

# Björn Nadrowski

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## Professional Record

Oct 2012 – Nov 2012	<b>Postdoctoral Fellow</b> , <i>Saarland University</i> , Prof. Karsten Kruse. ◦ continued to work on the polymer growth model	Saarbrücken, GER
Apr 2012 – Sep 2012	<b>Interim Assistant Professor</b> , <i>Institute for Theoretical Physics, Saarland University</i> . ◦ gave a lecture: 'Excerpts from theoretical and experimental biophysics'	Saarbrücken, GER
Nov 2010 – Mar 2012	<b>Postdoctoral Fellow</b> , <i>Saarland University</i> , Prof. Karsten Kruse. ◦ developed a model for polymer growth by using continuum mechanics ◦ simulated the model using a wormlike-chain-model with anisotropic friction ◦ characterized dynamic instabilities by using nonlinear dynamics	Saarbrücken, GER
Feb 2007 – Oct 2010	<b>Volkswagen Foundation Fellow</b> , <i>University of Göttingen and University of Cologne</i> , Prof. Martin Göpfert. ◦ received a grant for my own project: "The physics of an ear": 150,000 Euros ◦ refined the model for fruit fly hearing by using data fitting ◦ found out the similarity between vertebrate hearing and insect hearing	Cologne and Göttingen, GER
May 2005 – Jan 2007	<b>Postdoctoral Fellow</b> , <i>University of Cologne</i> , PD Dr. Martin Göpfert. ◦ co-developed a nanometer-piconewton-precision contactless electrostatic stimulation method by applying electrostatics and electronics ◦ developed a model for fruit fly hearing by using biophysics ◦ characterised the role of some genes by using genetics and data fitting	Cologne, GER
Dec 2004 – Apr 2005	<b>Postdoctoral Fellow</b> , <i>Max Planck Institute for the Physics of Complex Systems</i> , Prof. Frank Jülicher.	Dresden, GER
1993-1995	<b>Military Service</b> , <i>Paratroopers</i> .	Saarlouis and Oldenburg, GER

## Professional Experience

Interdisciplinarity	close interaction with experimental physicists and biologists, co-devising of experiments
Physics	analysis and mathematical modeling of complex systems, application of theory from nonlinear dynamics, bifurcation theory, statistical mechanics, classical mechanics
Computers	development of data analysis and simulation software, parallel code, use of mainframes, programming in C, C++, Python, Windows, Mac OSX, Linux, Matlab, Mathematica, MS Office, L <sup>A</sup> T <sub>E</sub> X...
Knowledge Transfer	publication of scholarly papers, lectures, exercises, conference contributions, tutoring of PhD - and diploma students
Languages	German (native), English (fluent), French (fluent), Spanish (advanced), Polish (beginner)

## Fellowships

Feb 2007 – May 2010	<b>Volkswagen Foundation Fellow</b> , <i>University of Cologne, University of Göttingen</i> , Own Project: "The physics of an ear", Grant Money: 150,000 Euro.	Göttingen and Cologne, GER
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## Education

- 2000 – 2004 **PhD thesis:** Mechanical properties of active hair-bundles  
Supervisor Prof. Frank Jülicher  
Institutions *University Paris VII, Denis Diderot* Paris, FRA  
*Max Planck Institute for the Physics of Complex Systems* Dresden, GER  
Grade "*Très honorable avec félicitations*"(*summa cum laude*)  
Summary Development of a mathematical/physical model that explains the active mechanical properties of the auditory sensory organelle of vertebrates, the hair bundle
- 1995-2000 **University**
- Sep 1999 – **DEA (French Diploma fifth year) in 'Fields, Particles and Matter'**, Paris, FRA  
Jul 2000 *University Paris VII, Denis Diderot, "Mention bien"(good): 15.*
- Sep 1998 – **Maîtrise in physics (M.sc.)**, *University Joseph Fourier, Grenoble I*, Grenoble, FRA  
Sep 1999 "*Mention bien*"(*good*): 15.
- Apr 1999 – **Stage de Maîtrise (practical training)**, *University of Granada, SSo-* Granada, ESP  
Sep 1999 *bresaliente*"(*very good*): 9/10.
- Sep 1997 – **Licence in physics**, *Université Joseph Fourier, Grenoble I*, "*Mention* Grenoble, FRA  
Jul 1998 *assez bien*"(*rather good*): 13.8.
- Sep 1995 – **Vordiplom in physics (B.sc.)**, *University of Leipzig, Behr gut*"(*very* Leipzig, GER  
Jul 1997 *good*): 1.4.
- 1984 – 1993 **High School**
- 1984 – 1993 **Abitur**, *Klaus-Groth-Schule, "gut"(good): 1.9.* Neumünster, GER

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## Selected publications

Senthilan PR, Piepenbrock D, Ovezmyradov G, **Nadrowski B**, Bechstedt S, Pauls S, Winkler M, Möbius W, Howard J, Göpfert MC

*Drosophila auditory organ genes and genetic hearing defects*

Cell, 150:1042-1054, DOI: 10.1016/j.cell.2012.06.043, (2012)

Effertz T, **Nadrowski B**, Piepenbrock D, Albert JT, Göpfert, MC

*Direct gating and mechanical integrity of Drosophila auditory transducers require TRPN1*

Nature Neuroscience, 15:1198-1200, DOI: 10.1038/nn.3175, (2012)

**Nadrowski B**, Albert JT, Göpfert MC

*Transducer-based force generation explains power amplification in Drosophila hearing*

Current Biology, 18(18):1365-1372, DOI: 10.1016/j.cub.2008.07.095, PMID: 18789690 (2008)

**Nadrowski B**, Martin P, Jülicher F

*Active hair-bundle motility harnesses noise to operate near an optimum of mechanosensitivity*

Proceedings of the National Academy of Sciences USA 101(33):12195-12200, DOI: 10.1073/pnas.0403020101, PMID: 15302928 (2004)

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## Interests

- Sports Triathlon, Marathon, Inline Skating, Skiing, Tennis, Sailing, Ultimate Frisbee, Salsa
- Culture Actor in Layman Groups, Guitar, Harmonica, Cinema
- Miscellaneous Science, Politics, Economics, Religions, History, Discussions, Languages