Maik Kschischo

Curriculum Vitae

PERSONAL DATA

Name: Maik Werner Kschischo

Born: 05/06/1970 in Altdöbern

Marital Status: married to Emma Claire Wallis

Nationality: german

CURRENT RESEARCH

Data Analysis and Modelling in Biology

- Integrative data analysis and modelling in Cancer Research (analysis and modelling of high dimensional data applied to chromosomal instability, tumour heterogeneity, drug resistence and cancer signalling)

- Algorithms and methods for data analysis and modelling with uncomplete and uncertain knowledge, Data Assimilation techniques for Systems Biology

PROFESSIONAL EXPERIENCE

2002-present	Professor of Biomathematics, University of Applied Sciences Koblenz, RheinAhrCampus Remagen
2011	Visiting scientist at Cancer Research UK, London Research Institute (CRUK-LRI)
2000 – 2002	Statistician and scientific developer Text Mining, Lion Bioscience AG, Heidelberg
2000 – 2000	Software engineer speech recognition, Multiport AG, Berlin (company went out of business)
1997 – 2000	PhD student at the Max-Planck-Institute of Colloids and Interfaces, Potsdam

EDUCATION

July 2000	PhD in theoretical physics University of Potsdam Title: Statistical methods of biological sequence alignment.
February 1997	Diploma (equivalent to a MSC level) in physics Humboldt University in Berlin
1990 – 1997	First class degree in physics (German: 1.3) University of Halle, Humboldt University in Berlin

TEACHING

Courses taught:

Probability and Statistics 1-3

Mathematical Modelling

Bayesian Statistics

Causal Statistical Inference

Statistical Bioinformatics

Systems Biology

Introduction to Stochastic Modelling

Statistical Thermodynamics in Biology

Mathematical Modelling

Introduction to Feedback and Optimal Control Theory

Differential Equations 1-2

Analysis 1-4

Linear Algebra 1-2

Functional Analysis

Complex Analysis

Programming in Java

SUPERVISION

since 2015	Ulrike Naumann, PhD student, Topic: Statistical Modelling of Tumour Heterogeneity.
since 2014	Benjamin Engelhardt, collaborative PhD student with the BIT Institute, University of Bonn, Topic: Modelling the Signal Transduction of the Muscarinic acetylcholine receptor.

since 2012	Jil Sander, collaborative PhD student with the LIMES Institute, University of Bonn, Topic: High throughput sequencing data analysis of somatic mutations in cancer.
2009-2013	David Endesfelder, PhD student, Thesis Title: Statistical analysis of chromosomal instability in cancer
2007-2011	Matthias Kahm, PhD student: Thesis Title: A mathematical model of potassium homeostasis in the yeast *Saccharomyces cerevisiae*.
since 2002	48 Master, Bachelor and Diploma students

AWARDS

2002	Innovation price of the LION Bioscience AG for the development of the SNPscorer software.

EXPERTISE

- **Statistics and Data Analysis:**

  Bayesian statistics, High dimensional statistics, Causal Statistical Inference, Dynamic systems and control, Stochastic Processes, Uncertainty Quantification

- **Applied Mathematics:**

  Complex Systems and Control, Data Assimilation

- **Systems Biology and Bioinformatics:**

  High throughput data analysis, Mechanistic and statistical modelling of biological systems, Chromosomal instability and drug sensitivity in cancer, Sequence analysis, Medical systems biology, Pharmacokinetics/Pharmacodynamics modelling

- **Computer Science:**

  Machine learning, Text mining and Big data analysis in Biology

- **Programming:**

  R, Matlab, Python, Java, C, C++, Perl, SAS, MySQL.

- **Big Data Technologies:**

  Hadoop and Spark

- **Physics:**

  Statistical physics and Thermodynamics, Stochastic physics

- **Languages:**

  German (mother tongue), English (full professional proficiency) and Russian (basic)

GRANTS

2013-2015	Private donation for cancer research Amount: 30000 Euro
2011-2011	Intensified bilateral collaboration Amount: 6000 Euro (travel money) German Research Foundation (DFG)
2010-2013	TRANSLUCENT 2: Modelling ion homeostasis in the yeast *Saccharomyces cerevisiae* Amount: 102,000 Euro ERANET-Project: SysMO-2 German Ministery of Education and Research (BMBF)
2008-2010	Competence Centre for Biomathematics Amount: 85,000 Euro Rheinland-Pfalz State, Ministery for Education, Youth, Science und Culture
2007-2010	TRANSLUCENT: Gene interaction networks and models of cation homeostasis in *Saccharomyces cerevisiae* Amount: 85,000 Euro ERANET-Project: SysMO German Ministery of Education and Research (DFG)
2003	Computer facilities and equipment Amount: 100,000 Euro German Research Foundation (DFG)

REFEREE / REVIEWER

since 2013:	Scientific Board Member at the Center for Systems Biology (C4SYS), Academy of Sciences of the Czech Republic and 3 partnering institutions: Masaryk University in Brno, University of South Bohemia in Ceske Budejovice, Global Change Research Center Academy of Sciences of the Czech Republic., see http://c4sys.cz/infrastructure/steering-committee/

since 2011:	Reviever for De Nederlandse Organisatie voor Wetenschappelijk Onderzoek (NWO), Interdivisional Innovational Research Incentives Scheme, entitled 'Molecular mechanisms of genetic interactions: unravelling complex disease phenotypes'
since 2007:	Reviewer for the German Ministry of Education and Research (Topic: Statistics in molecular diagnostics and neurodegenerative diseases)
Journals:	Nature, Cancer Research, Bioinformatics, PLOS Computational Biology, BMC Bioinformatics, Microarrays, European Physical Journal (EPJ) E, Bulletin of Mathematical Biology, Journal of Statistical Software, Briefings in Bioinformatics, Physics Letters A, Physical Review E

MANAGEMENT AND ADMINISTRATION

since 2016:	Member of the Scientific Advisory Committee of the Graduate Center, University of Applied Sciences Koblenz.
since 2015:	Speaker of the Research Network Data Analysis, Modelling and Simulation, University of Applied Sciences Koblenz.
since 2013:	Provost of the Biomathematics degree programme, University of Applied Sciences Koblenz.
2011-2013	Scientific coordinator for public relations at the Department of Mathematics and Technology, University of Applied Sciences Koblenz.
since 2008:	Speaker of the Competence Centre for Biomathematics, State of Rheinland-Pfalz, Germany.
2007-2013	Deputy coordinator of the SysMO/Translucent transnational research initiative (Topic: Modelling ion homeostasis in yeast).

REFEREES

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