

HINTERGRUNDMATERIAL

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NOBELPREISTRÄGER EDVARD MOSER VERLÄNGERT SEIN ENGAGEMENT IN BERLIN

Anlagen:

- Bildmaterial
- Kurz-Lebenslauf von Professor Dr. Edvard I. Moser
(Technisch-Naturwissenschaftliche Universität Norwegens)
Einstein BIH Visiting Fellow, gefördert von der Stiftung Charité
- Kurz-Lebenslauf von Professor Dr. Dietmar Schmitz
(Charité – Universitätsmedizin Berlin / Exzellenzcluster „NeuroCure“)
Gastgeber von Einstein BIH Visiting Fellow Edvard Moser



Professor Dr. **Edvard I. Moser**, Einstein BIH Visiting Fellow, gefördert von der Stiftung Charité
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Professor Dr. **Dietmar Schmitz**, Gastgeber von Einstein BIH Visiting Fellow Edvard Moser
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Professor Dr. Edvard I. Moser
Technisch-Naturwissenschaftliche Universität Norwegens
Einstein BIH Visiting Fellow, gefördert von der Stiftung Charité

Wissenschaftlicher Werdegang

seit 2007	Director of Kavli Institute for Systems Neuroscience, Norwegian University of Science and Technology (NTNU), Trondheim, Norway
seit 2013	Co-Director of Centre for Neural Computation, Norwegian University of Science and Technology (NTNU), Trondheim, Norway
seit 1998	Professor of Neuroscience, Norwegian University of Science and Technology (NTNU), Trondheim, Norway
2003 – 2012	Director of Centre for Biology of Memory, Norwegian University of Science and Technology (NTNU)
1996 – 1998	Associate Professor of Biological Psychology, Norwegian University of Science and Technology (NTNU)
1994 – 1996	Postdoc, University of Edinburgh and University College London
1991 – 1995	PhD student, University of Oslo

Akademische Ausbildung

1990	Neurobiology, University of Oslo
1985 – 1990	Psychology, University of Oslo
1984 – 1985	Mathematics, statistics, University of Oslo

Aktuelle Forschung

Neural network computations in the cortex, with particular emphasis on dynamic representation of space and memory in the hippocampal-entorhinal system. I have studied how spatial location and spatial memory are computed in the brain. My most noteworthy contribution is probably the discovery of grid cells in the entorhinal cortex, which points to the entorhinal cortex as a hub for the brain network that makes us find our way. Together with many colleagues, and in particular May-Britt Moser, I have shown how a variety of functional cell types in the entorhinal microcircuit contribute to representation of self-location, what mechanisms underlie the computation of space, how the outputs of the circuit are used by memory networks in the hippocampus, and how episodic memories are separated from each other in the early stages of the hippocampal memory storage. The discovery of grid cells and their control of population dynamics in the hippocampus have led to a revision of established views of how the brain calculates self-position and spatial mapping and is becoming one of the first non-sensory cognitive functions to be characterized at a mechanistic level in neuronal networks. Grid cells have attracted wide attention because the crystal-like structure underlying their firing fields does not arise out of sensory inputs but instead is created entirely within the brain itself. With the discovery of place cells and grid cells, as well as other co-localized spatial cell types, it has become possible to study neural computation at the high end of the cortical hierarchy, quite independently of sensory inputs and motor outputs. The presence of an experimentally controllable firing correlate, combined with the access to activity patterns of multiple discrete cell types, provides researchers with a model system to determine not only how specific activity patterns are generated but also how activity gets transformed from one cell type to another.

Professor Dr. Dietmar Schmitz
Charité – Universitätsmedizin Berlin / Exzellenzcluster „NeuroCure“
Gastgeber von Einstein BIH Visiting Fellow Edvard Moser

Wissenschaftlicher Werdegang

seit 2016	Spokesperson, Einstein Center for Neurosciences (ECN) Berlin
seit 2015	Spokesperson, NeuroCure – Cluster of Excellence, Berlin
seit 2011	Spokesperson, German Center for Neurodegenerative Diseases (DZNE), Berlin
seit 2005	Director, Neuroscience Research Center (NWFZ), Charité, Berlin
seit 2005	Full Professor (W3), Cellular and Molecular Neurosciences, Charité, Berlin
2005 – 2014	Spokesperson, Research Training Groups (GRK) 1123, German Research Foundation (DFG)
2011 – 2012	Coordinator, NeuroCure – Cluster of Excellence grant application, phase II
2006 – 2007	Coordinator, NeuroCure – Cluster of Excellence grant application, phase I
2002 – 2005	Assistant Professor, Department of Neurophysiology, Universität zu Köln and Charité, Berlin
1999 – 2002	Postdoctoral fellow, University of California, San Francisco, USA
1997 – 1999	Postdoctoral fellow, Department of Neurophysiology, Charité, Berlin

Akademische Ausbildung

1992 – 1997	PhD thesis, Department of Neurophysiology, Universität zu Köln and Charité, Berlin
1994 – 1997	Studies in Medicine, Charité, Berlin
1990 – 1994	Studies in Medicine, Universität zu Köln

Aktuelle Forschung

Our group is active in the field of cellular and molecular neurobiology with the following major areas:

- Cellular and molecular mechanisms of synaptic plasticity
- Modulation and development of synaptic transmission, plasticity, and neuronal networks
- Homeostatic plasticity, hyperexcitability, and epilepsy
- “Synaptopathy” in neurological-psychiatric disorders such as epilepsy, Alzheimer’s disease, mental retardation, and autism
- Functional genomics