

**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 2015**

**11 September 2015**

**08.30 – 18.30**

**ETH Main Building**

**Rämistrasse 101**

**8092 Zurich**

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## POSTER ABSTRACTS

### DEVELOPMENT AND REGENERATION

#### Group Leader: RODNEY J. DOUGLAS

- 1 High diversity of primate precursors in the OSVZ revealed via unsupervised lineage-based characterization:** M. Pfeiffer, M. Betizeau, J. Waltispurger, S.S. Pfister, H. Kennedy, C. Dehay, R.J. Douglas

#### Group Leader: SEBASTIAN JESSBERGER

- 2 Elucidating the role of lipid metabolism for hippocampal neurogenesis:** M. Knobloch, M. Hruzova, T. Wegleiter, M. Bowers, T. Liang, S. Jessberger
- 3 Mechanisms of neural stem cell divisions:** D.L. Moore, G.A. Pilz, L. Ghosh, A. Denoth Lippuner, S. Jessberger

#### Group Leader: MARTIN SCHWAB

- 4 Nogo-A neutralization improves visual recovery after partial excitotoxic damage of the retina:** N. Jordi, V. Pernet, S. Joly, M.E. Schwab

#### Group Leader: LUKAS SOMMER

- 5 Genetic lineage tracing demonstrates multipotency of premigratory and migratory neural crest cells in vivo:** A. Baggiolini, S. Tavares Varum, J.M. Mateos, D. Bettosini, N. John, M. Bonalli, U. Ziegler, L. Dimou, H. Clevers, R. Furrer, L. Sommer.

#### Group Leader: ESTHER STÖCKLI

- 6 How is CNS vascularization controlled? Role of VEGF and other motorneuron-derived factors:** P. Himmels<sup>1,2</sup>, E.T. Stoeckli<sup>2</sup> and C. Ruiz de Almodóvar<sup>1</sup>

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

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

- 7 Identification of a small interfering peptide preventing glutamate-induced downregulation of GABA(B) receptors: a potential strategy to limit neuronal death in cerebral ischemia: K. Balakrishan, D. Benke**
- 8 CaMKII-dependent K63-linked ubiquitination of GABAB1 drives lysosomal degradation of GABAB receptors: K. Zemoura, C. Trümpler, D. Benke**

**Group Leader: STEVEN A. BROWN**

- 9 A pharmacological screen to evaluate the influence of immediate early signaling pathways on local sleep: A. Spinnler, S.A. Brown**

**Group Leader: RODNEY DOUGLAS**

- 10 Conditioning by subthreshold synaptic input changes the characteristic firing pattern of CA3 hippocampal neurons: S. Soldado, F.Brandalise, S. Honnuraiah, M. Pfeiffer and R. Douglas**

**Group Leader: JEAN-MARC FRITSCHY**

- 11 Mechanisms of epileptogenesis in an immune-deficient mouse model of temporal lobe epilepsy (TLE): F. Bernhard, M. Zaichuk, J.-M. Fritschy**
- 12 The gephyrin-interacting protein synArfGEF regulates “mismatched” GABAergic synapses in primary hippocampal neurons: S. Früh, S.K. Tyagarajan, J.-M. Fritschy**

**Group Leader: URS GERBER**

- 13 The Nogo-A<sup>-/-</sup> mouse, an animal model for schizophrenia, exhibits disrupted hippocampal CA3 function through down-regulation of mGlu3 metabotropic glutamate receptors: S. Berry, O. Weinmann, A.-K.Fritz, D. Wolfer, M.E. Schwab, U. Gerber, J. Ster**
- 14 The NMDA-spike as a fundamental mechanism in timing-dependent plasticity at hippocampal CA3 recurrent synapses: F. Brandalise, S. Carta, F. Helmchen, U. Gerber**

**Group Leader: ANNIKA KELLER**

- 15 Cellular and molecular changes at the neurovascular unit after subarachnoid hemorrhage:** J. Wagner, L. Regli, A. Keller
- 16 The role of glia in microvascular calcification in the brain:** Y. Zarb, A. Buttgereit, S. Dias, M. Greter, A. Keller

