

Curriculum Vitae

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Personal

Name: Dr. rer. nat. Axel Gerhard Rossberg
Citizenship: UK & Germany
Current Position: Reader in Theoretical Ecology
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Education

January '98 Doktor der Naturwissenschaften (Ph.D., physics), "summa cum laude" (beyond best regular grade)
Dissertation Title: *The Amplitude Formalism for Pattern-Forming Systems with Spontaneously Broken Isotropy and some Applications*
10/1994 – 09/1998 Universität Bayreuth, doctoral student, Supervisor: L. Kramer
08/1994 Master of Arts, Supervisor: J. Swift
10/1993 – 09/1994 University of Texas at Austin, 2 semesters, Major: Physics, Minor: Mathematics
08/1992 Vordiplom (pre-diploma), "sehr gut" (best regular grade)
10/1990 – 09/1993 Universität Würzburg, 6 semesters, Major: Physics, Minor: Computer Science

Appointments

09/2015 – Reader, School of Biological and Chemical Sciences, Queen Mary University London, UK
01/2013 – 08/2015 Honorary Lecturer, School of Environmental Sciences, University of East Anglia, UK
01/2012 – 08/2015 Principal Scientist at Centre for Environment, Fisheries & Aquaculture Science, UK
08/2010 – 08/2015 Senior Researcher Fellow (later part time) at School of Biological Sciences, Queen's University Belfast, UK
08/2008 – 07/2010 Research Fellow at School of Biological Sciences, Queen's University Belfast, UK
04/2007 – 08/2008 Research Scholar at IIASA (International Institute for Applied Systems Analysis), Austria
04/2005 – 03/2006 Part-Time Lecturer at Sophia University, Tokyo, Japan
10/2003 – 03/2007 Visiting Associate Professor at Center of Excellence "Environmental Risk Management for Bio/Eco-Systems", Yokohama National University, Japan
04/2001 – 09/2003 Researcher at Center for Data Analysis and Modeling, Universität Freiburg, Germany
10/2000 – 03/2001 Visiting Scholar at Department of Philosophy, Columbia University, New York, NY, U.S.A.
10/1998 – 09/2000 Postdoctoral Researcher at Nonlinear Dynamics Group, Kyoto University, Kyoto, Japan
10/1996 – 09/1998 Research Assistant at Department of Physics, Universität Bayreuth, Germany
10/1995 – 09/1996 Teaching Assistant at Department of Physics, Universität Bayreuth, Germany

Teaching

Undergraduate	09/2018 –	Queen Mary University London, Statistics in <i>Research Methods and Communication I & II</i>
Undergraduate	09/2017 –	Queen Mary University London, Module Convener for undergraduate final year research projects
Post Graduate	10/2016	Queen Mary University London, <i>Statistics and Bioinformatics</i>
Post Graduate	01/2016 –	Queen Mary University London, <i>Ecological Theory and Applications</i>
Post Graduate	09/2015 –	Queen Mary University London, <i>Ecosystem Structure and Functioning</i>
Post Graduate	07/2014	DEVOTES Summer School at AZTI-Tecnalia, <i>Understanding the mechanics of marine food webs</i> and <i>Applying food-web theory for management and the Marine Strategy Framework Directive</i> (guest lectures)
Post Graduate	11/2013	School of Mathematics, University of East Anglia, <i>Why food webs are hard to model</i> (guest lecture)
Undergraduate	10/2010 – 12/2010	School of Biological Sciences, Queen's University Belfast, <i>Biochemical Methods, Experimental Design and Statistics</i> (lectures and practicals)
Undergraduate	04/2005 – 03/2006	Faculty of Comparative Cultural Studies, Sophia University, Tokyo, <i>Environmental Issues I&II</i> (two full-semester lectures)
Post Graduate	04/2004 – 03/2007	Graduate School of Environment and Information Sciences, Yokohama National University, <i>Basic Methods of Theoretical Ecology and their Application</i> (three full-semester lectures, in Japanese)
Post Graduate	10/2001 – 02/2002	Fakultät für Physik, Universität Freiburg, <i>Concepts of Nonlinear Dynamics</i> (full semester lecture, co-tought with Jens Timmer, in German)
High-School	11/2001	Freiburg Seminar, City of Freiburg <i>The Four Capital Sins of Modeling</i> (in German)
Undergraduate	10/1995 – 09/1996	Department of Physics, University of Bayreuth, <i>Electrodynamics</i> (two full semester problem-solving classes, in German)

