

Curriculum Vitae: Michael P.H. Stumpf

Personal Details

Full Name Michael Peter Helmuth Stumpf
Present Position *Professor for Theoretical Systems Biology*
Address Melbourne Integrative Genomics
School of BioSciences & School of Mathematics and Statistics, University of Melbourne, Parkville 3010, Victoria, Australia
Visiting Professor, Imperial College London, UK

Telefon +61 3 8344 6718
Email mstumpf@unimelb.edu.au

Professional History

Sep 2018 - Professor for Theoretical Systems Biology, University of Melbourne
2007 - Aug 2018 Professor for Theoretical Systems Biology (HEFCE-funded)
2003-06 Reader in Bioinformatics, Imperial College London.
2003-06 Wellcome Trust Career Development Fellow, Department of Biology, Imperial College London.
2002-03 Wellcome Trust Career Development Fellow, Department of Biology, University College London.
1999-2002 Wellcome Trust Research Training Fellow in Mathematical Biology, Department of Zoology, University of Oxford with Professor Lord May of Oxford.

Qualifications

1995-99 DPhil in Condensed Matter Theory, University of Oxford.
1990-95 Dipl. Phys., Physics (1st Class), Universität Tübingen, Universität Göttingen and Max-Planck Institute for Fluid Dynamics.

Research Interests

Biological Research: Cell Fate Decision Making Processes; Gene Regulation and Signalling During Stem Cell Differentiation; Ecological Dynamics of Stem Cells; Multiscale Modelling of *in vivo* Processes in Development and Immunology; Data Integration and Fusion in Cell and Developmental Biology; Analysis of Single Cell Transcriptomic and Proteomic Data; Synthetic Biology; Engineering Biology to Tackle Global Warming.

Theoretical Research: Stability and Robustness of Stochastic Dynamical Systems; Control of Dynamical Systems and Networks; Differential Topology of Epigenetic Landscapes.

Methodology Development Statistical Inference; Approximate Bayesian Computation; Empirical Bayes; Data Fusion; Multiscale Modelling; Probabilistic Graphical Models; Network Inference and Analysis; Multivariate Information Measures in Inference and Machine Learning; Reachability Analysis.

Selected Recent Grants

2017-2020 Next generation approaches to connect models and quantitative data, BBSRC, £790k (PI).
2017-2021 A synthetic approach towards understanding the robust formation of Turing patterns in developmental biology, Volkswagen Stiftung, €1.4Million (PI).
2016-2020 A systems Biology Approach to Islet Biology, EU H2020, €4.7Million (co-I).
2015-2019 Managing the Nitrogen economy of bacteria, BBSRC, £3.7Million (co-PI).

2014-2017	<i>In vivo</i> and <i>in silico</i> analysis of the haematopoietic stem cell niche, BBSRC, £860k (PI).
2013-2017	Statistical modelling of <i>in vivo</i> immune response dynamics in zebrafish to multiple stimuli, BBSRC, £800k (PI).
2013-2017	Connecting <i>in-vivo</i> optical imaging with dynamic modelling of host-pathogen interaction during bacterial infection, MRC, £380,000 (Biocomputing Fellowship to Dr Angelique Ale, co-PI).
2012-2015	BioTransistors, BBSRC, £360k (PI).
2011-2014	Cellular decision making: from noise to robust phenotypes, HFSP, \$1.2Million (PI).
2011-2014	Robust analysis of signal transduction underlying cellular variability in stem cells, MRC, £371,000 (Biocomputing Fellowship for Dr Sarah Filippi, co-I).
2011-2013	Social Networks and the Digital Economy, EPSRC, £1.1Million (co-I).
2010-2013	Reverse engineering of complex systems in nature, Leverhulme Trust, £240k (PI).
2009-2013	Mapping combinatorial stress response in <i>E. coli</i> and <i>M. tuberculosis</i> using chimeric proteins and probabilistic modelling, BBSRC, £3 Million (co-PI).
2009-1012	Development of immunofluorescence and stochastic modelling approaches to study mammalian signalling processes, BBSRC-JAIST partnering award, £50k (PI).
2009-2012	Inference-based modelling in systems and population biology, BBSRC, £780k (PI).

Awards and Honours

2013	Miegunyah Distinguished Visiting Fellowship, University of Melbourne
2011	Elected Fellow of the Society of Biology
2010	Rector's Medal for Excellence in Research Supervision
2009-2014	Royal Society Wolfson Research Merit Award
2005-08	EMBO Young Investigator
2000-2003	EPA Cephalosporin Junior Research Fellow, Linacre College Oxford
1996-98	Balliol College Jowett Exhibitioner for Science
1995-99	Kekulé PhD Fellowship, University of Oxford

Selected Offices and Committee Membership

2018-	Editorial Board Member, <i>Cell Systems</i> .
2017	Site Review Committee Member, Structural and Mathematical Biology, <i>The Francis Crick Institute</i> .
2012-2018	Editor in Chief, <i>Statistical Applications in Genetics and Molecular Biology</i>
2012-2015	Member of the Luxembourg Science Foundation Lifescience Panel.
2012-	Faculty Member of Faculty 1000 (Population Biology; Systems Biology).
2011-2014	Royal Society Newton International Fellowship Committee
2010-	Associate Editor <i>BMC Systems Biology</i> , <i>BMC Bioinformatics</i> , <i>Human Genomics</i>
2008-2014	Member of the BBSRC <i>Training and Awards Committee</i> , now <i>Committee E</i> .
2006-2008	Member of the BBSRC <i>Engineering and Biological Systems Committee</i> .

Research Training and Mentorship

To date I have supervised 23 PhD students to completion and 34 Postdoctoral Researchers. I have sponsored and mentored research fellows from BBSRC (BBSRC Future Leaders Fellow); MRC (x2); Wellcome Trust (x1); NC3R (x1); *The Royal Society* (x2); and Imperial College Research Fellows (x2).

Former members have taken up permanent academic appointments and/or senior fellowships at the Universities of Birmingham; Cambridge; Edinburgh(x2); Oxford (x2); Reading; Strasbourg; UCL; University of Southern California; NUS/Yale; Warsaw & Polish Academic of Sciences Engineering Institute; Imperial Cancer Research (x2); Max Planck Institute for Biophysical Chemistry. These appointments have been in mathematics, statistics, computer science, engineering, and life science/biochemistry departments.

Between 2003 and 2018 I have also supervised 121 MSc student projects.