**Group Leader: ISABELLE MANSUY**

- 17 DNA hydroxymethylation: An additional epigenetic mark required for memory formation:** E.A. Kremer, L. von Ziegler, A. Ashour, I.M. Mansuy
- 18 Norepinephrine plays an important role in regulating hippocampal gene expression after acute stress:** M. Roszkowski, F. Manuella, L. von Ziegler, G. Durán-Pacheco, J.-L. Moreau, I.M. Mansuy, J. Bohacek
- 19 Study of the contribution of circulating factors to non-genomic inheritance in mice:** G. van Steenwyk, L. von Ziegler, A. Jawaid, J. Bohacek, F. Manuella, K. Gapp, N. Zamboni, P. Nanni, I.M. Mansuy
- 20 Analyses of sub-regional functions of the adult mouse hippocampus by proteomic profiling:** L.M. von Ziegler, N. Selevesk, E. Kremer, R. Tweedie-Cullen, I.M. Mansuy

**Group Leader: MARTIN MÜLLER**

- 21 Homeostatic control of presynaptic protein turnover and synaptic transmission:** C. Wentzel, M. Müller

**Group Leader: SHIVA K. TYAGARAJAN**

- 22 Neuronal activity-dependent reorganization of nuclear paraspeckles:** K. Seignette, S.A. Brown, S.K. Tyagarajan
- 23 BDNF signalling regulates PIAS3 via two distinct mechanisms to modulate gephyrin scaffolding at GABAergic synapses:** Z.S. Thirouin<sup>1</sup>, R. Gill<sup>2</sup>, S. Früh<sup>1</sup>, J.-M. Fritschy<sup>1</sup>, R.A. McKinney<sup>2</sup>, S.K. Tyagarajan<sup>1</sup>
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<sup>2</sup> Department of Pharmacology and Therapeutics, McGill University, Montreal, Canada

**Group Leader: BRUNO WEBER**

- 24 Two-photon imaging of brain energy metabolites during cortical microstimulation:** P. Mächler, M. Wyss, J. Stobart, M. Zuend, S. Lengacher, B. Schneider, P. Magistretti, F. Barros, B. Weber
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- 25 Characterization of sensory stimulation-evoked astrocyte calcium signals:** J.L. Stobart, K. Ferrari, M. Barrett, B. Weber
- 26 State-dependent changes in metabolite concentrations differ among cerebral compartments:** M. Zuend, J. Mayrhofer, J. Stobart, S. Lengacher, B. Schneider, P.J. Magistretti, F. Barros, M. Wyss, B. Weber

## **SENSORY SYSTEMS**

### **Group Leader: NORBERT DILLIER**

- 27 Investigating the use of a gammatone filterbank for a cochlear implant coding strategy:** S. Tabibi, Wai Kong Lai, N. Dillier

### **Group Leader: ALEXANDER HUBER**

- 28 Contribution of the incudo-malleolar joint to middle-ear sound transmission:** R. Gerig<sup>1</sup>, S. Ihrle<sup>2</sup>, C. Rösli<sup>1</sup>, A. Dalbert<sup>1</sup>, I. Dobrev<sup>1</sup>, F. Pfiffner<sup>1</sup>, A. Eiber<sup>2</sup>, A.M. Huber<sup>1</sup>, J.H. Sim<sup>1</sup>

<sup>1</sup> Division of Otorhinolaryngology, Head and Neck Surgery, University Hospital Zurich, University of Zurich

<sup>2</sup> Institute of Engineering and Computational Mechanics, University of Stuttgart

- 29 Concept and preliminary results with an intracochlear acoustic receiver for totally implantable cochlear implants:** F. Pfiffner, L. Prochazka, D. Péus, I. Dobrev, F. Harris, J. Walraevens, R. Gerig, J.H. Sim, D. Obrist, C. Rösli, A. Huber

### **Group Leader: ROGER GASSERT**

- 30 Neural correlates of passive forefinger kinematics: effects of amplitude, direction and velocity:** J. Duenas, J. Sulzer, P. Stämpfli, M.-C. Hepp-Reymond, S. Kollias, E. Seifritz, R. Gassert

- 31 Processing somatosensory information for control of dexterous finger movements:** T. Milner, R. Gassert, V. Hayward

### **Group Leader: HANS STASSEN**

- 32 Monitoring affective state by computerized voice analysis through laptops, tablets, and smartphones:** 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



**Group Leader: SABINA HOTZ BOENDERMAKER**

(ZNZ Associate, Balgrist University Hospital Zurich)

- 33 Abolished affective evaluation of sensory input in chronic low back pain patients:** S. Hotz Boendermaker, B. Boendermaker, B.K. Humphreys, M. Meier.

