

**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 2014**

**11 September 2014**

**08.30 – 18.30**

**UZH Central Campus**

**Häldeliweg 2**

**8044 Zurich**

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## POSTER ABSTRACTS

### DEVELOPMENT AND REGENERATION

#### Group Leader: IRMGARD AMREIN

- 1 Mammalian domestication by tameness selection impacts adult hippocampus neurogenesis along the septal-temporal axis:**  
S. Huang<sup>1</sup>, L. Slomianka<sup>1</sup>, A. Kharlamova<sup>2</sup>, R. Gulevich<sup>2</sup>, L. Trut<sup>2</sup>, I. Amrein<sup>1</sup>

<sup>1</sup> Institute of Anatomy, University of Zurich

<sup>2</sup> Institute of Cytology and Genetics of the Russian Academy of Sciences, Novosibirsk, Russia

#### Group Leader: EDNA GRÜNBLATT

- 2 Region-specific regulation of the serotonin 2A receptor expression in development and aging in postmortem human brain:**  
Z. Marinova, C.-M. Monoranu, S. Fetz, S. Walitza, E. Grünblatt

#### Group Leader: LUKAS SOMMER

- 3 The role of  $\beta$ -catenin in the development of neural crest stem cells:**  
M. Gay<sup>1</sup>, T. Valenta<sup>2</sup>, K. Basler<sup>2</sup> and L. Sommer<sup>1</sup>

<sup>1</sup> Institute of Anatomy, University of Zurich

<sup>2</sup> Institute of Molecular Life Sciences, University of Zurich

#### Group Leader: ESTHER STOECKLI

- 4 A Wnt signaling network is required for axon guidance:** E. Avilés, E.T. Stoeckli
- 5 Intracellular signalling molecules involved in SynCAM-mediated neural circuit formation:** S. Biber, J.A. Frei, E.T. Stoeckli

**MOLECULAR AND CELLULAR NEUROSCIENCE****Group Leader: DIETMAR BENKE**

- 6 K63-linked ubiquitination of GABAB1 sorts GABAB receptors to lysosomal degradation:** K. Zemoura, C. Trumpler, D. Benke

**Group Leader: STEVEN BROWN**

- 7 Day length reorganizes the SCN neuronal network:** A. Azzi<sup>1</sup>, J.A. Evans<sup>2</sup>, T. Leise<sup>3</sup>, J. Myung<sup>4</sup>, T. Takumi<sup>4</sup>, A. J. Davidson<sup>5</sup>, S.A. Brown<sup>1</sup>
- <sup>1</sup> Institute of Pharmacology and Toxicology, University of Zurich  
<sup>2</sup> Dept. of Biomedical Sciences, College of Health Sciences, Marquette University Milwaukee, USA  
<sup>3</sup> Dept. of Mathematics, Amherst College, Amherst, Massachusetts, USA  
<sup>4</sup> Riken Brain Research Institute, Central Research Bld, Wako, Saitama, Japan  
<sup>5</sup> Dept. of Neurobiology, Morehouse School of Medicine, Atlanta GA, USA

**Group Leader: JEAN-MARC FRITSCHY**

- 8 The role of dystrophin-associated proteins in regulation of GABAergic synapse formation and plasticity:** S. Früh, D. Bürgisser, P. Panzanelli, S. K. Tyagarajan, J.-M. Fritschy

**Group Leader: URS GERBER**

- 9 Different expression of G-protein coupled inwardly rectifying potassium (GIRK) channel determine distinct ontogenesis of cerebellar granule cells in the hemispheres compared to vermis:** F. Brandalise<sup>1,2</sup>, R. L. Miras<sup>3</sup>, U. Gerber<sup>2</sup>, P. Rossi<sup>1</sup>
- <sup>1</sup> Dept. of Biology and Biotechnology, University of Pavia, Italy  
<sup>2</sup> Brain Research Institute, University of Zurich  
<sup>3</sup> Faculty of Medicine, University of Castilla-La Mancha, Albacete, Spain
- 10 Physiological function of group II metabotropic glutamate receptors in the CA1 region:** N. Rosenberg, U. Gerber, J. Ster

