



**University of
Zurich** UZH

ETH

Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich



**Neural Plasticity
and Repair**

National Center of Competence in Research

ZNZ

Zentrum für Neurowissenschaften Zürich
Neuroscience Center Zurich

NCCR NEURO CONCLUDING SYMPOSIUM & ZNZ SYMPOSIUM 2012

14 and 15 June 2012

08.30 – 18.30

**ETH Main Building
Rämistrasse 101
8092 Zürich**

POSTER ABSTRACTS

DEVELOPMENT AND REGENERATION

Group Leader: RODNEY DOUGLAS

- 1 A model based on reaction-diffusion dynamics explains the development of the superficial patch system:** R. Bauer, F. Zubler, D. Muir, R. Douglas

Group Leader: JEAN-MARC FRITSCHY

- 2 The role of NOPS proteins in regulating inhibitory synapse function:** D. Mircsof, M. Žnidarič, J.-M. Fritschy, S.A. Brown*, S. Tyagarajan* (*project co-supervisors)

Group Leader: RETO HUBER

- 3 Caffeine during the critical period delays maturation in juvenile rats:** N. Olini, S. Kurth, R. Huber

Group Leader: OLIVIER RAINETEAU

- 4 The adult spinal cord central canal harbors a population of GFAP-expressing neural stem cells:** R. Fiorelli, A. Simon, O. Raineteau
- 5 A dual role for Sp8 in postnatal forebrain neurogenesis:** A. Hurtado-Chong, M.E. Fernández, P.L. Bhavani Mohan, O. Raineteau

Group Leader: MARTIN SCHWAB

- 6 A propriospinal relay bridges brainstem reticular commands around a cervical incomplete spinal cord injury:** A. Engmann, L. Filli, L. Bachmann, B. Zörner, O. Weinmann, M. Gullo, R. Schneider, M.E. Schwab

- 7 Compensatory corticospinal projections in the adult rat after unilateral stroke and anti Nogo-A therapy:** N.T. Lindau, B.J. Bänninger, M. Gullo, C. Bleul, M.L. Starkey and M.E. Schwab
- 8 Nogo-A is a negative regulator of CNS angiogenesis:** T. Wälchli, V. Pernet, O. Weinmann, J. Shiu, A. Guzik-Kornacka, G. Decrey, K. Ghosh, H. Schneider, J. Vogel, D.E. Ingber, V. Vogel, K. Frei, M.E. Schwab

Group Leader: LUKAS SOMMER

- 9 Multipotency or commitment of neural crest stem cells at the premigratory stage: monoclonal fate imaging in vivo and in neural tube explants ex vivo:** A. Baggiolini, S. Varum Tavares, N. John, A. Joyner, M. Goetz, H. Clevers, L. Sommer
- 10 Wnt/ β -catenin signaling regulates sequential fate decisions of murine cortical precursor cells:** K. Draganova, T. Valenta, I. Miescher, R. Hoffmans, K. Basler, L. Sommer
- 11 The role of β -catenin in the development of neural crest stem cells:** M. Gay, T. Valenta, L. Hari, K. Basler and Lukas Sommer
- 12 The role of Ezh2 in neural crest development:** D. Schwarz, S. Varum, Y. Gotoh, H. Koseki, L. Sommer
- 13 Ezh2 regulates neural stem cell fates in the developing mouse midbrain:** M. Zemke, K. Draganova, H. Koseki and L. Sommer

Group Leader: ESTHER STOECKLI

- 14 Calsyntenin-mediated trafficking: distribution of vesicles for proper neural circuit formation:** T. Alther and E. Stoeckli

SYNAPTIC TRANSMISSION AND PLASTICITY

Group Leader: DIETMAR BENKE

- 15 Ischemia mediates the downregulation of cell-surface GABA_B receptors via the ER stress-induced transcription factor CHOP:** P. Maier, O. Friedli, T. Grampp and D. Benke
- 16 Neuronal activity controls cell surface expression of GABA_B receptors via endoplasmic reticulum associated protein degradation:** K. Zemoura, M. Schenkel, G.E. Yévenes, H.U. Zeilhofer and D. Benke

Group Leader: JEAN-MARC FRITSCHY

- 17 Formation and regulation of GABAergic synapses and role of gephyrin in adult neurogenesis in the olfactory bulb:** F. Deprez, M. Pallotto, M. Grabiec, S.K. Tyagarajan, P. Panzanelli, P.-M. Lledo, J.-M. Fritschy

Group Leader: URS GERBER

- 18 Calsyntenin-1-deficient mice show enhanced LTP in the hippocampal CA1 pyramidal cells:** J. Ster, M. Steuble, C. Orlando, T.M. Diep, B. Kunz, O. Raineteau, P. Sonderegger, U. Gerber

Group Leader: SEBASTIAN JESSBERGER

- 19 Dentate network activity modulates integration of newborn granule cells:** F. Kleine Borgmann, J. Gräff, N. Toni, I.M. Mansuy and S. Jessberger

Group Leader: OLIVIER RAINETEAU

- 20 Integrin activation enhances dendritic spine dynamics after chondroitinase ABC-mediated extracellular matrix digestion:** C. Orlando, J. Ster, U. Gerber, J.W. Fawcett, O. Raineteau

