PETER SCHEIFFELE

Peter Scheiffele is a Professor at the Biozentrum of the University of Basel, Switzerland. The main objective of his research is to understand how specific neuronal circuits are assembled during development of the central nervous system. His work uncovered cell biological processes that govern cell surface interactions and signal transduction in synapse assembly during development. Important contributions include the discovery that certain neuronal adhesion molecules exhibit "synaptogenic" function, that is, the ability of an isolated protein to organize a substantial degree of the synaptic structure. Further studies provided key insights into the mechanisms of alternative splicing that modify synaptic adhesion complexes in response to neuronal activity.

MARTHA CONSTANTINE-PATON

Martha Constantine-Paton, a founding member of the McGovern Institute, is a professor in the Department of Brain and Cognitive Sciences, the Department of Biology. She moved to MIT in 1999, having previously held professorships at Princeton University and later at Yale University, where she was the founding Director of the Interdepartmental Neuroscience Program. She is a member of the American Academy of Arts and Sciences, a past recipient of the Society for Neuroscience Young Investigator Award and a National Merit Award from the National Eye Institute, and more recently the Mika Saltpeter Lifetime Achievement Award from SFN. She studies mechanisms that control the development and refinement of glutamate synapses in the CNS.

CLAUDIA BAGNI

Claudia Bagni received her Ph.D. from the University of Rome Tor Vergata, and did her postdoctoral trainings at CNRS, France, Harvard University, USA and EMBL, Germany. She Full Professor and Group Leader (VIB) at the K University of Leuven (Belgium) and University of Rome Tor Vergata (Italy). From 2011-2014 she has been Director of the Neurogenetics Program at the Center for Human Genetics, K University of Leuven. Dr. Bagni is an EMBO member and recipient of several awards among them: the Queen Elisabeth Foundation Award, Baron van Gysel de Meise Price and UCB (Union Chimique Belge) Price 2014. Dr. Bagni's laboratory focuses on cellular and molecular studies of synaptic plasticity and cancer progression in the context of intellectual disabilities and autism. Her work identified molecular pathways that are impaired in Fragile-X Syndrome and other disabilities such as autism spectrum disorders and schizophrenia.

MICHAEL KREUTZ

Michael Kreutz studied psychology, philosophy and linguistics at the University of Münster, Germany and received his PhD-training in Behavioral Neurosciences at the Ruhr University in Bochum, Germany. Subsequently he joined the Department of Brain and Cognitive Sciences at MIT, USA, as a research fellow. From 1990 to 1993 he was staff scientist in the Department of Molecular Neuroendocrinology at the Max Planck Institute for Experimental Medicine in Göttingen. In 1993, he became a junior group leader at the University of Madgeburg. Since 1998 he is at the Leibniz Institute for Neurobiology in Magdeburg where is holding a position as a senior research group leader and is head of the Neuroplasticity research group.

OLIVER SCHLÜTER

Oliver Schlüter studied Biochemistry at the universities of Bayreuth and Hannover, Medicine at the universities of Hannover and Göttingen, and obtained his M.Sc. and M.D. degree in 1994 and 2000, respectively. He performed his doctoral theses at the Max-Planck-Institute for Experimental Medicine in Göttingen with Prof. Dr. Thomas Südhof on the function of synaptic proteins on synaptic vesicle exocytosis and experimental parkinsonism and received his doctoral degrees in biochemistry and medicine from the universities of Hannover and Göttingen in 2001 and 2002, respectively. From 2001-2002, he trained as a postdoctoral researcher with Dr. Christian Rosenmund and Prof. Dr. Reinhard Jahn at the Max-Planck-Institute for Biophysical Chemistry. He then moved his focus on the postsynaptic site and trained with Dr. Robert Malenka at Stanford University for a Postdoctoral period from 2002 until 2006. In 2006, he started as an independent investigator at the European-Neuroscience Institute in Göttingen with a starting grant from the German Science Foundation (Emmy-Noether) and studies the molecular mechanism of signaling specificity in synaptic plasticity.

NILS BROSE

Dr. Brose studied Biochemistry, Biology, and Physiology at the Universities of Tuebingen (Germany) and Oxford (UK). He received an MSc degree from the University of Oxford (UK), where he worked with Marianne Fillenz, and a PhD degree from the University of Munich (Germany), where he worked in the laboratory of Reinhard Jahn at the Max Planck Institute of Psychiatry. After postdoctoral training with Steve Heinemann (Salk Institute, La Jolla, CA, USA) and Tom Sudhof (UT Southwestern Medical Center, Dallas, TX, USA), Dr. Brose started his independent research program at the Max Planck Institute of Experimental Medicine (Goettingen. Germany), where he is currently the director of the Department of Molecular Neurobiology. Dr. Brose's research focuses on the molecular mechanisms of synaptogenesis and synapse function, and on the role of these processes in neuropsychiatric disorders.

