schulz, C. Paersch, C. Ruff, N. Langer, B. Kleim

Group Leader: HANS H. STASSEN

- 93 Polypharmacy in psychiatry and weight gain: Longitudinal study of patients hospitalized for depression or schizophrenia:** H. Stassen, S. Bachmann, R. Bridler, K. Cattapan, E. Seifritz

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Group Leader: VALERIO MANTE

- 94 Modelling internally driven cortical dynamics with artificial networks:** I. Pompe, S. Kollmorgen, A. Gilad, F. Helmchen, V. Mante
- 95 A generalized Weber's law reveals behaviorally limiting slow noise in evidence accumulation:** V. Shavina, A. Pouget, V. Mante

Group Leader: SHIH-CHII LIU

- 96 CL2Gen: Brain-Inspired replay for continual learning to generate sequences:** J. Ott, S. Liu

Group Leader: GIACOMO INDIVERI

- 97 An ultra-low-power spiking neural network electronic system with on-line learning for closed-loop real-time sensory processing:** C. Wen, A. Rubino, Z. Su, Maryada, J. Chen, S. Narayanan, G. Indiveri

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- 98 Brain-inspired structure-function duality in resistive-memory-based electronics:** J. Weber, T. Torchet, K.C. Raghunathan, F. Moro, Y. Demirag, M. Payvand

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- 99 Diverse, state-dependent coupling between cortical activity patterns and the activity of hippocampal and thalamic neurons:** C. Lewis, A. Hoffmann, S. Berry, L. Meienberg, T. Baran Yasar, M.F. Yanik, F. Helmchen

Group Leader: JINGJING JIANG

- 100 A tuneable tissue-mimicking phantom for optical methods:** T. Li, ADC. Mata, A. Kalyanov, M. Wolf, J. Jiang

Group Leader: MICHAEL MEIER

- 101 Accessible, flexible, and portable data analysis environment for reproducible neuroimaging with Neurodesk: A showcase project:** M. Dörig, S. Bollmann, S. Sommer, M.L. Meier

Group Leader: MEHMET FATIH YANIK

- 102 MRI localization of ultraflexible ultra-thin next-generation polymer electrodes:** E. Ozil, P. Gombkoto, T.B. Yasar, M. Marks, W. von der Behrens, M.F. Yanik
- 103 Dynamics of focally hyperconcentrated drug release:** G. Aydemir, M.S. Ozdas, P. Johnson, Y. Li, W. Behrens, M.F. Yanik

Group Leader: TOBI DELBRUCK

- 104 SciDVS: a neuromorphic camera for high-speed scientific applications:** R. Graca, S. Zhou, B. McReynolds, T. Delbruck

Group Leader: SHIH-CHII LIU

- 105 A Real-time convolutional deep neural network FPGA accelerator for a multi-channel visual NeuroProsthesis:** H. Mohamed, I. Kiselev, Z. Wang, B. Kucukoglu, B. Rueckauer, M. van Gerven, S-C. Liu

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Group Leader: URS ZIEGLER (ZNZ ASSOCIATE)

107 Center for Microscopy and Image Analysis: D.A. Lorenzo Mercado,
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ADDITIONAL POSTERS**Group Leader: CAROLINE LUSTENBERGER**

- 108 K-complex and heart rate dynamics during varying arousal levels in human NREM sleep:** M. Carro-Domínguez, S. Huwiler, S. Oberlin, T.L. Oesch, G. Badii, A. Lüthi, N. Wenderoth, S. Meissner, C. Lustenberger

Group Leader: RUXANDRA BACHMANN-GAGESCU

- 109 Primary cilia in human iPSC derived models:** W. Haenseler, J. Figueiro da Silva, M. Eschment, A. Doumoulin, E. Stöckli, R. Bachmann-Gagescu
- 110 Distinct phenotypes in 2D and 3D iPSC-derived neuronal models for CEP290-associated ciliopathies:** M. Eschment, A. Abidi-Ostorero, J. Figueiro da Silva, R. Bachmann-Gagescu
- 111 Investigating the role of the primary cilium in CNS development in zebrafish Joubert syndrome models:** A. Noble, M. Masek, N. Greter, S. Kollmorgen, E. Stoeckli, R. Bachmann-Gagescu

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