**Group Leader: EDNA GRÜNBLATT**

- 11 "Should I divide myself?" Influence of methylphenidate treatment on cell proliferation:** J. Bartl, K. Schmidt, S. Niedecker, S. Walitza, E. Grünblatt

**Group Leader: ISABELLE MANSUY**

- 12 Early traumatic stress leads to transgenerational epigenetic changes affecting gene expression, synaptic plasticity and memory performance in the offspring:** J. Bohacek, M. Farinelli, O. Mirante, G. Steiner, K. Gapp, G. Coiret, M. Ebeling, G. Durán-Pacheco, A.L. Iniguez, F. Manuella, J.-L. Moreau, I.M. Mansuy
- 13 Regulation of microRNAs by protein phosphatase 1 in memory formation:** A. Jawaid, B.T. Woldemichael, Y. Rotharcher, A. Marchais, J. Krol, O. Voinnet, I.M. Mansuy
- 14 DNA hydroxymethylation: An additional epigenetic mark required for memory formation:** E.A. Kremer, I.M. Mansuy
- 15 Analyses of sub-regional functions of the adult mouse hippocampus in memory formation by proteomic profiling:** L.M. von Ziegler<sup>1</sup>, N. Selevsek<sup>2</sup>, I.M. Mansuy<sup>1</sup>
- <sup>1</sup> Brain Research Institute, University of Zurich and Dept. of Health Sciences and Technology, ETH Zurich
- <sup>2</sup> Functional Genomics Center Zurich, University of Zurich and ETH Zurich

**Group Leader: BARBARA PLECKO**

- 16 The metabolomic barcode of antiquitin deficiency:** T.L. Simmons, L. Abela, B. Plecko

**Group Leader: ISABEL TRITSCHLER**

- 17 The TGF-beta superfamily coreceptor TbrIII modulates both Smad1/5/8 and Smad2 signaling pathways in gliomas:** I. Tritschler, J. Schroeder, M. Weller

**Group Leader: SHIVA TYAGARAJAN**

- 18 Neuronal activity-dependent reorganization of nuclear paraspeckles:** K. Seignette, S.A. Brown, S.K. Tyagarajan

**Group Leader: BRUNO WEBER**

- 19 Astrocyte-neuron lactate gradient in vivo:** P. Mächler, M. Wyss, R. Gutierrez, J. Stobart, S. Lengacher, P.J. Magistretti, F. Barros, B. Weber
- 20 Two-photon imaging of intracellular energy metabolites in awake mice:** M. Zuend, J. Mayrhofer, J. Stobart, S. Lengacher, B. Schneider, P.J. Magistretti, F. Barros, M. Wyss, B. Weber

**Group Leader: MICHAEL WELLER**

- 21 Control of cerebral-endothelial-VEGF by TGF- $\beta$  in glioblastoma:** S. Krishnan, G. Tabatabai, K. Frei, I. Tritschler, E. Szabo, M. Weller

**SENSORY SYSTEMS****Group Leader: CHRISTIAN GRIMM**

- 22 The hypoxic response and HIF1A in the development of age-related blindness:** D. Ail, C. Lange, C. Caprara, J. Oczos, C. Grimm

**Group Leader: RICHARD HAHNLOSER**

- 23 Characterization of auditory responses in NIF, a songbird premotor area:** S. Cavé-Lopez, A.L. Vyssotski, N. Giret, R.H.R. Hahnloser



**Group Leader: FRITJOF HELMCHEN**

- 24 Imaging deep-layer neuronal activity in mouse barrel cortex using 1040-nm excitation of a red fluorescent-protein calcium indicator:** S. Carta, J.L. Chen, B. Weber, F.F. Voigt, F. Helmchen
- 25 Imaging large-scale cortical dynamics of anatomically defined circuit pathways:** F. Voigt\*, J.L. Chen\*, R. R. Krüppel, F. Helmchen (\*equal contribution)

**Group Leader: SABINA HOTZ-BOENDERMAKER**

(ZNZ Associate, Balgrist University Hospital Zurich)