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MISTI Niedersächsisches Ministerium für Wissenschaft und Kultur

ENI-MIT SYMPOSIUM

Göttingen, Germany | June 13 & 14, 2015

THE PICOWER INSTITUTE FOR LEARNING AND MEMORY

Synaptic basis of neuron network dysfunction in brain disorders

SETH GRANT

Seth Grant graduated from Sydney University with a Bachelor of Science (Medicine) in Physiology, Bachelor of Medicine and Bachelor of Surgery. From 1985-1989 he was a Postdoctoral Fellow at Cold Spring Harbor Laboratory with Douglas Hanahan studying transgenic mouse models of cancer. From 1989-94 he studied mouse genetic models of learning and memory with Eric Kandel at Columbia University (Nobel Laureate 2000). He established his laboratory at the Centre for Genome Research at Edinburgh University in 1994 and in 2000 was appointed Professor of Molecular Neuroscience. In 2003 he was appointed Principal Investigator at the Wellcome Trust Sanger Institute in Cambridge and remained there until 2011, when he returned to Edinburgh University. In 2011 Seth returned to the University of Edinburgh to join the School of Clinical Sciences, Centre for Clinical Brain Sciences (CCBS), where he holds the Professorial chair of Molecular Neuroscience. He has held additional appointments including the John Cade Visiting Professor at Melbourne University, Honorary Professorship at Cambridge University and elected Fellow of the Royal Society of Edinburgh and Fellow of the Academy of Medical Sciences. The main goal of the Grant laboratory is to understand molecular components in synapses – the junction between nerve cells. He first used mouse genetic engineering to discover genes involved with learning and proteomic approaches to study the molecular machinery in synapses. These have led to the discovery that over 130 brain diseases involve postsynaptic proteins, including common disorders such as schizophrenia, intellectual disability and autism arise in postsynaptic proteins. These findings and approaches have underpinned the new field called 'synaptopathy' – the pathology of the synapse.

TOBIAS BÖCKERS

Tobias Maria Boeckers obtained his M.D. and doctoral degrees from the Medical School, University of Muenster in 1991. From 1992-2002, Dr. Boeckers trained as a postdoctoral fellow with Dr. Spiess at the MPI for Experimental Medicine, Göttingen and Dr. Hildebrand at the Institute of Anatomy, University Münster. Dr. Boeckers has held the position of C4 Professor and Head of the Institute of Anatomy und Cell-Biology since 2003, and the Dean of Studies and board member of the medical faculty since 2010, at Ulm University. Dr. Boeckers is the President of the Anatomische Gesellschaft in 2012. Dr. Boeckers is interested in the postsynaptic organization of the chemical synapses, and the mechanisms underlying functional and structural plasticity.

ELLY NEDIVI

Elly Nedivi received her Ph.D. in Neuroscience from Stanford University Medical School and completed her postdoctoral training at The Weizmann Institute in Israel. After two years as a Visiting Scientist at Cold Spring Harbor Laboratory in NY, she joined the faculty of the Department of Brain and Cognitive Sciences at MIT in 1999. She is currently Professor of Neuroscience, with joint appointments in the Departments of Brain and Cognitive Sciences, and Biology, and is a member of the Picower Institute for Learning and Memory. Dr. Nedivi's lab studies the cellular mechanisms that underlie plasticity of the developing and adult brain. She is a recipient of the Ellison Medical Foundation New Scholar Award, National Science Foundation Powre Award, Alfred P. Sloan Fellowship, Middleton Career Development Professorship, Dean's Education and Student Advising Award, AFAR Julie Martin Mid-Career Award in Aging Research, and recently an NIH BRAIN Award.