**Group Leader: HANNS ULRICH ZEILHOFER**

- 34 Gbx1-positive spinal interneurons are required for correct sensory processing:** K. Haenraets, H. Wildner, S. Therin, H.U. Zeilhofer

- 35 CCK positive excitatory dorsal horn interneurons in spinal somatosensory processing:** S. Haueter, H. Wildner, E. Foster, H.U. Zeilhofer

**MOTOR SYSTEMS****Group Leader: VOLKER DIETZ**

- 36 Neural coupling of cooperative hand movements in stroke patients:** M. Schrafl, V. Dietz

**Group Leader: RICHARD HAHNLOSER**

- 37 Maintenance and premotor control of temporal properties of birdsong:** S. Cavé-Lopez, A.T. Zai, A.L. Vyssotski, R.H.R. Hahnloser

- 38 Can we infer the microstructure of reinforcement learning from behavioral data?:** A.T. Zai, A. Canopoli, A.E. Stepien, R.H.R. Hahnloser

**Group Leader: SABINA HOTZ BOENDERMAKER**

(ZNZ Associate, University Hospital of Balgrist, Zurich)

- 39 Hemodynamic responses in supplementary motor area and primary somatosensory cortex to pressure and brushing stimulations of the lower back measured by fNIRS:** A. Vrana, F. Scholkmann, K. Humphreys, M. Meier, S. Hotz-Boendermaker

**Group Leader: ANDREAS LUFT**

- 40 Motor skill learning in the context of feedback and reward:** M. Widmer, A. Luft, K. Lutz

**Group Leader: KEVAN MARTIN**

- 41 An ultrastructural study of the thalamic input to layers 4 of motor and somatosensory cortex in the mouse:** G.F.P. Schuhknecht, R. Bopp, S. Holler-Rickauer, K.A.C. Martin

**Group Leader: MARTIN SCHWAB**

- 42 Development of a dual skilled forelimb motor task for rats:** N. Bjelopoljak\*, L. de Clauser\*, A.C. Mosberger, O. Lamercy, R. Gassert, M.E. Schwab

\* shared first authors

**Group Leader: HUBERTUS VAN HEDEL**

- 43 Diffusion Tensor Imaging of the corticospinal tracts as a predictor for rehabilitation outcome in children with acquired brain injury:** V. Ressel, R. O’Gorman Tuura, H. van Hedel

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

- 44 Sleep onset transition: insights from functional connectivity analyses:** A. Fernandez Guerrero, P. Achermann

- 45 Sleep regulation: effect of sleep restriction and extension:** J. Skorucak<sup>1</sup>, E. Arbon<sup>2</sup>, D.-J. Dijk<sup>2</sup>, P. Achermann<sup>1</sup>

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

<sup>2</sup> Surrey Sleep Research Centre, University of Surrey, United Kingdom

**Group Leader: CHRISTIAN BAUMANN**

- 46 Effect of sleep modulation on progression of Parkinsonian symptoms in VMAT2 deficient mice:** M.M Morawska, S. Masneuf, S. Schreglmann, D. Noain, C.R. Baumann

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- 47 A virus-mediated screen identifies cortical channels important to local sleep:** C. Muheim, T. Sartorius, R. Dallmann, N. Gu, J.F. Storm, R. Dürr, R. Huber, P. Ruth, S.A. Brown

**Group Leader: RETO HUBER****48 Closed-loop auditory stimulation time-locked to the down-phase of sleep slow waves in humans: S. Fattinger<sup>1,2</sup>, F. Bislimi, C. Volk<sup>1,2</sup>, T. de Beukelaar<sup>3</sup>, J. Herbst<sup>4</sup>, N. Wenderoth<sup>5</sup>, R. Huber<sup>1,2,6</sup>**