- 26 Hemodynamic response in primary sensorimotor cortex to different mechanical stimulations of the lower back measured by fNIRS:** A. Vrana<sup>1,2</sup>, M. Meier<sup>1</sup>, K. Humpreys<sup>1</sup>, J. Forster<sup>1</sup>, S. Hotz-Boendermaker<sup>1</sup>
- 1 Department of Chiropractic Medicine, Interdisciplinary Spinal Research (ISR), Balgrist University Hospital Zurich
- 2 Dept. of Health Sciences and Technology, Human Movement Sciences, ETH Zurich

**Group Leader: ALEXANDER HUBER**

- 27 Mechanical properties of the incudo-malleolar joint in the middle ear:** R. Gerig<sup>1</sup>, J.H. Sim<sup>1</sup>, C. Rössli<sup>1</sup>, A. Eiber<sup>2</sup>, S. Ihrle<sup>2</sup>, A.M. Huber<sup>1</sup>
- 1 University Hospital Zurich
- 2 University of Stuttgart

**Group Leader: BIGNA LENGGENHAGER**

- 28 The autonomic bodily self:** G. Macaudo, G. Bertolini, A. Palla, D. Straumann, P. Brugger, B. Lenggenhager

**Group Leader: KEVAN MARTIN**

- 29 What is the secret of cortical layer 6?:** F. Sägesser, K.A.C. Martin

**Group Leader: HANS STASSEN**

- 30 Affective state and voice:** S. Braun, C. Botella, R. Bridler, F. Chmetz, J. P. Delfino, D. Herzig, V.J. Kluckner, C. Mohr, I. Moragrega, Y. Schrag, E. Seifritz, C. Soler, H.H. Stassen

**MOTOR SYSTEMS**

**Group Leader: KYNAN ENG**

- 31 Multi-center clinical trial of virtual reality upper limb rehabilitation:** M. Hawkins, C. Schuster-Amft, K. Eng, I. Thaler, I. Lehmann, S. Signer, M.A. McCaskey, L. Schmid, Z. Suica, E. Chevrier, N. Kobashi, M.L. Verra, D. Kiper

**Group Leader: RICHARD HAHNLOSER**

- 31a Stereotypy and dimensionality of vocalizations:** S. Kollmorgen, J. Herbst, R.H.R. Hahnloser

**Group Leader: DANIEL KIPER**

- 32 Comparison of reaching and grasping: a quantitative approach:** A. Stankov, D. Kiper

**Group Leader: KEVAN MARTIN**

- 33 Interlaminar connectivity in the mouse motor cortex:** I. Voitov, K.A.C. Martin, M. Perrella

**Group Leader: HUUB VAN HEDEL**

- 34 Can diffusion tensor imaging markers predict rehabilitation outcome in children with acquired brain injury?:** V. Ressel, R. O’Gorman Tuura, H.J.A. van Hedel
- 35 Playful quantification of selective voluntary upper limb motor control in children with brain lesions:** H.J.A. van Hedel, N. Häfliger, C.N. Gerber

**SLEEP AND SLEEP DISORDERS****Group Leader: PETER ACHERMANN**

- 36 Automatic artifact detection in long-term EEG recordings:** A. Malafeev, A. Wierzbicka, A. Wichniak, P. Achermann
- 37 Microsleep episodes:** J. Skorucak, D. Schreier, J. Mathis, P. Achermann

**Group Leader: CHRISTIAN BAUMANN**

- 38 Effect of sleep modulation on trauma-induced cognitive impairment and histological trauma marker in a rat model of closed, diffuse traumatic brain injury:** M.M. Morawska, F. Büchele, M. Penner, D. Noain, C.R. Baumann

**Group Leader: RETO HUBER**

- 39 Adolescents diagnosed with depression and their unaffected siblings show a different topographical distribution of sleep slow wave activity compared to healthy controls:** N. Tesler<sup>1</sup>, M. Gerstenberg<sup>2</sup>, A. Preiss<sup>2</sup>, M. Franscini<sup>2</sup>, O.G. Jenni<sup>1</sup>, S. Walitza<sup>2</sup>, R. Huber<sup>1,2</sup>