(Co-)Supervision and Tutoring

2018	BSc	Bilal Ashraf Sahi, <i>Interaction diversity of communities residing within prey-predator, mutualistic and host-parasitic network types</i>
2018	MSc	Thomas Julian Del Santo O'Neill, <i>Assessment of management options to attain Maximum Sustainable Yield from multiple interacting stocks in the North Sea</i>
2017 –	PhD	Jacob Louis Dinner O'Sullivan, <i>Spatially explicit theoretical community ecology</i> .
2016 –	PhD	Orestes Gutierrez al-Khudhairi, <i>Ecological constraints and adaptation of attack rates</i> .
09/2015 –	BSc	Personal academic advisor to several students
2014	Guest Student	Nao Takashina, <i>Maximum sustainable yield in size-structured populations</i>
2012	Summer Student	Rebecca Reid, <i>Total reproductive value as an index for stock size of commercial fish</i>
2009 – 2013	PhD	Tak Fung, <i>Sustainable fisheries and the diversity of marine communities: A theoretical investigation</i> , co-supervised with Keith Farnsworth
2005 – 2006	Bachelor	Kaori Yanagi (Statistics of trophic interaction strengths), co-supervised with Takashi Amemiya
2004 – 2005	Bachelor	Takuo Yumura (Analysis of food-web topology), co-supervised with Takashi Amemiya
2002 – 2003	Diploma	Kilian Bartholomé, <i>Non-linear data analysis for vortex flow-meters</i> , co-supervised with Jens Timmer
1997 – 1998	Diploma	Anke Lindner, <i>Three-dimensional Pattern formation in liquid crystals</i> , co-supervised with Lorenz Kramer

Grants, Awards and Scholarships

2019 – 2022	BBSRC funded LIDo iCASE studentship with Cefas to study <i>Methods and policy pathways to optimize production of multiple interacting fish stocks</i>
2014 – 2018	Co-I and WP leader in NERC/Defra-funded <i>Marine Ecosystems Research Program</i> , £4M (£300k for Cefas, of which £75k were subcontracted to QMUL for my contributions)
2013 – 2017	Co-I of OCEAN-CERTAIN EU-FP7 collaboration to investigate marine impacts of climate change, €7M (€220k for Cefas)
2013	The book <i>Food Webs and Biodiversity: Foundations, Models, Data</i> wins PROSE Award in the category “Biological Sciences”
2012 – 2018	Co-I of FizzyFish Defra project to develop management options for fisheries and climate-change impacts, £1.25M for Cefas
2012 – 2017	Co-PI of MYFISH EU-FP7 collaboration to operationalise Maximum Sustainable Yield, €5M (€220k for QUB)
1998 – 2000	JSPS/Alexander von Humboldt Foundation, research fellowship, ¥7,200,000 (≈£40,000)
1998	City of Bayreuth: “Best dissertation of the year”
1994 – 1996	Deutsche Forschungsgemeinschaft: research fellowship
1993 – 1994	Studienstiftung des Deutschen Volkes (German National Merit Foundation): regular fellow

Editorial Work

- 2015 – Editor, *Theoretical Ecology*
- 2008 – Associate Editor, *The American Naturalist*
- 2007 – Host of the *foodwebs* mailing list (<http://foodwebs.info>)
- 2007 – Guest editor, Special Section on Current Food-Web Theory in *Ecological Complexity* 5(2), 2008 (together with Katsuhiko Yoshida)

Society Memberships

- 06/2010 – British Ecological Society
- 08/2010 – International Union for the Conservation of Nature
- 04/2008 – The American Society of Naturalists
- 11/2005 – 01/2007 Ecological Society of Japan
- 08/2005 – 08/2015 Ecological Society of America
- 04/2005 – 01/2007 Society of Evolutionary Studies (Japan)
- 08/2004 – 08/2008 Japanese Society of Mathematical Biology
- 09/2000 – 10/2008 American Physical Society
- 02/1999 – 01/2007 Physical Society of Japan
- 10/1994 – 08/2008 Deutsche Physikalische Gesellschaft

Other Responsibilities

- 2015 – 2018 Expert Advisor to Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES), Lead Author of upcoming Regional Assessment for Europe and Central Asia
- 2012 – 2015 UK delegate to the expert group on Food Webs at OSPAR
- 2012 – 2015 Cefas representative at the Healthy and Biologically Diverse Seas Evidence Group, advising UK governmental agencies
- 2009 – 2015 UK delegate to the International Council for the Exploration of the Sea (ICES), contributing to numerous working groups and workshops related to marine biodiversity.
- 2001 – 2003 Guest-speaker program at Center for Data Analysis and Modeling, Freiburg
- 1996 – 1998 Administration of computing facilities at Department for Theoretical Physics, U Bayreuth

Programming Experience

C, C++, FORTRAN, R, Mathematica, Matlab, Sage, AWK, Perl, Lisp, FOURTH, Assembler.
Contributions to the X.org touchpad driver contained in all major Linux distributions.

Language Skills

German (native), English, Japanese, Portuguese, Italian

Publications

As of June 2019, 77 scientific journal publications, including contributions to *Trends in Ecology and Evolution* (impact factor 15.3), *Nature Sustainability*, *Nature Communications* (10.7), *Physical Review Letters* (7.7), *Advances in Ecological Research* (6.3), *Proceedings of the Royal Society B* (5.3), *Ecology* (5.0), and *The American Naturalist* (4.5). ISI number of citations: over 1500; ISI h-index: 25. See <http://axel.rossberg.net/paper> for details.