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<sup>5</sup> Neural Control of Movement Lab, Department of Health Sciences and Technology, ETH Zurich

<sup>6</sup> University Clinics for Child and Adolescent Psychiatry Zurich

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**NEURAL BASIS OF BEHAVIOR****Group Leader: MARGARETE ARRAS****50 Sustained release formulation of buprenorphine for pain relief in mice: P. Jirkof, M. Lipiski, F. Nicholls, P. Cinelli, A. Tourvieille, M. Arras****Group Leader: KYNAN ENG****51 The behavioural and neural correlates of seeing a hand during performed and observed visually guided finger movements: J. Brand, C. Bockisch, M. Piccirelli, M.-C. Hepp-Reymond, M. Morari, K. Eng, L. Michels****Group Leader: TODD HARE****52 Reducing left dlPFC excitability with tDCS impairs dietary self-control: S. Maier\*, A.R. Beharelle\*, C. Ruff\*\*, T. Hare\*\***

(\* denotes joint first and \*\* joint last authorship)

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- 53 Long-range population dynamics of anatomically defined neocortical networks:** J.L. Chen, F.F. Voigt, M. Javadzadeh, R. Krüppel, F. Helmchen
- 54 Large-scale cortical dynamics during a texture discrimination task:** A. Gilad, J.L. Chen, F. Helmchen

**Group Leader: HENNRIC JOKEIT**

- 55 Size doesn't matter: Hippocampus volumetry in actors:** B. Steiger, G. Toller, H.-J. Huppertz, T. Grunwald, H. Jokeit

**Group Leader: KEVAN MARTIN**

- 56 A task of selective attention to sound in rats:** E. Andreeva, W. von der Behrens

**Group Leader: ANDREAS LUFT**

- 57 BOLD signal correlates of motor acuity learning under the influence of tDCS:** K. Lutz, N. Ziegler, M. Widmer, G. Liuzzi, A. Luft

**Group Leader: ISABELLE MANSUY**

- 58 Regulation of microRNAs by protein phosphatase 1 for formation of long-term memory:** A. Jawaid, B.T. Woldemichael, I.M. Mansuy

**Group Leader: VALERIO MANTE**

- 59 A new behavioral paradigm to probe rapid neural dynamics during perceptual decisions:** V. Shavina

**Group Leader: BORIS QUEDNOW**

- 60 Cognitive and emotional impairments in adults with attention-deficit/hyperactivity disorder and cocaine use: mutual effects of an unholy alliance:** M.D. Wunderli, M. Vonmoos, L.M. Hulka, K.H. Preller, T. Kraemer, M.P. Schaub, D. Eich-Höchli, B.B. Quednow
- 61  $\alpha_{2A}$ -adrenergic receptor polymorphisms and mRNA expression levels are associated with delay discounting in cocaine users:** M.M. Havranek, L.M. Hulka, M. Vonmoos, K.H. Preller, M.R. Baumgartner, E. Seifritz, E. Grünblatt, B.B. Quednow

**Group Leader: BECHARA SAAB**

- 62 Optogenetic modulation of excitatory innervations from the entorhinal cortex to the dentate gyrus in freely exploring mice:** A. Tsai Cabal, B.J. Saab

**Group Leader: DAVID WOLFER**

- 63 Prefrontal inputs to the amygdala instruct fear extinction memory formation:** O. Bukalo, C.R. Pinard, S. Silverstein, C. Brehm, N.D. Hartley, N. Whittle, G. Colacicco, E. Busch, S. Patel, N. Singewald, A. Holmes
- 64 Laboratory mouse lines derived from outdoor natural selection tested in IntelliCages: reduced initial novel object exploration and prolonged place avoidance:** E. Knapska, D.P. Wolfer, O.V. Perepelkina, I.I. Poletaeva, H.P. Lipp

