

## Friedrich Johenning

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### Curriculum vitae

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|-------------------|---|
| 12/2011 - present | Lecturer in Anatomy and Neurobiology, Senior Research Associate at the Neuroscience Research Center at the Charité (tenured).   |
| 03/2006 - 11/2011 | Postdoctoral training in the laboratory of Prof. Dietmar Schmitz at the Charité, Berlin.  |
| 12/2011           | Postdoctoral thesis (Habilitation) on "Optische Methoden zur funktionell-anatomischen Charakterisierung synaptischer Verschaltungen".   |
| 01/2004 - 02/2006 | AiP (Arzt im Praktikum) and postdoctoral training in the laboratory of Prof. Arthur Konnerth in Munich under direct supervision of Prof. Knut Holthoff.   |
| 04/2004           | Doctoral thesis on „Distinct intracellular Ca <sup>2+</sup> transients in neurites and somata of NGF differentiated PC12 cells“ accepted with summa cum laude at the University of Hamburg, joint supervision by Prof. Barbara Ehrlich, Yale and Prof. Udo Schumacher, Hamburg. |
| 08/2000 - 08/2001 | Research in the laboratory of Prof. Barbara Ehrlich at the Yale University School of Medicine and at the MBL in Woods Hole for German MD thesis (Dr. med.).   |
| 09/1999 - 08/2000 | One year scholarship of the German Academic Exchange Service(DAAD) for clinical education at St. George`s Hospital Medical School in London.  |
| 10/1996 - 11/2003 | Medical Studies at the University of Hamburg, Graduation score 1.3; score for preclinical exam (Physikum) in 1998 1.0   |
| 10/1995 - 09/1996 | Care and education of disabled and special needs Children at the Erich-Kästner school for the physically and mentally disabled (Zivildienst).   |
| 06/1995           | Graduation from the "Gymnasium Johanneum" in Wadersloh, Westfalia.  |

### Research fields

How does calcium signaling transduce electrical neuronal activity in the millisecond range into long-lasting structural and functional changes affecting plasticity and development of synapses and neuronal circuits?

- Methods I use: Calcium imaging (confocal and 2P), 1P and 2P glutamate uncaging, static and dynamic morphometry of dendrites and spines, circuit mapping, patch clamp electrophysiology, acute brain slices.
- Brain Regions I am interested in: Olfactory (piriform) Cortex and Hippocampal formation.
- Disease models I am interested in: Fragile X Syndrome, GLUK2 KO Model of mental retardation.

### Activities in the scientific community, honors, awards, grants, academic placements

DFG Einzelantrag JO 1079/1-1 "Plasticity and function of backpropagating Action Potential mediated calcium signals in dendritic spines".

Berlin Institute of Health (BIH) PhD grant "Modulation of neonatal olfactory cortex spontaneous synchronized activity in the GLUK2 KO model of mental retardation" (main applicant, co-applicant: Prof. James Poulet).

SFB 665 Research Grant "Ca<sup>2+</sup> signals underlying circuit development in the olfactory cortex of Fmr1<sup>-/-</sup> mice".

Primo loco position W3 professorship for Neuroanatomy at the Otto von Guericke Universität Magdeburg.

Secundo loco position W3 professorship for Neuroanatomy at the Ruhr Universität Bochum.

Reviewer for the Journal of Neuroscience, the Journal of Physiology (London) and Cerebral Cortex  
Reviewer for the French National Research Agency (ANR)

Member of the admission Committee of the German National Merit Scholarship foundation  
(Studienstiftung des deutschen Volkes).

Admission to the German National Merit Scholarship Foundation (Studienstiftung des deutschen  
Volkes) in 1999.