Group Leader: HANNES ULRICH ZEILHOFER

- 21 Endocannabinoid-dependent plasticity at spinal nociceptor synapses:** A. Kato, P. Punnakkal, A.-J. Pernía-Andrade, R. Nyilas, I. Katona, H.U. Zeilhofer

MOLECULAR AND CELLULAR NEUROSCIENCE**Group Leader: STEVEN BROWN**

- 22 Day length reorganizes the SCN neuronal network:** A. Azzi, J.A. Evans, T. Leise, R. Dallmann, A.J. Davidson and S.A. Brown

Group Leader: EDNA GRÜNBLATT

- 23 Methylphenidate effects maturation of neuronal stem cells:** J. Bartl, T. Mori, H. Ozawa, E. Grünblatt
- 24 Cell culture models to investigate the signalling and interaction of serotonin 1A and 2A receptors:** Z. Marinova, S. Walitza, E. Grünblatt
- 25 Growth effects of d/l-threo methylphenidate, d-threo- and l-threo methylphenidate on PC12 cells measured in a time course:** J. Saxer, S. Walitza, E. Grünblatt

Group Leader: SEBASTIAN JESSBERGER

- 26 Mechanisms underlying the age-dependent decrease of adult neurogenesis:** D.L. Moore, D. Wüthrich, S. Jessberger
- 27 Regulation of neural stem cell proliferation by the RSU-1/IPP-complex:** C. Porcheri, R. Fässler, S. Jessberger* and U. Suter* (*Joint last authors)
- 28 Distinct functions of small Rho GTPases Cdc42 and Rac1 in adult hippocampal neurogenesis:** K. Vadodaria, C. Brakebusch, U. Suter, S. Jessberger

Group Leader: ISABELLE MANSUY

- 29 Epigenetic marking of the male germline by post-translational modifications:** A. Brunner, P. Nanni, I.M. Mansuy

Group Leader: OMOLARA OGUNSHOLA

(ZNZ Associate, Dept. of Veterinary Physiology, University of Zurich)

- 30 HIF-1 α disrupts blood brain barrier integrity primarily through alteration of tight junction protein localization:** S. Engelhardt, A. Al Ahmad, M. Gassmann, O. Ogunshola
- 31 Rac1 drives the neuronal response to hypoxia:** T. Güntert, O. Ogunshola, M. Gassmann
- 32 Is 4E-Bp1 the hypoxia response regulator in differentially sensitive brain cells?** D. Nizzari, M. Gassmann, T.A. Gorr, O. Ogunshola

Group Leader: OLIVIER RAINETEAU

- 33 Induction of apoptosis in glioma cells by neutralization of helix-loop-helix proteins activity:** S. Beyeler, S. Joly, F.-J. Obermair, R. Mehmood, G. Tabatabai, O. Raineteau
- 34 E-proteins orchestrate neurogenesis progression in the postnatal subventricular zone:** B. Fischer, M. Fernandez, S. Ramelli, K. Haenraets, R. Fiorelli and O. Raineteau

Group Leader: LAWRENCE RAJENDRAN

- 35 A non-amyloid substrate, neuregulin displays higher affinity than APP towards the Alzheimer's disease β -secretase, BACE1:** S. Ben Halima, S. Mischra, C. Hock, A. Caflisch, L. Rajendran

Group Leader: MARTIN SCHWAB

- 36 The growth inhibitory NOGO A specific fragment Δ 20 binds to tetraspanin-3 – a component of a multi-subunit receptor complex?** N.K. Thiede-Stan, B. Tews, M.E. Schwab.

Group Leader: PETER SONDEREGGER

- 37 Calsyntenin-1 vesicles shelter APP from proteolytic processing during anterograde axonal transport:** M. Steuble, T.M. Diep, P. Schätzle, A. Ludwig, M. Tagaya, P. Sonderegger

Group Leader: SHIVA TYAGARAJAN

(ZNZ Associate, Institute of Pharmacology and Toxicology, UZH)

- 38 Collybistin: The interplay of different splice variants to regulate GABAergic postsynaptic proteins:** C. de Groot, M. Iqbal Abdul and S.K. Tyagarajan

Group Leader: BERND WOLLSCHIED

- 39 The cell surface protein atlas:** D. Bausch-Fluck, A. Hofmann, T. Bock, A. Frei, A. Jacobs, F. Cerciello, H. Möst, B. Wollscheid
- 40 A protein surfaceome map of glioblastoma brain cancer cells:** T. Bock, S. Dolski, H. Möst, D. Bausch-Fluck, A. Frei, A. Schmidt, A. Hofmann, K. Frei, R. Aebersold, B. Wollscheid
- 41 A chemoproteomic technology for the ligand-based receptor identification on living cells and tissues:** A. Frei, S. Kilcher, O.-Y. Jeon, R. Aebersold, E. Carreira, J. Mercer, B. Wollscheid

ENDOCRINE REGULATION**Group Leader: BURKHARD BECHER**

- 42 Regulation and function of GM-CSF in autoimmune neuroinflammation:** M. Lanzinger, B. Becher
- 43 The role of interleukin-34 for the development of the mononuclear phagocyte system in the skin and the central nervous system:** I. Lelios, M. Greter, B. Becher
- 44 Investigating the role and function of GM-CSF in autoimmune inflammation using transgenic mice:** S. Spath, B. Ortstädt, B. Becher