<sup>1</sup> Child Development Center, University Children’s Hospital, Zurich

<sup>2</sup> University Clinics of Child and Adolescent Psychiatry, Zurich

- 40 Sleep slow wave activity reveals developmental changes in experience-dependent plasticity:** I. Wilhelm, S. Kurth, M. Ringli, A.-L. Mouthon, A. Buchmann, A. Geiger, O.G. Jenni, R. Huber

**Group Leader: HANS-PETER LANDOLT**

- 41 A role for group-I metabotropic glutamate receptors (mGluR1/5) in sleep-wake regulation:** A. Sousek, P. Franken, H.-P. Landolt, M. Tafti
- 42 mGluR5-mediated signaling contributes to neurophysiological markers of sleep need in humans:** S.C. Holst, K. Hefti, A. Baumer, A. Buck, S.M. Ametamey, M. Scheidegger, R. Dürr, E. Seifritz, H.-P. Landolt
- 43 Effects of COMT inhibitor tolcapone on mood and response speed during sleep deprivation:** A. Valomon<sup>1</sup>, A. Borrello<sup>1</sup>, S.C. Holst<sup>1</sup>, M. Sommerauer<sup>2</sup>, W. Berger<sup>3</sup>, C.R. Baumann<sup>2,4</sup>, H.-P. Landolt<sup>1,4</sup>

<sup>1</sup> Institute of Pharmacology and Toxicology, University of Zurich

<sup>2</sup> Neurology Department, University Hospital Zurich

<sup>3</sup> Institute of Medical Molecular Genetics, University of Zurich

<sup>4</sup> Zurich Center for Interdisciplinary Sleep Research, University of Zurich

**Group Leader: KONRAD WEBER**

- 44 Polysomnography detects benign paroxysmal positional vertigo:** Y. Valko, E. Werth, C.J. Bockisch, P.O. Valko, K.P. Weber

## **NEURAL BASIS OF BEHAVIOR**

**Group Leader: IRMGARD AMREIN**

- 45 Adult neurogenesis and behaviour, causality or correlation?:** R. Maarten van Dijk<sup>1</sup>, Stanley E. Lazic<sup>2</sup>, Stefanie Engler<sup>1</sup>, Lutz Slomianka<sup>1</sup>, David P. Wolfer<sup>1</sup>, I. Amrein<sup>1</sup>

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<sup>2</sup> In Silico Lead Discovery, Novartis Institutes for Biomedical Research, Basel, Switzerland

**Group Leader: MARGARETE ARRAS**

**46 Burrowing and nest building behavior as indicators of well-being in mice:** P. Jirkof, M. Lipiski, M. Arras

**47 Telemetric monitoring of post-anesthetic recovery period after triple shot anesthesia in mice:** M. Lipiski<sup>1</sup>, T. Fleischmann<sup>1</sup>, P. Jirkof<sup>1,2</sup>, M. Arras<sup>1,2</sup>, N. Cesarovic<sup>1</sup>

<sup>1</sup> Division of Surgical Research, University Hospital Zurich

<sup>2</sup> Neuroscience Center Zurich

**Group Leader: DOMINIK BACH**

**48 Specific connectivity profiles for deep and superficial amygdala nuclei in humans:** A. Abivardi, D. Bach

**49 Neural oscillations in human approach-avoidance conflict:** S. Khemka, G. Barnes, R. Dolan, D. Bach

**Group Leader: MATHEW COOK**

**50 Collaborative online reconstruction and analysis of neural circuits:** S. Gerhard, M. Longair, S. Saalfeld, R. Fetter, T. Kazimiers, F. Midgley, C. Schneider-Mizell, A. Cardona

**Group Leader: TODD HARE**

**51 Enhancing exploration during value-based learning with frontopolar brain stimulation:** A. Raja Beharelle, R. Polanía, T.A. Hare\*, C.C. Ruff\*

**Group Leader: ANDREAS LUFT**

- 52 Effects of reward and motor learning on VTA and M1 activation:**  
T. Canonica, S. Leemburg, A.R. Luft

**Group Leader: ISABELLE MANSUY**

- 53 Early exposure to adversity in fathers favors learning in aversive conditions in the offspring:** K. Gapp, F. Manuella, J. Bohacek, I.M. Mansuy

