Curriculum Vitæ

Peter Ashcroft

Institute for Integrative Biology ETH Zürich Universitätstrasse 16, Zürich, 8092 ☎ +41 (0)44 633 60 34 ☒ peter.ashcroft@env.ethz.ch ੴ ashcroftp.github.io

Personal details

Nationality British

Date of birth 13th October 1989

PhD since 8th September 2015

Research experience

Sep 2015 - Postdoctoral researcher ETH Zürich, Switzerland

Present Supervisor: Prof. Sebastian Bonhoeffer

Group: Theoretical Biology, Institute for Integrative Biology

Interests: Evolutionary dynamics, cancer initiation & progression, hematopoiesis, population structure, quantitative biology, stochastic processes, multi-scale modelling, data analysis.

Education

Sep 2012 - PhD in Theoretical Physics The University of Manchester, UK

Sep 2015 Supervisor: Dr. Tobias Galla

Group: Complex Systems and Statistical Physics, School of Physics and Astronomy Thesis: The statistical physics of fixation and equilibration in individual-based models.

Sep 2008 - Undergraduate degree: Maths and Physics The University of Manchester, UK

Jun 2012 Degree: First Class M.Math and Phys (hons). Overall grade: 84%.

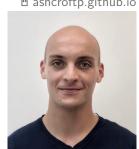
Awards

- 2018 Travel award from systemsX.ch to attend a workshop at ICMS, Edinburgh, UK.
- 2017 Travel award to attend a workshop at the Moffitt Cancer Centre, FL, USA.
- 2016 Springer Thesis Award.
- 2015 Humboldt Research Fellowship for Postdoctoral Researchers (Gratefully declined).
- 2011 Nuffield Foundation funding for a summer research project.

Publications and preprints

- 8. Evolutionary exploitation of PD-L1 expression in hormone receptor positive breast cancer. J. West, D. Park, C. Harmon, D. Williamson, P. Ashcroft, D. Maestrini, A. Ardaseva, R. Bravo, P. Sahoo, H. Khong, K. Luddy, M. Robertson-Tessi, bioRxiv 10.1101/454447 (2018).
- 7. Clonal dominance and transplantation dynamics in hematopoietic stem cell compartments. P. Ashcroft, M.G. Manz, and S. Bonhoeffer, PLoS Comput. Biol. 13, e1005803 (2017).
- 6. Effects of population growth on the success of invading mutants.

 P. Ashcroft, C.E.R. Smith, M. Garrod, and T. Galla, J. Theor. Biol. **420**, 232 (2017).
- The statistical physics of fixation and equilibration in individual-based models.
 P. Ashcroft, Springer Theses: Recognizing Outstanding Ph.D. Research, Springer International Publishing, Switzerland (2016).
- 4. When the mean is not enough: Calculating fixation time distributions in birth-death processes
 - P. Ashcroft, A. Traulsen, and T. Galla, Phys. Rev. E 92, 042154 (2015).



- 3. Stochastic tunneling and metastable states during the somatic evolution of cancer. P. Ashcroft, F. Michor, and T. Galla, Genetics **199**, 1213 (2015).
- 2. Fixation in finite populations evolving in fluctuating environments.

 P. Ashcroft, P.M. Altrock, and T. Galla, J. R. Soc. Interface 11, 20140663 (2014).
- 1. Pattern formation in individual-based systems with time-varying parameters. P. Ashcroft and T. Galla, Phys. Rev. E **88**, 062104 (2013).

Invited talks

- Division of Theoretical Systems Biology (Höfer), Universität Heidelberg, July 2017
- Department for Evolutionary Theory (Traulsen), MPI for Evolutionary Biology, April 2017
- Hematology seminar series, University Hospital Zürich, June 2016
- Cancer Research UK Society Workshop (Outreach event), The University of Manchester, December 2014
- Dana-Farber Cancer Institute (Michor), Harvard School of Public Health, January 2014 & August 2014

Teaching and supervision

- Oct 2018 Masters thesis supervision ETH Zürich, Switzerland
 - Present Student: Juan Gabriel Kostelec
- Mar 2017 PhD project supervision ETH Zürich, Switzerland
 - Present Student: Lei Sun
- Oct 2017 MSc term paper supervision ETH Zürich, Switzerland
 - May 2018 Student: Deborah Zani
- Mah 2016 MSc lab rotation supervision ETH Zürich, Switzerland
 - Apr 2016 Student: Inna Grijnevitch
- Feb 2016 Lecturing and tutorials ETH Zürich, Switzerland
 - Jun 2018 Course: Infectious Disease Dynamics;
 - Student level: Masters;
 - Activity: Lectures on the spread of epidemics on networks; tutorials; oral exams.
- Sep 2014 M.Phys project co-supervision The University of Manchester, UK
 - May 2015 Students: Matthew Garrod and Casandra Smith
- Sep 2014 Undergraduate tutorials The University of Manchester, UK
- May 2015 Courses: Maths 1&2, Introduction to Astrophysics & Cosmology, and Properties of Matter; Student level: First year undergraduate;
 - Activity: Tutorials.
- Sep 2013 M.Phys project co-supervision The University of Manchester, UK
 - May 2014 Students: Michael Dowhyj and Ammamraj Sohi

Administrative duties

Reviewer for journals covering quantitative biology, including: Journal of Theoretical Biology, PLoS Biology, PLoS Computational Biology, and Scientific Reports

Skills and interests

- Mathematical and graphing packages including Mathematica and Matlab
- o Linux OS, including scripting and high-throughput computing
- Programming in C++
- LATEX typesetting

Statistical analysis in R.

Version control using Git

Scientific writing.

- Beginner in German (A2)
- o Machine learning including regression, classification, and neural networks