## Publications

1	<b>Johenning, F.W.<sup>§</sup></b> , Theis, A. <sup>§</sup> , Pannasch, U., Rückl, M., Rüdiger, S., Schmitz, D. <i>Ryanodine Receptor Activation induces Long-Term Plasticity of Spine Calcium Dynamics.</i> <b>PLOS Biology</b> , June 22, 2015
2	Kintscher, M., Wozny, C., <b>Johenning, F.W.</b> , Schmitz, D., and Breustedt, J. <i>Role of RIM1alpha in short- and long-term synaptic plasticity at cerebellar parallel fibers.</i> <b>Nature Communications</b> 4:2392, 2013
3	Salmen, B., Beed, P., Ozdogan, T., Maier, N., <b>Johenning, F.W.</b> , Winterer, J., Breustedt, J., and Schmitz, D. <i>GluK1 inhibits calcium dependent and independent transmitter release at associational/commissural synapses in area CA3 of the hippocampus.</i> <b>Hippocampus</b> . 22(1), 57-68, 2012
4	Wiegand, H.F., Beed, P., Bendels, M.H.K., Leibold, C., Schmitz, D.*, and <b>Johenning, F.W.*</b> <i>Complementary sensory and associative microcircuitry in primary olfactory cortex.</i> <b>Journal of Neuroscience</b> . 31 (34), 12149–12158, 2011
5	Beed, P., Bendels, M.H.K., Wiegand, H.F., Leibold, C., <b>Johenning, F.W.*</b> , and Schmitz, D.* <i>Analysis of excitatory microcircuitry in the medial entorhinal cortex reveals cell-type-specific differences.</i> <b>Neuron</b> . 68 (6), 1059–1066, 2010
6	Bendels, M.H.K., Beed, P., Schmitz, D., <b>Johenning, F.W.</b> , and Leibold, C. <i>Detection of input sites in scanning photostimulation data based on spatial correlations.</i> <b>Journal of Neuroscience Methods</b> . 192 (2), 286–295, 2010
7	<b>Johenning, F.W.</b> , Beed, P., Trimbuch, T., Bendels, M.H.K., Winterer, J., and Schmitz, D. <i>Dendritic compartment and neuronal output mode determine pathway-specific long-term potentiation in the piriform cortex.</i> <b>Journal of Neuroscience</b> . 29 (43), 13649-13661, 2009
8	Maier, N., Morris, G., <b>Johenning, F.W.</b> , and Schmitz, D. <i>An approach for reliably investigating hippocampal sharp wave-ripples in vitro.</i> <b>PLoS One</b> . 4 (9), e6925, 2009
9	Bendels, M.H., Beed, P., Leibold, C., Schmitz, D.*, and <b>Johenning, F.W.*</b> <i>A novel control software that improves the experimental workflow of scanning photostimulation experiments.</i> <b>Journal of Neuroscience Methods</b> . 175(1), 44-57, 2008
10	Gundfinger, A., Bischofberger, J., <b>Johenning, F.W.</b> , Torvinen, M., Schmitz, D., and Breustedt J. <i>Adenosine modulates transmission at the hippocampal mossy fibre synapse via direct inhibition of presynaptic calcium channels.</i> <b>Journal of Physiology</b> . 582(Pt 1), 263-77, 2007

11	<b>Johenning, F.W.</b> , and Holthoff, K. <i>Nuclear calcium signals during L-LTP induction do not predict the degree of synaptic potentiation.</i> <b>Cell Calcium.</b> 41(3), 271-283, 2007
12	<b>Johenning, F.W.</b> , Wenk, M.R., Uhlen, P., DeGray, B., Lee, E., De Camilli, P., and Ehrlich, B.E. <i>InsP 3-mediated intracellular calcium signaling is altered by expression of synaptotagmin-1.</i> <b>Biochemical Journal.</b> 382(Pt 2), 687-694, 2004
13	<b>Johenning, F.W.</b> , Zochowski, M.R., Conway, S., Holmes, A. P., Koulen, P., and Ehrlich, B.E. <i>Distinct intracellular calcium transients in neurites and somata integrate neuronal signals.</i> <b>Journal of Neuroscience.</b> 22(13), 5344-5353, 2002
14	Johenning, F.W., and Ehrlich, B.E. <i>Signaling Microdomains: InsP3 receptor localization takes on new meaning.</i> <b>Neuron.</b> 34 (2), 173-175, 2002 (Preview)
15	Koulen, P., Janowitz, T., <b>Johenning, F.W.</b> , and Ehrlich, B.E. <i>Characterization of the calcium-release channel/Ryanodine receptor from Zebrafish skeletal muscle.</i> <b>Journal of Membrane Biology.</b> 183(3), 155-63, 2001

\*equally contributing senior and corresponding author § equally contributing first author