**COGNITIVE NEUROSCIENCE****Group Leader: DOMINIK BACH**

- 65 Beyond eyeballing: Modelling event-related pupil responses using general linear convolution models:** C.W. Korn<sup>1</sup>, D.R. Bach<sup>1,2</sup>
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- <sup>2</sup> Wellcome Trust Centre for Neuroimaging, University College London, London, United Kingdom

**Group Leader: SILVIA BREM**

- 66 Neural basis of grapheme-phoneme training in children: An EEG-fMRI study on visual print processing:** G. Pleisch, I. Karipidis, M. Röthlisberger, C. Brauchli, D. Brandeis, P. Stämpfli, S. Brem
- 67 Grapheme-phoneme integration in the temporal cortex of the prereading brain:** I.I. Karipidis, G. Pleisch, M. Röthlisberger, P. Stämpfli, S. Brem

**Group Leader: TODD HARE**

- 68 Differential effects of reward and punishment incentives on cognitive control:** A. Cubillo, A. Makwana, T. Hare

**Group Leader: HANS-PETER LANDOLT**

- 69 Effects of age, sleep deprivation and caffeine on random number generation:** S. Münzing, S.C. Holst, P. Brugger, H.P. Landolt

**Group Leader: MICHAEL RUFER**

- 70 Improving amygdala regulation during emotional stimulation using real-time fMRI neurofeedback training:** A.B. Bruehl, J. Lutz, S. Scherpiet, A. Scheiblich, H. Scheerer, S. Weidt, A. Delsignore, P. Staempfli, J. Sulzer, M. Rufer, L. Jäncke, E. Seifritz, U. Herwig

**Group Leader: CHRISTIAN RUFF**

- 71 Causal neural mechanisms underlying strategic social interactions revealed by combined TMS-fMRI:** C.A. Hill, S. Suzuki, R. Polania, M. Moisa, J.P. O'Doherty, C.C. Ruff
- 72 Model based vs. model free learning: Who's controlling the controller?:** S. Weissengruber, S. Wan Lee, J.P. O'Doherty, C.C. Ruff

**Group Leader: EDITH SCHNEIDER GASSER**

- 73 Environmental enrichment recovers high-altitude induced memory impairment via VEGF:** E.M. Schneider Gasser, H. Bengoetxea, C. Köster-Hegmann, D. Kosenkov, M. Thiersch, M. Gassmann, J.-M. Fritschy, E.G. Argandoña

**DISORDERS OF THE NERVOUS SYSTEM****Group Leader: IRMGARD AMREIN**

- 74 Adult hippocampal neurogenesis is intact in old APP/APLP2 conditional knockout mice:** S. Huang<sup>1,2,3</sup>, A. Mehr<sup>4</sup>, L. Slomianka<sup>2</sup>, D.P. Wolfer<sup>1,2,3</sup>, U. Müller<sup>4</sup>, I. Amrein<sup>1,2</sup>

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<sup>4</sup> Institute for Pharmacy and Molecular Biotechnology IPMB, Functional Genomics, University of Heidelberg

**Group Leader: PATRICK FREUND**

- 75 Tracking structural MRI changes in the spinal cord and brain as surrogate markers for interventions in SCI rehabilitation:** E. Huber<sup>1</sup>, P. Grabher<sup>1</sup>, T. Killeen<sup>1</sup>, A. Trachsler<sup>1</sup>, T. Kubin<sup>1</sup>, P. Lachappelle<sup>1</sup>, M. Bolliger<sup>1</sup>, B. Draganski<sup>4</sup>, N. Weiskopf<sup>2</sup>, A. Thompson<sup>3</sup>, A. Curt<sup>1</sup>, P. Freund<sup>1,2,3</sup>

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**Group Leader: MARIA TERESA FERRETTI**

- 76 The influence of Alzheimer's Disease-like amyloid pathology on the immune surveillance in the brain:** C. Gericke, C. Späni, N. Schweizer, M. Merlini, T. Suter, L. Kulic, R.M. Nitsch, M.T. Ferretti

**Group Leader: JEAN-MARC FRITSCHY**

- 77 Mechanisms of increased seizure susceptibility in AD-mutant mice:** T. Gschwind, T. Gfeller, M. Zaichuk, I. Knuesel, J.-M. Fritschy