THOMAS SÜDHOF

Thomas Christian Südhof was born in Göttingen in 1955, and obtained his M.D. and doctoral degrees from the University of Göttingen in 1982. He performed his doctoral thesis work at the Max-Planck-Institut für biophysikalische Chemie in Göttingen with Prof. Victor P. Whittaker on the biophysical structrue of secretory granules, and his internship in the University of Göttingen Hospital from 1981 to 1982. From 1983-1986, Südhof trained as a postdoctoral fellow with Drs. Mike Brown and Joe Goldstein at UT Southwestern in Dallas, TX, and elucidated the structure, expression and cholesterol-dependent regulation of the LDL receptor gene. Subsequently, Südhof served on the faculty of UT Southwestern in Dallas until 2008, where Südhof among others served as the founding chair of the Department of Neuroscience. Südhof moved to Stanford University in 2008, and holds the position of Avram Goldstein Professor in the School of Medicine. In addition, Südhof has been an Investigator of the Howard Hughes Medical Institute since 1986. Südhof is a member of the National Academy of Sciences, the Institute of Medicine, and the American Academy of Arts and Sciences. Südhof is the recipient of several awards, including the Alden Spencer Award (1993), the National Academy of Sciences Award in Molecular Biology (1997), the Bristol-Myers Award in Neuroscience (2004), the Passano Award (2008), the Kavli Award in Neuroscience (2010), the Lasker-deBakey Medical Basic Research Award (2013), and the Nobel Prize in Physiology or Medicine (2013). Südhof's research interests focus on the molecular mechanisms underlying synapse formation and function, in particular on how synapses transmit signals from one neuron to the next, and how they become abnormal during disorders such as autism and schizophrenia.

WEIFENG XU

Weifeng Xu majored in Biophysics and Physiology in the College of Life Sciences at Peking University for her undergraduate education. Weifeng Xu did her Ph.D study with Dr. Diane Lipscombe in the Neuroscience Graduate Program at Brown University, and her postdoctoral training with Dr. Robert Malenka at Stanford University School of Medicine. In 2009, Dr. Xu started her independent research program at the Picower Institute for Learning and Memory at Massachusetts Institute of Technology, where she is currently an assistant professor of Neuroscience. Dr. Xu's research focuses on the molecular mechanisms of synaptic function and plasticity and the dysfunction in these processes involved in neurodevelopmental and neuropsychiatric disorders.

PROGRAM AGENDA *June 13th & 14th 2015*

JUNE 13TH

13:30 - 13:45 p.m.	**Opening Remarks**
13:45 - 14:30 p.m.	**Weifeng Xu** – *Massachusetts Institute of Technology, USA* Dynamic regulation of synaptic plasticity via Neurogranin
14:30 - 15:15 p.m.	**Tobias Böckers** – *University of Ulm, Germany* The role of Shanks in autism spectrum disorders (ASDs)
15:15 - 16:00 p.m.	**Elly Nedivi** – *Massachusetts Institute of Technology, USA* Structural dynamics of inhibitory circuits
16:00 - 16:30 p.m.	**Coffee Break**
16:30 - 18:00 p.m.	**Thomas Südhof** – *Stanford University, USA* Neurexins, neuroligins, and company – towards a molecular logic of neural circuits
18:00 - 19:30 p.m.	Poster/Workshop
19:30 -	**Dinner**

JUNE 14TH

9:00 - 9:45 a.m.	**Seth Grant** – *University of Edinburgh, UK* A new brain-wide approach to synaptic diversity and disease
9:45 - 10:30 a.m.	**Peter Scheiffele** – *University of Basel, Switzerland* Alternative splicing programs for synaptic specificity
10:30 - 10:45 a.m.	Coffee Break
10:45 - 11:30 a.m.	**Martha Constantine-Paton** – *Massachusetts Institute of Technology, USA* Myosin Va and LTD in Cortex and Hippocampus
11:30 - 11:55 a.m.	Selected Speaker 1
11:55 - 12:40 a.m.	**Claudia Bagni** – *KU Leuven, Belgium* Brain wiring and synaptic plasticity in mouse models for ASD
12:40 - 14:00 p.m.	**Lunch**
14:00 - 15:00 p.m.	Poster/Workshop
15:00 - 15:45 p.m.	**Michael Kreutz** – *Leibniz Institute for Neurobiology, Germany* The Ca^{2+}-sensor Caldendrin orchestrates the postsynaptic scaffold
15:45 - 16:10 p.m.	Selected Speaker 2
16:10 - 16:55 p.m.	**Oliver Schlüter** – *European Neuroscience Institute Gottingen, Germany* To be or not to be: The fine-tuning of silent synapse maturation during developmental plasticity
16:55 - 17:10 p.m.	**Coffee Break**
17:10 - 17:35 p.m.	Selected Speaker 3
17:35 - 18:20 p.m.	**Nils Brose** – *Max-Plank-Institute for Experimental Medicine, Germany* Neuroligins at inhibitory synapses - from synaptogenesis to autism spectrum disorders
18:20 - 18:30 p.m.	Concluding Remarks