Group Leader: TOBIAS SUTER

- 45 Effector functions of GM-CSF in CNS inflammation:** L. Hesske, C. Vincenzetti, B. Engelhardt, S. Tschanz, E. Eppler, M. Prinz, M. Heikenwälder, W. Reith, A. Fontana, T. Suter
- 46 The role of the HGF/c-met pathway in the oligodendrocyte response during autoimmune neurodegeneration:** N. Schweizer, M. Stančić and T. Suter
- 47 Lack of TGF β signaling in myeloid cells prevents entry into the remission phase of experimental autoimmune encephalomyelitis:** I. Trogrlić, U. Malipiero, F. Ackermann, M. Prinz, D. Merkler, M. Heikenwälder, T. Suter and A. Fontana

Group Leader: BEAT THÖNY

- 48 Viral versus non-viral gene therapy to correct PKU in Pahenu2 mice by targeting skeletal muscle:** G. Korner, H. Man Viecelli, B. Thöny

SENSORY SYSTEMS**Group Leader: ARMIN CURT**

- 49 Increased baseline temperature improves the acquisition of contact heat evoked potentials:** J. Haefeli, J.K. Kramer, J. Blum, A. Curt
- 50 Cortical reorganization of dorsal columns and spinothalamic tract input after spinal cord injury:** C.R. Jutzeler, J. Haefeli, J.K. Kramer, P. Freund, A. Curt

Group Leader: ARKO GHOSH

- 51 Tactile sensory processing from the human face:** S. Haenzi and A. Ghosh

Group Leader: FRITJOF HELMCHEN

- 52 Neural circuits involved in auditory mismatch detection:** I.-W. Chen, J. Issa al Makdissy, F. Helmchen, H. Lütcke
- 53 Long-term stability of state-dependent neocortical network activity imaged in behaving mice:** K. Schulz, D.J. Margolis, I.Schrepfer, H. Lütcke, S. Kügler, M.T. Hasan and F. Helmchen

Group Leader: BJÖRN KAMPA

- 54 Sparse coding in neuronal subpopulations of mouse visual cortex during natural movie stimulation:** P. Molina-Luna, A.R. Woodruff, F. Helmchen, B.M. Kampa

Group Leader: IRENE KNUESEL

- 55 CFTR contributes to neuronal homeostasis in the olfactory epithelium by regulating the function of microvillar cells:** S. Pfister, T. Weber, R. Elsaesser, J.-M. Fritschy, I. Knuesel

Group Leader: SHIH-CHII LIU

- 56 Real-time speaker identification using the AEREAR2 event-based silicon cochlea:** C.-H. Li, T. Delbruck, S.-C. Liu

Group Leader: KEVAN MARTIN

- 57 Who's who in the cortical neuropil? An immuno-ultrastructural study of macaque area V1:** J.C. Anderson, R. Bopp, K.A.C. Martin
- 58 Mapping the matrix of mouse auditory cortex:** M. Perrella, N. Maçarico Costa, K.A.C. Martin

Group Leader: STEPHAN NEUHAUSS

- 59 A glutamate transporter and the conserved mGluR6/TrpM1 pathway mediate the zebrafish on-response:** M. Haug, E. Kastenhuber, C.M. Maurer, M. Gesemann, S.C.F. Neuhaus

Group Leader: ROBERT RIENER

- 60 Respiratory adaptations to changes in posture and movement: a feasibility study:** A. Sarabadani, V. Klamroth-Marganska, R. Rodriguez, M. Wieser, C.M. Spengler, R. Riener

Group Leader: HANNS ULRICH ZEILHOFER

- 61 A comprehensive analysis of the GABA_A receptor subtypes mediating antihyperalgesia after systemic treatment:** W.T. Ravenius, U. Rudolph and H.U. Zeilhofer

MOTOR SYSTEMS**Group Leader: GREGOIRE COURTINE**

- 62 Robotic neuroprosthetic interface to evaluate, enable, and train locomotion after spinal cord injury and stroke:** R. van den Brand, N. Dominici, U. Keller, H. Vallery, L. Friedli, M.L. Starkey, P. Musienko, R. Riener and G. Courtine

Group Leader: VOLKER DIETZ

- 63 Modulation of spinal neuronal circuitries by transcutaneous spinal direct current stimulation:** M. Hubli, M. Altermatt, V. Dietz, M. Bolliger
- 64 Neural control of cooperative hand movement:** E. Kloter, M. Keller, M. Schubert, W. Taube, V. Dietz

Group Leader: KYNAN ENG

- 65 Plasticity in neural correlates of action observation, imagination, imitation and execution: a virtual reality training study with incomplete spinal cord injury patients:** M. Villiger, N. Estevez, D. Kiper, M.-C. Hepp-Reymond, P. Pyk, J. Spillmann, A. Curt, S.S. Kollias, S. Hotz-Boendermaker, K. Eng

Group Leader: STEVEN N. FRY

(ZNZ Associate, former Group Leader Institute of Neuroinformatics, UZH/ETHZ)

- 66 A limit cycle system underlies flight control in Drosophila:** J. Bartussek, A. Kadir Mutlu, M. Zapotocky, S.N. Fry