**Group Leader: EDNA GRÜNBLATT**

- 78 "How am I regulated during development and aging" - Differential regulation of D-amino acid oxidase (DAO) mRNA and protein expression in human post-mortem brain:** V. Jagannath, Z. Marinova, C.M. Monoranu, S. Walitza, E. Grünblatt

**Group Leader: THORSTEN HORNEMANN**

- 80 The role of 1-deoxysphingolipid accumulation in neuropathy:** G. Karsai, L. M. Amad, I. Alecu, T. Hornemann

**Group Leader: LUTZ JÄNCKE**

- 81 Structural brain alterations due to a cognitive behavioral therapy in social anxiety disorder –A longitudinal multimodal neuroimaging study:** V.R. Steiger, A.B. Brühl, S. Weidt, A. Delsignore, M. Rufer, L. Jäncke, U. Herwig, J. Hänggi

**Group Leader: STEFAN KAISER**

- 82 Differential neural correlates of apathy and diminished expression in patients with schizophrenia:** S. Kaiser, M. Kirschner, O.M. Hager, M. Bischof, A. Kluge, M.N. Hartmann-Riemer, P. Tobler, E. Seifritz
- 83 Deficits in context-dependent adaptive coding of reward in schizophrenia:** M. Kirschner, O.M. Hager, M. Bischof, M.N. Hartmann-Riemer, A. Kluge, E. Seifritz, P.N. Tobler, S. Kaiser

**Group Leader: LUKA KULIC**

- 84 Protective mechanisms of p66<sup>Shc</sup> deletion in a mouse model of Alzheimer's disease (AD):** R. Derungs, C. Späni, F. Wirth, T. Welt, C. Hock, G.G. Camici, A. Eckert, R.M. Nitsch, L.Kulic

**Group Leader: KLARA LANDAU**

- 85 Retinal vascular occlusion: a late complication in eyes with optic nerve sheath meningioma:** D. Rappoport, K.P. Weber, A. Pangalu, K. Landau

**Group Leader: PAOLO PAGANETTI**

(ZNZ Associate)

- 86 Studying intracellular distribution and cell-to-cell spreading of proteins involved in neurodegenerative disorders:** Chiara Foglieni, Giorgio Ulrich, A. Salvadè, A. Kaelin-Lang, P. Paganetti  
Laboratory for Biomedical Neurosciences, Neurocenter of Southern Switzerland EOC  
Swiss Institute for Regenerative Medicine, via ai Söi 24, CH-6807 Taverno-Torricella

**Group Leader: CHRISTOPHER PRYCE**

- 87 Psychosocial stress leads to inflammation, altered dopamine function and impaired reward processing in mice:** G. Bergamini, H. Sigrist, S. Auer, J. Mechttersheimer, T. Suter, B. Ferger, E. Seifritz, C.R. Pryce

**Group Leader: PATRICK ROTH**

- 88 The aryl hydrocarbon receptor mediates integrin control of the TGF- $\beta$  pathway:** M. Silginer, I. Burghardt, D. Gramatzki, H. Leske, E.J. Rushing, M.L. Whitelaw, M. Weller, P. Roth



**Group Leader: SIMONA SPINELLI**

- 89 The rostral anterior cingulate cortex thickness is associate with response to psychotherapy in unmedicated subjects with major depressive disorder:** S. Spinelli, N. Doeri, J. Hänggi, F. Sambataro, J. Spaeti, J. Brakowski, M. grosse Holtforth, E. Seifritz

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- 90 Polypharmacy in psychiatry: prevalence and time course of unwanted side effects:** T. Darimont, S. Bachmann, S. Braun, R. Bridler, K. Cattapan, J.-P. Delfino, D. Herzig, K. Höppner, A. Schneeberger, E. Seifritz,

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- 93 Brain catecholamine depletion and motor impairment in a Th knock-in mouse with type B tyrosine hydroxylase deficiency:** D. Noain<sup>¶</sup>, G. Korner<sup>¶</sup>, M. Ying<sup>1</sup>, M. Hole<sup>1</sup>, M.I. Flydal<sup>1</sup>, T. Scherer, G. Allegri, A. Rassi, R. Fingerhut, D. Becu-Villalobos<sup>2</sup>, S. Pillai, S. Wueest, D. Konrad, A. Lauber-Biason, C.R. Baumann, L.A. Bindoff<sup>3,4</sup>, A. Martinez<sup>1,\*</sup>, B. Thöny<sup>\*</sup>

