

Dietmar Schmitz

Personal Details

Date of birth	4 th of November 1968
Place of birth	LenneStadt, Germany
Nationality	German
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Title / Position	Professor (W3), Principal Investigator

Education

1990-1994	Studies in medicine at the medical school in Cologne
1994-1997	Studies in medicine at the medical school in Berlin (Charité)

Professional

1992-1997	Ph.D. thesis, Department of Neurophysiology at the Charité, Humboldt-University, Berlin
1997-1999	Postdoctoral fellow at the Department of Neurophysiology at the Charité, Humboldt-University, Berlin
1999-2001	Emmy-Noether-Scholarship I from the DFG -Postdoctoral fellow at University of California, San Francisco
2002-2005	Emmy-Noether-Scholarship II from the DFG
2002-2005	Assistant Professor at the Charité, Humboldt-University Berlin
2005-	Professor of Neurosciences at the Charité-Universitätmedizin Berlin

Research Fields

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

- Cellular and molecular mechanisms of synaptic plasticity in the hippocampus and the entorhinal cortex
- Mechanisms and function of short-term plasticity at the hippocampal mossy fiber synapse
- Neuromodulation and development of synaptic transmission, plasticity and neuronal networks
- Function and plasticity of neuronal networks

Interdisciplinary Approach

Our group works in the field of learning and memory on the cellular and molecular level. This research has, of course, implications for the study of human behavior and thus links easily to the humanities.

Experiences in Doctoral Education (incl. MSc)

- Title of the program(s): Medical Neurosciences
- Focus, research profile of the program(s): translational neurosciences
- Website(s): <http://www.charite.de/medneuro/index.php>

Collaborative Projects

Funding organization:	DFG (SFB 665)
Speaker:	Prof. Nitsch
Project title (long):	Interference with the functional development at the hippocampal mossy fiber synapse by febrile seizures.
Speaker university:	Charité
Project period:	2005-2009

- Website: <http://www.sfb665.charite.de/>
- Funding organization: DFG (SFB 618)
 Speaker: Prof. Hammerstein
 Project title (long): Kurzzeitdynamik der Moosfaser-Synapse und Phasenpräzession im Hippocampus.
 Speaker university: Humboldt-University
 Project period: 2005-2009
 Website: http://www.biologie.hu-berlin.de/forschung/SFB_618/
- Funding organization: BMBF
 Speaker: Prof. Herz
 Project title (long): Short-term and long-term synaptic plasticity.
 Speaker university: Humboldt-University
 Project period: 2005-2009
 Website: <http://www.bccn-berlin.de/>
- Funding organization: DFG (GRK 1123)
 Speaker: Prof. Kuhl
 Project title (long): Short-term and long-term synaptic plasticity.
 Speaker university: Free University
 Project period: 2005-2009
 Website: <http://www.charite.de/ch/physio/neuro/GRK1123/>

Selected Publications

- Nicoll RA & Schmitz (2005) Synaptic plasticity at hippocampal mossy fiber synapses. *Nature Rev Neurosci.* 2005 Nov;6(11):863-76.
- Breustedt J, Vogt KE, Miller RJ, Schmitz D (2003) α_{1E} -containing Ca^{2+} -channels are involved in synaptic plasticity. *P Nat Acad Sci USA* 100(21): 12450-12455
- Schmitz D, Mellor J, Nicoll RA (2003) Presynaptic kainate receptors impart an associative property to hippocampal mossy fiber long-term potentiation. *Nat Neurosci* 6: 1058-1066
- Mellor J, Nicoll RA, Schmitz D (2002) Presynaptic I_h channels mediate hippocampal mossy fiber long term potentiation. *Science* 295: 143-7
- Schmitz D, Schuchmann S, Fisahn A, Draguhn A, Buhl EH, Petrasch-Parwez R, Dermietzel R, Heinemann U, Traub RD (2002) Axo-axonal coupling: a novel mechanism for ultrafast neuronal communication. *Neuron* 31: 831-840
- Schmitz D, Mellor J, Nicoll RA (2001) Presynaptic kainate receptor mediation of frequency facilitation at hippocampal mossy fiber synapses. *Science* 291: 1972-1976 [10.1126/science1057105 (Science Express)]
- Schmitz D, Frerking M, Nicoll RA (2000) Synaptic activation of presynaptic kainate receptors on hippocampal mossy fiber synapses. *Neuron* 27: 327-338
- Draguhn A, Traub RD, Schmitz D, Jefferys JGR (1998) Electrical coupling underlies high-frequency oscillations in the hippocampus in vitro. *Nature* 394: 189-192

List of Supervised Dissertations (since 2001)

- * Nikolaus Maier, Electrophysiological analysis of sharp wave-ripple complexes in mouse hippocampus in vitro, 2006, Summa cum Laude (supervisor: Prof. A. Draguhn; co-supervisor: Prof. D. Schmitz)

Ongoing

- * Anja Gundlfinger, Transmission at the Hippocampal Mossy Fiber Synapse: Modulation, Dynamics and Plasticity. (Supervisor: Prof. D. Schmitz; co-supervisor: Prof. A. Herz)
- Benjamin Rost, Mechanisms of GABAB-receptor mediated modulation in the hippocampus. (Supervisor: Prof. D. Schmitz; co-supervisor: N.N.)
- * asterisks indicate Mind&Brain related topics