**Group Leader: CHRISTIAN RUFF**

- 54 Neural oscillations support evidence accumulation in perceptual and value-based decision-making:** R. Polanía, I. Krajbich, M. Grueschow, C. C. Ruff
- 55 Automatic versus choice-dependent value representations in the human brain:** M. Grueschow, R. Polania, T.A. Hare, C.C. Ruff

**Group Leader: KLAAS ENNO STEPHAN**

- 56 The role of the cortex and the basal forebrain during saccadic adaptation:** E. Aponte, F. Petzschner, K. E. Stephan, J. Heinzle

**Group Leader: DAVID WOLFER**

- 57 Choice control assessed by automated delay discounting tasks in the social home cage:** A.-K. Fritz, M. Alvarez-Sanchez, E. Vannoni, V. Voikar, D.P. Wolfer

## **COGNITIVE NEUROSCIENCE**

### **Group Leader: SILVIA BREM**

- 58 Audiovisual integration in the prereading brain:** I.I. Karipidis, G. Pleisch, M. Röthlisberger, C. Brauchli, A. Bauer, D. Dornbierer, M. Schneebeil, S. Brem
- 59 Neural basis of visual processing in prereaders:** G. Pleisch, I.I. Karipidis, M. Röthlisberger, C. Brauchli, A. Bauer, D. Dornbierer, M. Schneebeil, S. Brem

### **Group Leader: MORITZ DAUM**

- 60 One language, two dialects, or two languages? Simultaneous acquisition of Swiss and Standard German:** A. Gampe, S. Grassmann, M.M. Daum

### **Group Leader: TODD HARE**

- 61 Stress increases taste focus, but these hedonic signals can be overcome:** S.U. Maier, A.B. Makwana, T.A. Hare

### **Group Leader: LUTZ JÄNCKE**

- 62 Decoding music-evoked emotions from brain activity:** L. Rogenmoser, S. Elmer, L. Jäncke
- 63 Task-dependent changes of functional small-world network parameters as a function of musical expertise:** C. Klein, F. Liem, S. Elmer, L. Jäncke

**Group Leader: DIETRICH LEHMANN****64 EEG microstates differ between transcending and mind wandering:**P.L. Faber<sup>1</sup>, D. Lehmann<sup>1</sup>, P. Milz<sup>1</sup>, F. Travis<sup>2</sup>, N. Parim<sup>2</sup><sup>1</sup> The KEY Institute for Brain-Mind Research, Department of Psychiatry, Psychotherapy and Psychosomatics, University Hospital for Psychiatry, Zurich, Switzerland<sup>2</sup> Center for Brain, Consciousness and Cognition, Maharishi University of Management, 1000 North 4th Street, Fairfield, IA 52557, USA**Group Leader: BORIS QUEDNOW****65 Self-reported impulsivity and decision-making but not delay discounting varies with changing cocaine use: Evidence from a longitudinal study:** L.M. Hulka, M. Vonmoos, K.H. Preller, M.R. Baumgartner, A. Gamma, B.B. Quednow**Group Leader: FRANZ X. VOLLENWEIDER****66 5-HT<sub>1A</sub> receptor agonist buspirone reduces visual hallucinations induced by the mixed 5-HT<sub>2A/1A</sub> agonist psilocybin in healthy humans:** T. Pokorny, K.H. Preller, R. Krähenmann, M. Kometer, E. Seifritz, F.X. Vollenweider**DISORDERS OF THE NERVOUS SYSTEM****Group Leader: DANIEL BRANDEIS****67 State-dependent functional connectivity disturbance within and between brain networks in children with Attention Deficit Hyperactivity Disorder (ADHD):** A. Schläpfer, T. König, D. Brandeis**Group Leader: STEVEN BROWN****68 N<sub>2</sub>O mutations cause intellectual disability by regulating synaptic biology:** D. Mircsof<sup>1,2</sup>, M. Langouët<sup>3</sup>, Matej Žnidarič<sup>1</sup>, C.



