

DR DAVID SCHNÖRR

PHONE +44 (0) 020 759 45280 E-MAIL d.schnoerr@imperial.ac.uk

QUALIFICATIONS

- 2013 - 2016 **PhD:** “Approximation methods and inference for stochastic biochemical kinetics”, Institute of Quantitative Biology, Biochemistry and Biotechnology, University of Edinburgh, UK.
No corrections; **four first-author publications**, including one in *Nature Communications*.
- 2006 - 2012 **German Diploma in Physics**, Heidelberg University, Germany.

EMPLOYMENT

- OCT 2017 - **Postdoctoral Researcher**, School of Life Sciences, Imperial College
PRESENT London, UK.
First-author publication under review in *Cell Systems*. **Supervision** of one MSci and two PhD projects. Six times **invited speaker** at seminars, twice at workshops. Establishment of collaborations with experimental labs.
- MARCH 2016 - **Postdoctoral Researcher**, School of Informatics, University of
SEP 2017 Edinburgh, UK.
Three first-author publications, including one in *Physical Review Letters*.
Four times **invited speaker** at seminars.

GRANTS AND AWARDS

- 2013 – 2016 Scholar of the Biotechnology and Biological Sciences Research Council, total amount: **£70,500**.
- 2009 – 2012 Scholar of the Studienstiftung des Deutschen Volkes (German National Academic Foundation).

TEACHING AND SUPERVISION

- 2018 **Assistant supervisor*** of PhD project on stochastic Turing patterns and PhD project on metabolic whole cell modelling.
- 2018 **Supervisor** of MSci project on Bayesian inference for stochastic gene expression models.
- 2014 - 2015 **Tutor:** School of Biology, University of Edinburgh. **Three tutorials** on “Mathematics and Physics for Biologists” (25 students, 2hrs per week, undergraduate level). Revision of lecture content and exercises.
- 2012 **Tutor:** Department of Mathematics, Heidelberg University. **Two tutorials** on “Mathematics for Natural Scientists” (20 students, 2hrs per week, undergraduate level). Grading and discussion of exercise sheets.
- 2008 – 2011 **Tutor:** Department of Physics, Heidelberg University. **Two tutorials** on “Theoretical Physics I” and “Theoretical Physics II”(25 students, 2hrs per week, undergraduate level). Grading and discussion of exercise sheets.

EVIDENCE OF ESTEEM

- Ten times **invited speaker** at seminars.
- **Reviewer** for eleven journals and conferences.
- Invited to BIRS 2017 workshop in Banff, Canada.
- **Invited speaker** at two conferences on mathematical modelling of cellular processes at the Centro di Ricerca Matematica Ennio De Giorgi, Pisa, Italy, October 2018.

*Official post at Imperial College London.

PUBLICATIONS

Nine peer-reviewed journal publications, eight first author; total citations: 255, h-index: 8. Citations as indicated on [Google Scholar](#) (12 February 2019). Journals: *Nature Communications*, *Physical Review Letters*, *Journal of Physics A*, *Journal of Chemical Physics*, *Annals of Physics*.

- [9] **D. Schnoerr**, B. Cseke, R. Grima, and G. Sanguinetti. Efficient low-order approximation of first-passage time distributions. [Physical Review Letters](#) 119 (2017): 210601.
- [8] C. Cianci, **D. Schnoerr**, A. Piehler, and R. Grima. An alternative route to the system-size expansion. [Journal of Physics A: Mathematical and Theoretical](#) 50 (2017): 395003.
- [7] [†]**D. Schnoerr**, G. Sanguinetti, and R. Grima. Approximation and inference methods for stochastic biochemical kinetics - a tutorial review. [Journal of Physics A: Mathematical and Theoretical](#) 50 (2017): 093001.
- [6] B. Cseke[‡], **D. Schnoerr**[‡], M. Opper, and G. Sanguinetti. Expectation propagation for continuous time stochastic processes. [Journal of Physics A: Mathematical and Theoretical](#) 49 (2016): 494002.
- [5] **D. Schnoerr**, R. Grima, and G. Sanguinetti. Cox process representation and inference for stochastic reaction-diffusion processes. [Nature Communications](#) 7 (2016): 11729.
- [4] **D. Schnoerr**, G. Sanguinetti, and R. Grima. Comparison of different moment-closure approximations for stochastic chemical kinetics. [The Journal of Chemical Physics](#) 143.18 (2015): 185101.
- [3] **D. Schnoerr**, G. Sanguinetti, and R. Grima. Validity conditions for moment closure approximations in stochastic chemical kinetics. [The Journal of Chemical Physics](#) 141.8 (2014): 084103.
- [2] **D. Schnoerr**, G. Sanguinetti, and R. Grima. The complex chemical Langevin equation. [The Journal of Chemical Physics](#) 141.2 (2014): 024103.
- [1] **D. Schnoerr**, I. Boettcher, J. M. Pawłowski, and C. Wetterich. Error estimates and specification parameters for functional renormalization. [Annals of Physics](#) 334 (2013): 83-99.

