

# Curriculum vitae

## Nimmerjahn, Axel

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Birth place: Kulmbach, Germany  
Nationality: German

## Education

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2002-2005 University of Heidelberg, Heidelberg, Germany  
*Ph.D., Physics*  
1998-2002 University of Heidelberg, Heidelberg, Germany  
*Diploma, Physics*  
1996-1998 University of Bayreuth, Bayreuth, Germany  
*Intermediate diploma, Physics*

## Research and professional experience

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2005-*present* Stanford University, Stanford, USA  
*Postdoctoral fellow* (advisors: Mark J. Schnitzer & Ben A. Barres)  
**Functional neuron-glia interactions in health and disease**  
2005 Max-Planck-Institute for Medical Research, Heidelberg, Germany  
*Postdoctoral fellow* (advisors: Bert Sakmann & Fritjof Helmchen)  
**In vivo two-photon imaging of neocortical neuron-glia interactions**  
2002-2005 Max-Planck-Institute for Medical Research, Heidelberg, Germany  
*Ph.D. student* (supervisors: Bert Sakmann & Fritjof Helmchen)  
**Development of novel fluorescence labeling techniques for in vivo two-photon  
fluorescence imaging of brain cell populations; advancement of miniaturized  
two-photon microscopes**  
2000-2001 Max-Planck-Institute for Medical Research, Heidelberg, Germany  
*Diploma student* (supervisors: Bert Sakmann & Fritjof Helmchen)  
**Advancement of miniaturized two-photon microscopes**  
1998 Siemens AG, Munich, Germany  
*Working student* (supervisor: Wolfgang Krühler)  
**Solar cell development**

## Fellowships

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2006-*present* Long-term fellowship of the International Human Frontier Science Program  
Organization  
2006 Feodor Lynen research fellowship, Alexander von Humboldt Foundation  
2002-2005 Ph.D. scholarship, Boehringer Ingelheim Fonds

## Awards & honors

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2006	Otto-Hahn-Medal, Max Planck Society
2006	Du Bois-Reymond Award, German Physiologic Society
2002	Outstanding physics diploma with honors

## Teaching

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2002-2003	University of Heidelberg, Heidelberg, Germany <i>Graduate teaching assistant, Physics</i>
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## Further training

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1995-1996	Military Service, German Federal Armed Forces, Germany
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## Publications

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### Theses

1. [Nimmerjahn, A.](#) (2005) Advances in two-photon fluorescence microscopy for high-resolution anatomical and functional imaging of cell populations in the intact brain. *Ph.D. thesis*, University of Heidelberg, Germany.
2. [Nimmerjahn, A.](#) (2001) Design and optimisation of a fiber optics setup for efficient two-photon fluorescence excitation after the fiber. *Diploma thesis*, University of Heidelberg, Germany.

### Peer-reviewed publications

1. Sullivan, M.R., [Nimmerjahn, A.](#), Sarkisov, D.V., Helmchen, F., Wang, S.S.-H. (2005) In vivo calcium imaging of circuit activity in cerebellar cortex. *J. Neurophysiol.* **94** (2): 1636-1644.
2. [Nimmerjahn, A.](#), Kirchhoff, F., Helmchen, F. (2005) Resting microglial cells are highly dynamic surveillants of brain parenchyma in vivo. *Science* **308** (5726): 1314-1318.
3. Dittgen, T., [Nimmerjahn, A.](#), Komai, S., Licznarski, P., Waters, J., Margrie, T.W., Helmchen, F., Denk, W., Brecht, M. and Osten, P. (2004) Lentivirus-based genetic manipulations of cortical neurons and their optical and electrophysiological monitoring in vivo. *Proc. Natl. Acad. Sci. USA* **101** (52): 18206-18211.
4. Goebel, W., Kerr, J.N.D., [Nimmerjahn, A.](#), and Helmchen, F. (2004) A miniaturized two-photon microscope using a flexible coherent fiber bundle and a gradient-index lens objective. *Optics Letters* **29** (21): 2521-2523.
5. [Nimmerjahn, A.](#), Kirchhoff, F., Kerr, J.N.D., Helmchen, F. (2004) Sulforhodamine 101 as a specific marker of astroglia in the neocortex in vivo. *Nature Methods* **1** (1): 31-37.
6. Goebel, W., [Nimmerjahn, A.](#), and Helmchen, F. (2004) Distortion-free delivery of nanjoule femtosecond pulses from a Ti:sapphire laser through a hollow core photonic crystal fiber. *Optics Letters* **29** (11): 1285-1287.
7. Kim, J., Dittgen, T., [Nimmerjahn, A.](#), Waters, J., Pawlak, V., Helmchen, F., Schlesinger, S., Seeburg, P.H., Osten, P. (2004) Sindbis vector SINrep(nsP2S<sup>726</sup>): a tool for rapid heterologous expression with attenuated cytotoxicity in neurons. *J. Neurosci. Methods* **133**: 81-90.

### Book chapters

1. [Nimmerjahn, A.](#), Theer, P., Helmchen, F. (2007) Two-photon laser scanning microscopy. Eds. W. Zinth, M. Braun & P. Gilch. Springer, Heidelberg. *In press*.

### Educational material

1. [Nimmerjahn, A.](#), Sakmann, B., Helmchen, F. (2005) Microglial cells – tireless sentries of the brain. Animated educational film. Design by E. Heil, art for biomed, Frankfurt, Germany.

#### Selected conference abstracts & proceedings

1. Flusberg, B., Nimmerjahn, A., Cocker, E.D., Mukamel, E.A., Baretto, R.P.J., Ko, T.H., Jung, J.C., Schnitzer, M.J. (2007) High-speed cellular level brain imaging in freely moving mice using fluorescence mircoendoscopy. American Society for Neuroscience Meeting, USA.
2. Nimmerjahn, A., Mukamel, E.A., Schnitzer, M.J. (2007) Two-photon imaging of neuronal and glial network activity in the cerebellar cortex of awake mice. American Society for Neuroscience Meeting, USA.
3. Mukamel, E.A., Nimmerjahn, A., Schnitzer, M.J. (2007) Automated sorting of intracellular calcium signals for large-scale imaging studies of neuronal and glial populations. American Society for Neuroscience Meeting, USA.
4. Nimmerjahn, A., Denk, W., Helmchen, F. (2003) Two-photon fiberscope imaging of cellular networks in the neocortex in vivo. American Society for Neuroscience Meeting, USA.

#### **Invited Talks and Symposia**

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1. 8th European Meeting on Glial Cell Function in Health and Disease, London, UK, September 2007  
*Invited speaker*, Functional role of Bergmann glia-Purkinje cell signaling (symposium)
2. 5th Forum of European Neuroscience, Vienna, Austria, July 2006  
*Co-chair and speaker*, Dynamic interactions and plasticity in the developing and mature brain (symposium)
3. Magdeburg Microglia Workshop, Magdeburg, Germany, September 2005  
*Invited speaker*, Microglia in neuroinflammation: Basic mechanisms III (session)
4. 7th European Meeting on Glial Cell Function in Health and Disease, Amsterdam, Holland, May 2005  
*Invited speaker*, Glial cells in neurodegenerative diseases – new discoveries using mouse models and potential repair strategies (symposium)