Koester<sup>2</sup>, J. Amiel<sup>3,4</sup>, J.-M. Fritschy<sup>2</sup>, L. Colleaux<sup>3</sup>, S.A. Brown<sup>1</sup> and S.K. Tyagarajan<sup>2</sup>

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<sup>2</sup>Neuromorphology Group, Institute of Pharmacology and Toxicology, University of Zurich

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<sup>4</sup> Service de Génétique, Hôpital Necker-Enfants Malades, AP-HP, Paris

### **Group Leader: ARMIN CURT**

- 69 Tracking structural changes following traumatic spinal cord injury: a prospective longitudinal study:** P. Grabher, A. Curt, N. Weiskopf, M. Callaghan, J. Ashburner, K. Friston, A. Thompson, P. Freund

### **Group Leader: MARIA TERESA FERRETTI**

- 70 The influence of Alzheimer's disease-like amyloid pathology on the immune surveillance in the brain:** C. Gericke, N. Schweizer, T. Suter, R.M. Nitsch, M.T. Ferretti

### **Group Leader: JEAN-MARC FRITSCHY**

- 71 Effects of acquired seizures on Alzheimer's disease (AD)-like pathology in mouse models of familial and sporadic AD:** M. Zaichuk, T. Gschwind, I. Knüsel, J.-M. Fritschy
- 72 The contribution of AD-like pathology to limbic seizures in rodents: Relevance of immune-mediated mechanisms:** T. Gschwind, M. Zaichuk, I. Knüsel, J.-M. Fritschy

**Group Leader: JOHANNES HÄBERLE**

- 73 Characterization of the only frequently recurrent mutation in carbamoyl phosphate synthetase 1 deficiency:** L. Hu, C. Diez-Fernandez, V. Rüfenacht, B. Öztürk Hismi, Ü. Erdogan Soyucen, M. Coker, B. Tanyeri Bayraktar, M. Gunduz, E. Kiykim, J. Pérez-Tur, V. Rubio, J. Häberle

**Group Leader: CHRISTOPH HOCK**

- 74 Morphometric and volumetric changes in MCI using novel in-vivo segmentation techniques:** S.E. Leh, A.M. Kälin, P. Freund, A. Gietl, F. Riese, M.-T. Park, M.M. Chakravarty, S. Kollias, C. Hock, L. Michels
- 75 Computational neuroanatomy: methods and applications to detect cortical and subcortical structure changes in prodromal Alzheimer's Disease:** A.M. Kälin, M.M. Chakravarty, J. Lerch, M. Park, L. Michels, F. Riese, S. Kollias, R.M. Nitsch, A.F. Gietl, P.G. Unschuld, C. Hock, S.E. Leh

**Group Leader: THORSTEN HORNEMANN**

- 76 The pathomechanism underlying the neurotoxicity of 1-Deoxy-sphingolipids:** S. Suriyanarayanan, T. Hornemann

**Group Leader: HENNRIC JOKEIT**

- 77 Non-visual spatial navigation fMRI lateralizes mesial temporal lobe epilepsy in a patient with congenital blindness:** G.Toller<sup>1</sup>, B. Adhimalam<sup>2</sup>, T. Grunwald<sup>1</sup>, H.-J. Huppertz<sup>1</sup>, K. König<sup>1</sup>, H. Jokeit<sup>1</sup>
- <sup>1</sup> Swiss Epilepsy Center, Zürich, Switzerland
- <sup>2</sup> Memory and Aging Center, UCSF Department of Neurology, University of California San Francisco, CA, USA

**Group Leader: KLARA LANDAU**

- 78 Measurements of optic nerve sheath diameter by CT, MRI and ultrasound:** Ch. Giger Tobler, J. Eisenack, D. Holzmann, A. Pangalu, V. Sturm, H.E. Killer, K. Landau, G.P. Jaggi