Peer-reviewed conference contributions

- [10] D. Milios, G. Sanguinetti, and **D. Schnoerr**. Probabilistic model checking for continuous time Markov chains via sequential Bayesian inference. [International Conference on Quantitative Evaluation of Systems](#) (2018): 289-305.

Submitted preprints

- [11] N. S. Scholes[§], **D. Schnoerr**[§], M. Isalan, M. P. H. Stumpf. Turing patterns are common but not robust. *Cell Systems* (under review, second stage). [bioRxiv](#): 352302 (2018).
- [12] M. E. Rule, **D. Schnoerr**, M. H. Hennig, and G. Sanguinetti. Neural Field Models for Latent State Inference: Application to Large-Scale Neuronal Recordings. [bioRxiv](#): 543769 (2019).

[‡]B. Cseke and D. Schnoerr contributed equally.

[†]Selected for the “Highlights 2017 collection” of *Journal of Physics A*.

[§]N. S. Scholes and D. Schnoerr contributed equally.

CONFERENCE AND WORKSHOP TALKS

Six conference and workshop talks, two invited.

- Oct. 2018 Workshop on Stochastic dynamics on large networks: prediction and inference, Max Planck Institute for the Physics of Complex Systems, Dresden, Germany.
- Oct. 2018 **(invited)** Workshop on Nanoscale mathematical modeling of synaptic transmission and calcium dynamics, Centro di Ricerca Matematica Ennio De Giorgi, Pisa.
- Oct. 2018 **(invited)** Workshop on Multiscale modeling and simulations to bridge molecular and cellular scales, Centro di Ricerca Matematica Ennio De Giorgi, Pisa.
- Oct. 2018 Bioms Symposium, BioQuant, Heidelberg University, Germany.
- Jul. 2016 10th European Conference on Mathematical & Theoretical Biology and SMB Annual Meeting, Nottingham, UK.
- Jul. 2015 Workshop on Mathematical Trends in Reaction Network Theory, University of Copenhagen, Denmark.

SEMINAR TALKS (INVITED)

- Dec. 2018 Departmental Seminar, Helmholtz Center Munich, Institute for Computational Biology, Munich, Germany.
- Oct. 2018 Departmental Seminar, Max Planck Institute for the Physics of Complex Systems, Dresden, Germany.
- Sept. 2018 Departmental Seminar, Max Planck Institute for Biophysical Chemistry, Göttingen, Germany.
- Sept. 2018 Biophysics Seminar, Department of Physics, University of Göttingen, Germany.
- May 2018 CeNoS Colloquium, Center for Nonlinear Science, University of Münster, Germany.
- Apr. 2018 BIOMS seminar, BioQuant, Heidelberg University, Germany.
- Jun. 2017 Biophysics and Soft Matter Seminar, Simon Fraser University, Canada.
- Apr. 2017 Industrial and Applied Mathematics Seminar, University of Oxford, UK.
- Oct. 2016 Biomathematical Seminar, Imperial College London, UK.
- Jun. 2016 Stochastic Dynamical Systems in Biology: Numerical Methods and Applications, Newton Institute, University of Cambridge, UK.