CASPER BEENTJES

PERSONAL INFORMATION

Adress	New College Holywell Street Oxford, OX13BN United Kingdom	*Website*	http://people.maths.ox.ac.uk/beentjes/
		Date of Birth	October 26, 1991
		Place of Birth	Haarlem
E-mail	beentjes@maths.ox.ac.uk	*Citizenship*	Dutch

EDUCATION

2015-2020 (expected) — University of Oxford, New College,

Doctor of Philosophy

DPhil in Applied Mathematics
Thesis: *Variance reduction techniques for chemical reaction network simulation*
Supervisors: Prof. Ruth Baker, Prof. Radek Erban

2014-2015 — University of Oxford, St. Catherine's College,

Master of Science

Mathematical Modelling & Scientific Computing · *Distinction* (average 82/100)
Thesis: *Computing Bifurcation Diagrams with Deflation*
Supervisor: Prof. Patrick Farrell

2010-2014 — Leiden University,

Bachelor of Science

Mathematics & Physics · *Cum Laude* (average 9.0/10)
Thesis: *Symmetry-Breaking in Patterned Elastic Sheets*
Supervisors Physics: Prof. Martin van Hecke, Dr. Corentin Coulais
Supervisor Mathematics: Dr. Vivi Rottschäfer

WORK EXPERIENCE

Internships

Summer 2019 · OxFORD Asset Management

PUBLICATIONS

Exact solution of stochastic gene expression models with bursting, cell cycle and replication dynamics. (C.H.L. Beentjes, R. Perez-Carrasco, R. Grima), 2020. *Phys. Rev. E 101, 032403*.

Uniformisation techniques for stochastic simulation of chemical reaction networks. (C.H.L. Beentjes, R.E. Baker), 2019. *J. Chem. Phys. 150, 154107*.

Quasi-Monte Carlo methods applied to tau-leaping in stochastic biological systems. (C.H.L. Beentjes, R.E. Baker), 2019. *Bull. Math. Biol. 81, 2931*.

Defining Vitamin D Status Using Multi-Metabolite Mathematical Modelling: A Pregnancy Perspective. (C.H.L. Beentjes et al.), 2019. *J. Steroid Biochem. Mol. Biol. 190, 152-160*.

Submitted

Effects of cell cycle variability on lineage and population measurements of mRNA abundance. (R. Perez-Carrasco, C.H.L. Beentjes, R. Grima), 2020.

Computing disconnected bifurcation diagrams. (P.E. Farrell, C.H.L. Beentjes, Á. Birkisson), 2016.

Conference Proceedings

Accurate particle-based reaction algorithms for fixed timestep simulators. (S.T. Johnston et al.) 2018. *2018 MATRIX Annals*.

Equalizing the Cost of Health Insurance. (C.H.L. Beentjes et al.), 2017. *Scientific Proceedings of the 126th European Study Group with Industry*, pp 29-50.

Single Molecule DNA Mapping. (D. Smith et al.), 2017. *Proceedings of the Multi-Scale Biology Study Group 2017*.

GRANTS, AWARDS AND SCHOLARSHIPS

Grants

2017 · UK MultiScale Biology network collaborative support award (£1000)
Project title: *Defining vitamin D status: a multiscale mathematical approach*

Awards

2015 · MSc Prize for excellence (Mathematical Institute, University of Oxford)
Awarded to the top student in the MSc in Mathematical Modelling and Scientific Computing.

2018 · Landahl travel grant (Society for Mathematical Biology)
Recognises excellence in mathematical biology and promotes greater interaction among mathematical biologists throughout the world.

Scholarships

2015-2019 · Clarendon Scholarship

2015-2018 · New College Graduate Scholarship

2015-2019 · EPSRC Studentship (Declined in favour of Clarendon Scholarship)

2014-2015 · VSB Fonds Scholarship

2014-2015 · Stichting dr. Hendrik Muller's Vaderlandsch Fonds Scholarship

2014-2015 · Genootschap van Noorthey Scholarship

TEACHING EXPERIENCE

2019-2020 — Fixed-term Stipendiary Lecturer

Trinity College, Oxford

Level: Undergraduate (1st and 2nd year).
Multivariable Calculus, Differential Equations 2, Integral Transforms.

2016-2019 — Tutor

Mathematical Institute, Oxford

Level: Undergraduate (3rd year).
Stochastic Modelling of Biological Processes (2017-2019).
Both departmental classes and consultation sessions for exams.

New College, Oxford

Level: Undergraduate (2nd year).
Mathematical Modelling in Biology (2017-2018), Numerical Analysis (2016).

Lincoln College, Oxford

Level: Undergraduate (3rd year).
Various Collections tutorials for 3rd year applied mathematics (2016-2017).

2012-2019 — Teaching Assistant

Balliol College, Oxford

Level: Undergraduate (1st year).
Introductory Calculus, Probability, Multivariable Calculus, Statistics & Data Analysis (2018-2019).

Mathematical Institute, Oxford

Level: Postgraduate.
Mathematical Modelling module for the MSc Mathematical Modelling and Scientific Computing (2016-2018).

Level: Undergraduate (1st year).
Computational Mathematics (2017-2019),
Level: Undergraduate (3rd year).

Further Mathematical Biology, Stochastic Modelling of Biological Processes, Waves and Compressible Flow, Numerical Solutions of Differential Equations 1 (2015-2016).

Mathematical Institute, Leiden

Level: Undergraduate (1st and 2nd year).
Analysis 3 for Physicists, Analysis 2 for Physicists (2013), Analysis 1 for Physicists (2012-2013), Linear Algebra and Image Processing (2014) .

Leiden Institute Of Physics

Level: Undergraduate (2nd year).
Quantum Mechanics I (2012-2013), Classical Mechanics B (2014).

TALKS

2016

Position reconstruction from chemical signals.

· ECMTB/SMB annual meeting, mini-symposium Stochastic Modelling in Biological Systems, Nottingham, July 11 until 15.

2018

Efficient adaptive uniformisation for the analysis of biochemical reaction networks.

· SMB annual meeting, reaction networks & stochasticity session, Sydney, July 8 until 12.

POSTER PRESENTATIONS

2016

Position determination by a single cell using chemical sensing.

· Multiscale methods for stochastic dynamical systems in biology, Edinburgh, February 29 until March 4.

· SIAM Student Conference, Oxford, April 27.

PROFESSIONAL MEMBERSHIP

Mathematics

Society for Industrial and Applied Mathematics (SIAM),
Koninklijk Wiskundig Genootschap (KWG),
Institute of Mathematics & its Applications (IMA).

EXTRACURRICULAR ACTIVITIES

2016-2019 · Treasurer *New College Middle Common Room*

2015-2016 · Administrative & IT secretary *Clarendon Scholars' Association*

COMPUTER SKILLS

Basic C++, R, FEniCS, AUTO-07P, Adobe Photoshop, Adobe InDesign

Intermediate Linux, Mathematica

Advanced Matlab, python, LaTeX

OTHER INFORMATION

Languages

Dutch · Mother-tongue

English · Fluent

German · Basic (simple words and phrases only)