**Group Leader: ROGER NITSCH**

- 79 Oligomeric A $\beta$  induces neuronal production of reactive oxygen species:** J.H. Birnbaum, R.M. Nitsch, C. Tackenberg
- 80 Reversal of cognitive impairment by p66Shc deletion in an AD mouse model:** R. Derungs, C. Späni, F. Wirth, T. Welt, R.M. Nitsch, L. Kulic
- 81 Effects of functional lymphocyte ablation in a mouse model of Alzheimer's disease:** C. Späni, T. Suter, M.T. Ferretti, R. Derungs, F. Wirth, T. Welt, C. Hock, R.M. Nitsch, L. Kulic
- 82 A conformation-specific human-derived anti-SOD1 antibody to fight ALS:** F. Wirth, M. Maier, F. Montrasio, J. McAfoose, S. Imobersteg, M. Krueger, A. Jeske, D. Preisig, M. Weber, J. Grimm, R.M. Nitsch, T. Welt

**Group Leader: CHRISTOPHER PRYCE**

- 83 Molecular and behavioural evidence for amygdala pathology in a mouse model of stress-induced emotional dysfunction:** D. Azzinnari, V. Hoop, H. Sigrist, E. Seifritz, T. Hildebrandt, G. Leparc, R. Fuertig, A. Ceci, B. Hengerer, C. Pryce
- 84 Establishing the roles of TNF and the kynurenine pathway in inflammation-induced emotional and cognitive dysfunction:** F. Cathomas, F. Klaus, H. Sigrist, E. Marzorati, J-C. Paterna, E. Seifritz, R. Fuertig, A. Ceci, B. Hengerer, A. Mueller, A. Fontana, C. Pryce

**Group Leader: LAWRENCE RAJENDRAN**

- 85 A paired RNAi and RabGAP overexpression screen identifies Rab11 as a regulator of  $\beta$ -amyloid production:** V. Udayar, L. Rajendran

**Group Leader: JOHANNES SARNTHEIN**

- 86 High-frequency oscillation (HFO) in hand motor cortex elicited by somatosensory stimulation:** S. Burnos, O. Schmid, P. Hilfiker, N. Krayenbühl, T. Grunwald, J. Sarnthein
- 87 High-frequency oscillations (HFOs) in electrocorticography during epilepsy surgery:** F. Mozaffari, S. Burnos, P. Hilfiker, N. Krayenbühl, T. Grunwald, J. Sarnthein

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- 88 Prefrontal thinning affects functional connectivity and regional homogeneity of the anterior cingulate cortex in major depressive disorder: relevance for treatment response:** J. Späti, J. Hänggi, J. Ernst, N. Doerig,; F. Sambataro, J. Brakowski, L. Jäncke, M. Grosse Holtforth, E. Seifritz, S. Spinelli

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- 89 Insufficient coping behavior under chronic stress and vulnerability to psychiatric disorders:** J.P. Delfino, E. Camussi, P. Lott, C. Mohr, C. Papagno, H. H. Stassen

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- 90 Impaired environmental volatility monitoring and neural prediction error coding in the at-risk state for psychosis:** D.M. Cole, K.H.

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- 91 A hypomorphic tyrosine hydroxylase knock-in (Th-ki) mouse with catecholamine depletion and impaired motor control replicates a severe form of L-Dopa TH deficiency:** G. Allegri<sup>1</sup>, G. Korner<sup>1,2</sup>, D. Noain<sup>3</sup>, M. Ying<sup>4</sup>, M. Hole<sup>4</sup>, M.I. Flydal<sup>4</sup>, T. Scherer<sup>1</sup>, A. Rassi<sup>5</sup>, R. Fingerhut<sup>1</sup>, D. Becu-Villalobos<sup>6</sup>, S. Pillai<sup>7</sup>, S. Wüest<sup>8</sup>, D. Konrad<sup>8</sup>, A. Lauber<sup>9</sup>, C. Baumann<sup>3</sup>, A. Martinez<sup>4</sup>, B. Thöny<sup>1,2</sup>

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- 92 Cortical Amyloid beta in cognitively normal elderly adults is associated with decreased network efficiency within the cerebro-cerebellar system:** S. Steininger, X. Liu, A. Gietl, M. Wyss, S. Schreiner, E. Gruber, V. Treyer, A. Kälin, S. Leh-Seal, A. Buck, R. M. Nitsch, K. P. Prüssmann, C. Hock, P. G. Unschuld