Group Leader: ROGER GASSERT

- 67 Can real-time fMRI neurofeedback improve the control of force in precision grip?** M.L. Blefari, J. Sulzer, M.-C. Hepp-Reymond, S. Kollias, R. Gassert
- 68 Investigation of learning effects during the execution of a virtual pick and place task:** M.-C. Fluet, O. Lamercy and R. Gassert

Group Leader: SPYROS KOLLIAS

- 69 Brain activation related to balancing objects on the feet - a pilot fMRI study:** L. Jaeger, C. Hollnagel, S. Summermatter, L. Marchal-Crespo, L. Michels, R. Riener, S. Kollias

Group Leader: ANDREAS LUFT

- 70 Characterizing endpoint kinematics and dynamics during a reaching task in rodent models using the ETH Pattus:** M. Schubring-Giese, O. Lamercy, B. Vigarù, P. Wespe, R. Gassert and A.R. Luft

Group Leader: ROBERT RIENER

- 71 ARMin:** V. Klamroth-Marganska, M. Guidali, R. Riener

Group Leader: ERIC ROUILLER
(NCCR Neuro Project 3, Institute of Physiology, University of Fribourg)

- 72 Functional recovery from unilateral lesion of the motor cortex in macaque monkeys - pilot data from cell therapy and anti-Nogo-A antibody treatment:** M. Kaeser, A. Wyss, S. Bashir, A. Hamadjida, A.D. Gindrat, J. Savidan, P. Chatagny, S. Badoud, M. Fregosi, C. Leuthard, V. Moret, C. Roulin, C. Marti, F. Lanz, F. Hoogewoud, V. Goetschmann, J.F. Brunet, J. Bloch, A. Belhaj-Saif, E. Schmidlin, A. Mir, M.E. Schwab, E.M. Rouiller

Group Leader: ERIC SCHMIDLIN
(NCCR Neuro Project 3, Institute of Physiology, University of Fribourg)

- 73 Histological and behavioural consequences of unilateral cervical cord lesion in macaque monkeys subjected to anti-Nogo-A antibody treatment or a combination of anti-Nogo-A antibody and BDNF treatments:** M.-L. Beaud, E.M. Rouiller, J. Bloch, A. Mir, M.E. Schwab, T. Wannier and E. Schmidlin

Group Leader: MARTIN SCHWAB

- 74 Reticulo-spinal fibers sprout across the spinal cord midline and mediate hindlimb functional recovery after unilateral cervical spinal cord injury in adult rats:** L.C. Bachmann, B. Zörner, L.P. Filli, M. Gullo, M.E. Schwab

Group Leader: HUUB VAN HEDEL

- 75 Virtual reality within the Lokomat influences muscle activation and heart rate activity in children with neurological dysfunction:** R. Labruyère, C. Gerber, H. van Hedel
- 76 Alteration of lower extremity electromyography patterns in children walking on a treadmill, with and without robotic support:** Tabea Schuler, Roland Mueller, Huub van Hedel

- 77 Pathological spastic co-contractions during walking: truly pathological or simply functional adaptations?** H. van Hedel, S. Keller, C. Ammann

SLEEP AND SLEEP DISORDERS

Group Leader: PETER ACHERMANN

- 78 Respiratory disturbances affect the sleep EEG:** K. Stadelmann, T.D. Latshang, C.M. Lo Cascio, N. Tesler, A.-C. Stoewhas, M. Kohler, K.E. Bloch, R. Huber, P. Achermann
- 79 The homeostatic response to sleep deprivation does not change from mid to late adolescence:** L. Tarokh, M.A. Carskadon, P. Achermann
- 80 The non-rem sleep EEG spectrum following total sleep deprivation is trait-like:** L. Tarokh, H. Van Dongen, T. Rusterholz, P. Achermann

Group Leader: CLAUDIO BASSETTI

(Former ZNZ Member, now Dept. of Neurology, University of Bern)

- 81 GHB, baclofen and their effects on physiology and behavior in healthy rats and rats with focal cerebral ischemia:** A. Hodor, S. Palchykova, B. Gao and C.L. Bassetti

Group Leader: RETO HUBER

- 82 Theta activity during wakefulness in children – evidence for synaptic strength?** S. Fattinger, S. Kurth, M. Ringli, O. Jenni, R. Huber
- 83 The effects of intensive cognitive training on cognitive performance and sleep EEG topography in children:** F. Pugin, A. Metz, M. Stauffer, A. Rauch, L. Jäncke, P. Achermann, M. Wolf, O. Jenni, R. Huber

NEURAL BASIS OF BEHAVIOR

Group Leader: FLORENCE CRESTANI

- 84 Characterization of the cognitive phenotype of mice lacking of $\alpha 2$ -containing GABA_A receptors:** A. Papilloud, C. Koester, T. Haenggi, F. Crestani

Group Leader: BEATE DITZEN

- 85 Intranasal oxytocin and its effects on autonomic stress reactivity and emotional arousal during couple conflict:** B. Ditzen, U.M. Nater, G. Bodenmann, U. Ehlert, M. Heinrichs

Group Leader: KYNAN ENG

- 86 Effects and adaptation to visuomotor scaling of finger movements:** J. Brand, R. Bakker, L. Michels, M.-C. Hepp-Reymond, M. Morari, D. Kiper, K. Eng

