

Melanie I. Stefan

Professional appointments

- Apr 2015 – **Edinburgh-Zhejiang Lecturer**, *School of Biomedical Sciences*,
University of Edinburgh (UK)
- Jan 2015 – **Visiting Scientist**, *Modelling of allosteric synaptic proteins*.
Mar 2015 Babraham Institute, Cambridge (UK), Le Novère lab
- Jul 2013– **Lecturer and Curriculum Fellow**, *Quantitative Biology*.
Dec 2014 Harvard Medical School, Boston (US), Department of Neurobiology and Curriculum Fellows Program
- Nov 2010– **Postdoctoral Fellow**, *Modes of regulation of postsynaptic proteins*, California Institute of
Jun 2013 Technology, Pasadena (US), Kennedy lab.
- Jan 2010– **Visiting Fellow**, *Understanding CaMKII regulation through modelling and experiment*,
Jun 2010 University of Tokyo (JP), Kuroda lab.
- Oct 2005– **Pre- and postdoctoral research**, *Allosteric regulation and cooperativity in synaptic*
Oct 2010 *plasticity*, EMBL-European Bioinformatics Institute, Cambridge, Le Novère lab.
- Jan–Dec **MSc research**, *Morphological characterisation and genetic mapping of zebrafish skin*
2004 *mutants*, MPI for Developmental Biology, Tübingen (DE), Nüsslein-Volhard lab.

Education

- PhD **Bioinformatics/Molecular Biology**, 2009, EMBL-EBI and Clare College, Cambridge.
- MSc **Genetics**, 2005, University of Salzburg (AT), distinction.
- MSc **Mathematics**, 2012, The Open University (UK).

Research Interests

- Computational models of neuronal signalling.**
- Theoretical and computational biochemistry.**
- Learning and memory in the classroom.**

Awards and fellowships

- 2016 **Leadership and Development Programme**, *Scottish Crucible*.
- since 2104 **Chartered Biologist**, *Society of Biology*.
- 2014 **SPARK grant**, *Harvard Initiative for Teaching and Learning*.
- 2014-2016 **Fellowship in Medical Education Research**, *Harvard Medical School Academy*.
- 2011–2013 **Fast Track Fellow**, *Robert Bosch Foundation*.
- 2010-2012 **Long-term post-doctoral fellowship**, *EMBO*.
- 2010 **Short-term post-doctoral fellowship**, *Japan Society for the Promotion of Science*.
- 2009 **Christian Doppler Prize for biology**, *State of Salzburg, Austria*.
- 2005–2009 **Pre-doctoral fellowship**, *EMBL*.
- 2002 **Excellence award for mathematics**, *University of Salzburg*.

Advising

- since 2016 **PhD Students**, Richard Fitzpatrick (2016-, UoE), Zale Cao (2016-, UoE).
since 2015 **MSc Students**, Kadri Pajo (2016, UoE), Yubin Xie (2015-2016, UoE).
since 2007 **Undergraduate Students**, Susana Roman Garcia (2017, UoE), Jana Finzgar (2017, UoE), David Tolnay (2011-2013, CalTech), David Marshall (2007, EBI).
since 2016 **High School Students**, Excellence Ogunbayo (2016, UoE).

Current Teaching

- 2017 **Introduction to Cellular and Molecular Biology 1**, *Course Lead*, University of Edinburgh/Zhejiang University.
2016-2017 **Inetgrative Biomedical Sciences 1**, *Lecturer*, UoE/ZJU.

Selected Publications

N. Rodriguez, J.-B. Pettit, P. Dalle Pezze, L. Li, A. Henry, M. P. van Iersel, G. Jalowicki, M. Kutmon, K. N. Natarajan, D. Tolnay, **M. I. Stefan**, C. T. Evelo and N. Le Novère. The systems biology format converter. *BMC Bioinformatics*, 17(1), 2016.

M. I. Stefan, J. L. Gutlerner, R. T. Born and M. Springer. The quantitative methods boot camp: teaching quantitative thinking and computing skills to graduate students in the life sciences. *PLoS Comput Biol*, 11(4):e1004208, 2015.

M. I. Stefan, T. M. Bartol, T. J. Sejnowski and M. B. Kennedy. Multi-state modeling of biomolecules. *PLoS Comput Biol*, 10(9):e1003844, 2014.

M. I. Stefan and N. Le Novère. Cooperative binding. *PLoS Comput Biol*, 9(6):e1003106, 2013.

L. Endler, **M. I. Stefan**, S. Edelstein and N. Le Novère. *Using chemical kinetics to model neuronal signalling pathways*. In: *Computational Systems Neurobiology*, N. Le Novère (ed). Springer, 2012.

L. Li, **M. I. Stefan** and N. Le Novère. Calcium input frequency, duration and amplitude differentially modulate the relative activation of calcineurin and CaMKII. *PLoS One*, 7(9):e43810, 2012.

M. I. Stefan, D. P. Marshall and N. Le Novère. Structural Analysis and Stochastic Modelling Suggest a Mechanism for Calmodulin Trapping by CaMKII. *PLoS One*, 7(1):e29406, 2012.

S. Edelstein, **M. I. Stefan** and N. Le Novère. Ligand depletion in vivo modulates the dynamic range and cooperativity of signal transduction. *PLoS One*, 5(1):e8449, 2010.

C. Li, M. Donizelli, N. Rodriguez, H. Dharuri, L. Endler, V. Chelliah, L. Li, E. He, A. Henry, **M. I. Stefan**, J. L. Snoep, M. Hucka, N. Le Novère and C. Laibe. Biomodels database: An enhanced, curated and annotated resource for published quantitative kinetic models. *BMC Syst Biol*, 4:92, 2010.

M. I. Stefan, S. J. Edelstein and N. Le Novère. Computing phenomenologic Adair-Klotz constants from microscopic MWC parameters. *BMC Syst Biol*, 3(1):68, 2009.

M. I. Stefan, S. J. Edelstein and N. Le Novère. An allosteric model of calmodulin explains differential activation of PP2B and CaMKII. *Proc Natl Acad Sci USA*, 105(31):10768–10773, 2008.