- 93 Investigating the metabolic signature of asymptomatic beta-amyloidosis of the brain using 7T magnetic resonance spectroscopic imaging:**

\*S.J. Schreiner, \*T. Kirchner, A. Gietl, S. Steininger, M. Wyss, E. Gruber, A. Buck, S. Leh, R.M. Nitsch, K.P. Prüssmann, C. Hock, A. Henning, P.G. Unschuld (\* equally contributing)

**Group Leader: SUSANNE WALITZA**

- 94 CNTNAP2 gene in high functioning autism:** A.M. Werling, R. Taurines, E. Bobrowski, R. Gundelfinger, M. Romanos, E. Grünblatt, S. Walitza

**Group Leader: SUSANNE WEGENER**

- 95 Reduced COX expression and metabolic adjustments in 3-nitropropionic acid-induced ischemia tolerance in the rat brain:** O. Bracko, V. Di Pietro, G. Lazzarino, A.M. Amorini, B. Tavazzi, J. Artmann, E. C. Wong, R.B. Buxton, M. Weller, A.R. Luft, S. Wegener

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- 96 Design of spike-correlation detector for event-based sensors:** H. Liu, C. Brandli, S-C. Liu and T. Delbruck

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- 97 The developmental role of reflexes as a tutor for cortical motor control:** T. Moraitis, M. Cook, A. Ghosh

**Group Leader: GIACOMO INDIVERI**

- 98 Winner-take-all networks self-stabilize and provide a substrate for probabilistic inference:** H. Mostafa, J. Binas, L. Müller, M. Pfeiffer, G. Indiveri
- 99 Neuromorphic circuits and systems for exploring spike-based computing paradigms in real-time behaving systems:** F. Stefanini, F. Corradi, M. Osswald, R. George, C. Mayr, G. Indiveri

**Group Leader: VARTAN KURTCUOGLU**

- 100 The role of aquaporin 4 polarization in cerebral water exchange:**  
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- 101 Brain-inspired methods for Deep Learning:** M. Pfeiffer, D. Neil, S. Jativa, S.-C. Liu

**BIOMEDICAL TECHNOLOGY AND IMAGING****Group Leader: SIMON AMETAMEY**

- 102 Development of a PET radiotracer for imaging the NMDA receptor:**  
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- 103 A correlative light and electron microscopy approach for reconstructing syringeal motor neuron circuits in a songbird:** T. Templier, R.H.R. Hahnloser

**Group Leader: ANKE HENNING**

- 104 MRI based therapy response prediction and monitoring markers in brain and spinal cord of SCI and MS patients:** P. Wyss, A. Hock, M. Rudin, S. Kollias, A. Henning

**Group Leader: JAN KLOHS**

- 105 Near infrared fluorescence imaging of neutrophils after focal cerebral ischemia:** M. Vaas, J. Klohs, M. Rudin

**Group Leader: SPYROS KOLLIAS**

- 106 Tracing brain networks during successive rest and interoceptive tasks:** B. Jarrahi, S.Kollias
- 107 Modulation of brain networks at different interoceptive stimulation tasks:** B. Jarrahi, S.Kollias

**Group Leader: DANTE MANTINI**

- 108 Brain integrity assessment: a multimodal approach based on T1- and T2-weighted MR imaging data:** M. Ganzetti, N. Wenderoth, D. Mantini

**Group Leader: MARKUS RUDIN**

- 109 Ultrasound-mediated transient opening of the blood brain barrier allows for stimulus-evoked manganese-enhanced functional MRI:**  
K. Li,  
J. Grandjean, B. Werner, M. Rudin

**Group Leader: MARTIN WOLF**

- 110 Simulation of neonatal brain metabolism during functional neuronal activation using a computational model:** T. Hapuarachchi, F. Scholkmann, M. Caldwell, C. Hagmann, S. Kleiser, A.J. Metz, M. Pastewski, M. Wolf, I. Tachtsidis
- 111 Very-low frequency fluctuations in cerebral hemodynamics and oxygenation measured with fNIRS – New insights into their origin using capnography and time-frequency coherence analysis:** F. Scholkmann, U. Wolf, M. Wolf



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