Group Leader: LUTZ JÄNCKE

- 87 Psychobiological reactions to masked neutral and angry faces: A controlled functional MRI study of dissociative identity disorder:** Y.R. Schlumpf, E.R.S. Nijenhuis, S. Chalavi, E.V. Weder, E. Zimmermann, R. Lüchinger, R. La Marca, A.A.T.S. Reinders, L. Jäncke

Group Leader: PETER KLAVER

- 88 Life span differences in episodic memory: Different behavioural expression in children and adults is expected to reflect ongoing maturation processes in neural network:** K. Wurmitzer, D.Y. von Allmen, E. Martin, P. Klaver

Group Leader: HANS-PETER LIPP

- 89 Extreme habitat requirements influence adult hippocampal neurogenesis in small wild mammals:** I. Amrein, N. Cavegn, D. Menges, T. Drenth, H. Brettschneider, M. Phalanndwa, C.T. Chimimba, H.-P. Lipp
- 90 Young pigeons reared within or outside a gravitational anomaly show different homing behavior:** N. Blaser, V. Kanevskii, B.A. Entin, S. Guskiev, E. Morenkov, J. Nair, V. Meskenaite, D.P. Wolfer, H.-P. Lipp
- 91 Modulation of adult hippocampal neurogenesis in laboratory and wild mice:** F. Klaus, L. Slomianka, H.P. Lipp, I. Amrein
- 92 Olfactory system in pigeons responds to magnetic stimulation:** V. Meskenaite, E. Morenkov and H.P. Lipp

Group Leader: ISABELLE MANSUY

- 93 Early traumatic stress modulates behavioral control in mice across generations:** K. Gapp, S. Soldado Magraner, J. Bohacek, I.M. Mansuy

Group Leader: CHRISTOPHER PRYCE

- 94 Effects of low-dose ketamine on emotional processing in non-manipulated mice:** D. Azzinnari, K. Jörg, H. Sigrist, F. Klaus, B. Ferger, M. Scheidegger, F. Vollenweider, E. Seifritz, C. Pryce
- 95 Mice lacking the GABA_B receptor protein KCTD12 exhibit increased Pavlovian fear conditioning:** F. Cathomas, H. Sigrist, E. Seifritz, M.
- 96 Mouse models of serotonin modulation of emotional-cognitive aversive processing:** C. Ineichen, T. Gschwind, H. Sigrist, S. Spinelli, E. Sautter, K-P. Lesch, E. Seifritz, C.R. Pryce

Group Leader: ERICH SEIFRITZ

- 97 Ketamine decreases resting state functional connectivity between networks via the dorsal nexus: implications for major depression:** M. Scheidegger, M. Walter, M. Lehmann, C. Metzger, S. Grimm, H. Boeker, P. Boesiger, A. Henning, E. Seifritz

Group Leader: MICHAEL VON ASTER

- 98 Is the general magnitude system impaired in developmental dyscalculia? First results of an fMRI study:** U. Grond, K. Kucian, R. O'Gorman, E. Martin, M. von Aster

Group Leader: DAVID WOLFER

- 99 Profiles of spontaneous behavior in the IntelliCage discriminate mouse strains, mutations and brain lesions:** E. Vannoni, V. Voikar, G. Colacicco, H.-P. Lipp, D.P. Wolfer
- 100 APP/APLP2 double-deficient mice show a behavioral phenotype reminiscent of hippocampal lesions:** V. Voikar, S.W. Weyer, M. Klenwanski, U.C. Müller, D.P. Wolfer
- 101 Transgenic overexpression of erythropoietin does not alter adult neurogenesis and learning:** D.P. Wolfer, M. Alvarez-Sánchez, E. Vannoni, I. Amrein, V. Díaz, M. Gassmann

COGNITIVE NEUROSCIENCE AND NEUROPSYCHOLOGY**Group Leader: HEINZ BÖKER**

(ZNZ Associate, Psychiatric University Hospital Zurich)

- 102 Functional neuroanatomy and regional metabolism before and after treatment with duloxetine: A combined fMRI and MRS study in major depression:** J. Ernst, S. Grimm, E. Seifritz, H. Boeker

Group Leader: DANIEL BRANDEIS

- 103 Basal ganglia hyperactivity in ADHD:** S. Bollmann, C. Ghisleni, R.L. O'Gorman, S.-S. Poil, P. Klaver, L. Michels, D. Eich-Höchli and D. Brandeis
- 104 Reward prediction errors and the anterior cingulate cortex – a simultaneous EEG/fMRI-study:** T.U. Hauser, R. Iannaccone, P. Stämpfli, R. Drechsler, D. Brandeis, S. Walitza and S. Brem

- 105 Conflict monitoring and error processing in young healthy adults: a simultaneous EEG/fMRI-study:** R. Iannaccone, T.U. Hauser, D. Brandeis, R. Drechsler, S. Walitza and S. Brem
- 106 Orthographic deficits during fast implicit print processing in dyslexic adolescents:** J. Kronschnabel, R. Schmid, U. Maurer, D. Brandeis

Group Leader: ROGER GASSERT

- 107 Real time fMRI neurofeedback of substantia nigra:** J. Sulzer, R. Sitaram, M.L. Blefari, S. Kollias, N. Birbaumer, K.E. Stephan, A. Luft and R. Gassert

Group Leader: CHRISTOPH HOCK

- 108 Cognitive markers of prodromal Alzheimer's disease:** S.D. Broicher, A.M. Kälin, A.F. Gietl, L. Jäncke, R.M. Nitsch, C. Hock