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- 94 T2-PREP functional MRI at high field strength of 7 Tesla for the investigation of dynamic functional connectivity in preclinical Alzheimer's disease:** F.C. Quevenco<sup>1</sup>, M.G. Preti<sup>5</sup>, J. Hua<sup>4</sup>, M. Wyss<sup>2</sup>, J. Van Bergen<sup>1,4</sup>, S.J. Schreiner<sup>1</sup>, A. Kälin<sup>1</sup>, S. Leh<sup>1</sup>, A. Gietl<sup>1</sup>, A. Buck<sup>3</sup>, R. Nitsch<sup>1</sup>, K.P. Pruessmann<sup>2</sup>, P.C.M. Van Zijl<sup>4</sup>, C. Hock<sup>1</sup>, D. Van de Ville<sup>5</sup>, P.G. Unschuld<sup>1</sup>

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- 95 Functional brain change in mild cognitive impairment is associated with significant interaction of A $\beta$  plaque density and cerebral iron load:**

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- 96 Manganese-enhanced MRI for the study of post-stroke cognitive impairment in a rodent stroke model:** P. Baumgartner, O. Bracko, M. El-Amki, A.R. Luft, S. Wegener

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- 97 Modulation of cerebral endothelial cell function by TGF- $\beta$  in glioblastoma: VEGF dependent angiogenesis versus endothelial mesenchymal transition:** S. Krishnan, E. Szabo, I. Tritschler, K. Frei, G. Tabatabai, M. Weller

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- 98 When numbers matter: divergence and convergence in cell populations drive hippocampal differentiation in mammalian species including humans:** R.M. van Dijk, S. Huang, L. Slomianka, I. Amrein

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- 99 Modelling human anxiety behaviour in the context of avoidance/avoidance conflict:** G. Castegnetti, D. Bach

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- 100 An RGBW-color VGA rolling and global shutter dynamic and active-pixel vision sensor:** C. Li, C. Brandli, R. Berner, H. Liu, M. Yang, S.-C. Liu, T. Delbruck

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- 101 Network motifs of Neocortex implemented on the IBM TrueNorth (Compass) architecture:** S. Honnuraiah, R. Douglas

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- 108 Suppression and boosting in a normative model of spike-timing dependent plasticity:** P. Dziennik, J.-P. Pfister
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- 110 Hierarchical learning and dopaminergic mechanisms in social inference:** J. Dafflon, L. Kasper, E. Engeli, S. Tomiello, K.E. Stephan, A.O. Diaconescu
- 111 Dopaminergic and cholinergic modulation of brain connectivity during working memory, perceptual and reward learning – EEG arm:** S. Tomiello\*, D. Schöbi\*, L.A.E. Weber\*, J. Heinzle, S. Iglesias, G. Stefanics, K.E. Stephan
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- 112 Removing movement artifacts from functional near-infrared spectroscopy (fNIRS) neuroimaging signals: A new approach using time-frequency decomposition and adaptive local regression:** F. Scholkmann, M. Wolf

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- 114 Monitoring the recruitment of neutrophils to infarcted area in a mouse model of transient cerebral ischemia:** M. Vaas<sup>1</sup>, K. Licha<sup>2</sup>, M. Rudin<sup>1,3</sup>, J. Klohs<sup>1</sup>

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- 115 Imaging of the human lateral geniculate nucleus using high field MRI:** N. Aldusary, M. Piccirelli, L. Michels, M. Wyss, S. Kollias

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- 117 *Feasibility of an active arm support robot for pediatric rehabilitation:*** U. Keller<sup>1,2,3</sup>, R. Riener<sup>2,3</sup>, H. van Hedel<sup>1</sup>

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- 118 Analysis of diversity and plasticity of the synaptic cleft proteotype using chemoproteomic technologies:** M. van Oostrum, B. Wollscheid

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