Group Leader: HENNRIC JOKEIT

- 109 A qualitative analysis of emotional reactivity to animated fearful faces measured by fMRI in patients with mesial temporal lobe epilepsy and healthy controls:** G. Toller, S.D. Broicher, D. Huber, H. Jokeit

Group Leader: PETER KLAVER

- 110 Right hippocampal activity predicts performance in short-term maintenance of object-location associations:** D.Y. von Allmen, K. Wurmitzer, E. Martin, *P. Klaver

Group Leader: SPYROS KOLLIAS

- 111 Increased salience-network in subjects at risk for psychosis; a resting-state-fMRI study:** D. Wotruba, L. Michels, A. Theodoridou, S. Kollias, W. Rössler, K. Heekeren

Group Leader: ROBERT RIENER

- 112 Cognimat: a virtual reality system for cognitive rehabilitation of dementia:** A. Nagle, S. Eipe, B. Buss, A. Rotta, R. Nitsch, C. Hock, O. Ballach, D. Kiper, R. Riener

Group Leader: SIMONA SPINELLI

- 113 Increased sensitivity to external negative feedback in unmedicated subjects with major depression:** S. Spinelli, J. Spaeti, J. Brakowski, N. Doerig, M. Grosse Holtforth, E. Seifritz

Group Leader: MARTIN WOLF

- 114 Between-brain connectivity measured by wireless functional near-infrared spectroscopy (fNIRS):** L. Holper, F. Scholkmann and M. Wolf

AGING AND DISORDERS OF THE NERVOUS SYSTEM**Group Leader: ADRIANO AGUZZI**

- 115 Unravelling the roles of PARP enzymes in PrP-mediated neurotoxicity:** B. Segarane, J. Falsig, A. Aguzzi
- 116 Specific antibodies against the prion protein as a model to investigate PrP-induced neurodegeneration highlight the octarepeat region as a proximal effector of PrP-induced neurodegeneration:** T. Sonati, J. Falsig, S. Hornemann, R. Moos, B.

Group Leader: GRÉGOIRE COURTINE

- 117 Multi-system neuroprosthetic training restores supraspinal control of locomotion after paralyzing SCI:** J. Heutschi*, R. van den Brand*, Q. Barraud, J. DiGiovanna, K. Bartholdi, M. Huerlimann, L. Friedli, I. Vollenweider, E. Martin Moraud, S. Duis, N. Dominici, S. Micera, P. Musienko, G. Courtine

Group Leader: ARMIN CURT

- 118 Walking pattern and neural control in incomplete spinal cord injured patients:** L. Awai, M. Bolliger, A. Curt

Group Leader: RUDOLF GLOCKSHUBER

(NCCR Neuro, Institute of Molecular Biology & Biophysics, ETH Zurich)

- 119 Direct evidence for self-propagation of different amyloid- β fibril conformations:** T. Spirig, O. Yu Ovchinnikova, T. Vagt and R. Glockshuber
- 120 Aggregation kinetics, protease stability and QC catalyzed formation of pE-A β peptides:** T. Vagt and R. Glockshuber

Group Leader: EDNA GRÜNBLATT

- 121 Transcription of HTR2A in post-mortem brain: correlation with developmental stages and genotypes:** E. Grünblatt, Z. Marinova, C.M. Monoranu, S. Walitza

Group Leader: CHRISTOPH HOCK

- 122 Brain beta-amyloid-deposition is associated with diagnosis of MCI and risk factors for Alzheimer's disease in non-demented individuals:** A. Gietl, A. Kälin, F. Riese, Kuhn F., S. Apaydin, E. Gruber, D. Bundschuh, W. Buck, S. Amethamey, A. Buck, R.M. Nitsch, C. Hock

Group Leader: THOMAS KESSLER

(ZNZ Associate, Neuro-Urology, Spinal Cord Injury Center & Research, UZH)

- 123 Age-related differences in somatosensory evoked potentials of the lower urinary tract:** F. Gregorini, J. Wöllner, M. Schubert, A. Curt, T.M. Kessler, U. Mehnert
- 124 Electrical evoked potentials following lower urinary tract stimulations:** F. Gregorini, J. Wöllner, M. Schubert, A. Curt, T.M. Kessler, U. Mehnert

Group Leader: IRENE KNUESEL

- 125 Regulated proteolytic processing of Reelin through interplay of tissue plasminogen activator (tPA), ADAMTS-4, ADAMTS-5, and their modulators:** D. Krstic, M. Rodriguez, I. Knuesel
- 126 Systemic immune challenges trigger and drive Alzheimer-like neuropathology in mice:** D. Krstic, A. Madhusudan, J. Doehner, P. Vogel, T. Notter, C. Imhof, A. Manalastas, M. Hilfiker, S. Pfister, C. Schwerde, C. Riether, U. Meyer and I. Knuesel
- 127 Characterization of Reelin deposits in the human postmortem brain of non-demented and AD patients:** T. Notter

Group Leader: UWE KONIETZKO

- 128 Nuclear Signaling of APP family members:** M. T. Gersbacher, Z. V. Goodger, R.M. Nitsch and U. Konietzko
- 129 Regulation of neuronal function by the interplay of Notch and APP nuclear signaling:** S. Grinschgl, A. Trutzel, C. Tackenberg, R.M. Nitsch and U. Konietzko
- 130 APP intracellular domain-mediated nuclear signaling is regulated by acetylation of Fe65:** F. Riese, N. Russi, R.M. Nitsch, C. Hock, U. Konietzko

- 131 Deficits in synaptic signaling and expression of plasticity-related genes in ArcAbeta mice:** A. Trutzel, R. M. Nitsch and U. Konietzko

Group Leader: DIETRICH LEHMANN

- 132 Increased frontal theta during depression compared to mania – an intra-individual source localization study:** P.-L. Faber, A. Painold, P. Milz, H.-P. Kapfhammer, D. Lehmann

Group Leader: ROGER M. NITSCH

- 133 Characterization of hippocampal SOD1 pathology and its association with cognitive deficits in an animal model of amyotrophic lateral sclerosis (ALS):** F. Wirth, A. Simon, J. McAfoose, C. Spaeni, D. Preisig, R. Derungs, L. Kulic, R.M. Nitsch, T. Welt

Group Leader: LAWRENCE RAJENDRAN

- 134 Cellular signaling machinery underlying Alzheimer's disease:** J. Bali, B. Siegenthaler, C. Tackenberg, V. Surendranath, G. Thakur, J. Ries, M. Simons, S. Zurbruggen and L. Rajendran
- 135 Cellular mechanisms underlying the release of α -synuclein:** G. Thakur, L. Rajendran

Group Leader: GHAZALEH TABATABAI

- 136 Thymosin β 4 in malignant gliomas:** H.-G. Wirsching, K. Frei, G. Reifenberger, M. Weller, G. Tabatabai

Group Leader: SUSANNE WEGENER

(NCCR Neuro, Neurology Clinic, University Hospital Zurich)

- 137 Mechanisms of neuroprotection by preconditioning in the brain:** J. Artmann, A. Luft, M. Weller, S. Wegener

- 138 Late post-ischemic hyperfusion and vasoreactivity following transient experimental ischemia:** S. Wegener, J. Artmann, A. Luft, R.B. Buxton, M. Weller, E.C. Wong

Group Leader: MICHAEL WELLER

- 139 *In vitro* and *in vivo* characterization of mouse glioma cancer cells:** M. Ahmad, M. Weller, K. Frei
- 140 The integrin inhibitor cilengitide interferes with TGF- β signaling in malignant glioma cells:** M. Silginer, P. Roth, S. Goodman, H. Moch, G. Tabatabai, I. Tritschler and M. Weller
- 141 HLA-E contributes to an immune-inhibitory phenotype of glioblastoma stem-like cells:** F. Wolpert, P. Roth, Katrin Lamszus, G. Tabatabai, M. Weller and G. Eisele

Group Leader: KATHRIN ZAUGG

(ZNZ Associate, Dept. of Radiation Oncology, University Hospital Zurich)

- 142 CPT1C depletion protects from tumor growth in a mouse tumor model:**
N. Sanchez-Macedo, J. Feng, N. Chang, E. Lucchinetti, U.M. Lütolf, K. Zaugg

COMPUTATION AND MODELING

Group Leader: RODNEY DOUGLAS

- 143 A spiking neural network implementation of Bayesian learning and decision making:** K. Völk, M. Pfeiffer, R. Douglas

Group Leader: GIACOMO INDIVERI

- 144 Neuromorphic spike-based phonetic classification:** M. Abdollahi, S.-C. Liu, G. Indiveri

- 145 Modelling and analysis of Winner-Take-All networks on aVLSI spiking neurons:** H. You, L. Müller, S. Sheik, D. Muir, G. Indiveri

Group Leader: KEVAN MARTIN

- 146 Dopamine in monkey prefrontal cortex: a combined experimental and simulation:** I.A. Spühler, A. Hauri, K.A. C. Martin

BIOMEDICAL TECHNOLOGY AND IMAGING

Group Leader: SIMON AMETAMEY

- 147 Development of novel cannabinoid type 2 receptor tracers for PET imaging:** R. Slavik, D. Bieri, K. Drandarov, A. Müller, S. Krämer, R. Schibli, S.M. Ametamey, L. Mu

Group Leader: FRITJOF HELMCHEN

- 148 Simultaneous BOLD fMRI and fiber-optic calcium recording in rat neocortex:** K. Schulz, E. Sydekum, R. Krüppel, C.J. Engelbrecht, F. Schlegel, A. Schröter, M. Rudin and F. Helmchen

Group Leader: JAN KLOHS

- 149 Near-infrared fluorescence imaging for non-invasive assessment of neutrophil activity in a mouse model of stroke:** M. Vaas, M. Rudin, J. Klohs

Group Leader: JANOS VÖRÖS

- 150 Coupling force-controlled nanopipettes with micro-electro arrays: A new approach for studying neuronal network response to single cell chemical stimulation:** J.F. Saenz, H. Dermutz, T. Zambelli, J. Vörös

ZNZ and NCCR GROUP LEADERS and ASSOCIATES

(in alphabetic order and with poster numbers)

Poster Abstract number(s)

Achermann P., Institute of Pharmacology and Toxicology, UZH	78-80
Aguzzi A., Institute of Neuropathology, University Hospital Zurich	115,116
Ametamey S., Animal Imaging Center, University Hospital Zurich	147
Bassetti C. (ZNZ Associate), Dept. of Neurology, University of Bern	81
Becher B., Department of Neuroimmunology, UZH	42-44
Benke D., Institute of Pharmacology and Toxicology, UZH	15,16
Böker H. (ZNZ Associate), Psychiatric University Hospital Zurich	102
Brandeis D., Department of Child and Adolescent Psychiatry, UZH	103-106
Brown S., Institute of Pharmacology and Toxicology, UZH	22
Courtine G., Experimental Neurorehabilitation Lab, UZH	62,117
Crestani F., Institute of Pharmacology and Toxicology, UZH	84
Curt A., Swiss Paraplegic Center, Balgrist University Hospital ZH	49,50,118
Dietz V., Swiss Paraplegic Center, Balgrist University Hospital ZH	63,64
Ditzen B., Institute of Psychology, UZH	85
Douglas R., Institute of Neuroinformatics, UZH/ETHZ	1,143
Eng K., Institute of Neuroinformatics, UZH/ETHZ	65,86
Fritschy J.-M., Institute of Pharmacology and Toxicology, UZH	2,17
Fry S. (ZNZ Associate), formerly Institute of Neuroinformatics, UZH / ETHZ	66
Gassert R., Institute of Robotics and Intelligent Systems, ETHZ	67,68,107
Gerber U., Brain Research Institute, UZH	18
Ghosh A., Institute of Neuroinformatics, UZH/ETHZ	51
Glockshuber R., Institute of Molecular Biology and Biophysics, ETHZ	119,120
Grünblatt E., Dept. of Child and Adolescent Psychiatry, UZH	23-25,121
Helmchen F., Brain Research Institute, UZH	52,53,148
Hock C., Division of Psychiatry Research, UZH	108,122
Huber R., University Children's Hospital Zurich	3,82,83
Indiveri G., Institute of Neuroinformatics, UZH/ETHZ	144,145
Jäncke L., Institute of Psychology, UZH	87
Jessberger S., Institute of Cell Biology, ETHZ	19,26-28
Jokeit H., Department of Neuropsychology, Swiss Epilepsy Center	109

Kampa B., Brain Research Institute, UZH	54
Kessler T. (ZNZ Associate), Spinal Cord Injury Center, UZH	123,124
Klaver P., Institute of Psychology, UZH	88,110
Klohs J., Institute for Biomedical Engineering, UZH and ETHZ	149
Knüsel I., Institute of Pharmacology and Toxicology, UZH	55,125-127
Kollias S., Institute for Neuroradiology, University Hospital Zurich	69,111
Konietzko U., Division of Psychiatry Research, UZH	128-131
Lehmann D., The Key Institute for Brain-Mind Research, PUK, UZH	132
Lipp H.-P., Institute of Anatomy, UZH	89-92
Liu S.-C., Institute of Neuroinformatics, UZH/ETHZ	56
Luft A., Department of Neurology, University Hospital Zurich	70
Mansuy I., Brain Research Institute, UZH	29,93
Martin K., Institute of Neuroinformatics, UZH/ETHZ	57,58,146
Neuhauss S., Institute of Molecular Life Sciences, UZH	59
Nitsch R., Division of Psychiatry Research, UZH	133
Ogunshola O. (ZNZ Associate), Institute of Veterinary Physiology, UZH)	30-32
Pryce Ch., Psychiatric University Hospital Zurich	94-96
Raineteau O., Brain Research Institute, UZH	4,5,20,33,34
Rajendran L., Division of Psychiatry Research, UZH	35,134,135
Riener R., Department of Mechanical and Process Engineering, ETHZ	60,71,112
Rouiller E. (NCCR Neuro), Institute of Physiology, University of Fribourg	72
Schmidlin E. (NCCR Neuro), Institute of Physiology, University of Fribourg	73
Schwab M., Brain Research Institute, UZH	6-8,36,74
Seifritz E., Psychiatric University Hospital Zurich	97
Sommer L., Institute of Anatomy, UZH	9-13
Sonderegger P., Dept. of Biochemistry, UZH	37
Spinelli S., Psychiatric University Hospital Zurich	113
Stoeckli E., Institute of Molecular Life Sciences, UZH	14
Suter T., Clinical Immunology, University Hospital Zurich	45-47
Tabatabai G., Dept. of Neurology, University Hospital Zurich	136
Thöny B., Dept. of Pediatrics, University Children's Hospital Zurich	48
Tyagarajan S (ZNZ Associate), Institute of Pharmacology & Toxicology, UZH	38
van Hedel H., Rehabilitation Center, Univ. Children's Hospital, Affoltern a. A.	75-77
von Aster M., Center for MR-Research, University Children's Hospital	98
Vörös J., Institute for Biomedical Engineering, UZH and ETHZ	150

Wegener S. (NCCR Neuro), Neurology Clinic, University Hospital Zurich	137,138
Weller M., Department of Neurology, University Hospital Zurich	139-141
Wolf M., Department of Neonatology, University Hospital Zurich	114
Wolfer D., Institute of Anatomy, UZH	99-101
Wollscheid B., Institute for Molecular Systems Biology, ETHZ	39-41
Zaugg K. (ZNZ Associate), Dept. of Radiation Oncology, Univ. Hosp. Zurich	142
Zeilhofer H.U., Institute of Pharmacology and Toxicology, UZH	21,61