

Fern Hughes

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Education

- 2019 – present **PhD in Mathematics** - *Imperial College London and MRC London Institute of Medical Sciences*
Thesis title Stochastic modelling of cell cycle control (final title TBC)
Supervisors Dr. Philipp Thomas and Dr. Alexis R. Barr
- 2018 – 2019 **MSc Mathematical Medicine and Biology** – *University of Nottingham*
Award Distinction
Dissertation title Probabilistic transitions in biological networks with application to the yeast cell cycle
Supervisor Prof. Etienne Farcot
- 2015 – 2018 **BSc (Hons) Mathematics** – *University of Nottingham*
Award First class

Teaching Experience

- 2020 – 2021 Senior Graduate Teaching Assistant - *Imperial College London*
Calculus I - demonstration, problems classes, marking, management of other GTAs
- 2019 – 2020 Graduate Teaching Assistant - *Imperial College London*
Calculus I - demonstration, problems classes, marking

Publications

- [1] **FAH**, Alexis R. Barr and Philipp Thomas. Patterns of interdivision time inheritance reveal hidden cell cycle drivers. *bioRxiv*, 2022.

Supervision

- 2022 Colette Sheard (*MSc Applied Mathematics student at Imperial College London*) - 'Age-structured models of cancer cell populations'
Joint supervision with Philipp Thomas and Alexis R. Barr
- 2022 Javier Goetz-Sanz (*MSc Applied Mathematics student at Imperial College London*) - 'Hidden Markov Models of trees with applications to time-lapse microscopy lineage tree data'
Joint supervision with Philipp Thomas and Alexis R. Barr

Talks & posters

- 29/09/2022 Natural Sciences Showcase - *Imperial College London*
Poster
- 20/09/2022 ECMTB 2022 - *Universität Heidelberg, Germany*
Poster (**ESMTB poster prize winner**)
- 13/07/2022 Stochastic Processes Workshop - *University College London, UK*
Short talk
- 11/07/2022 5th Anniversary PhD Symposium - *Francis Crick Institute, UK*
Short talk
- 28/06/2022 ICS/LMS Epigenetics Retreat 2022 - *Imperial College London, UK*
Flash talk and poster (**poster prize winner**)
- 16/06/2022 Mathematics PhD Symposium - *Imperial College London, UK*
Poster
- 04/04/2022 BSDB/BSCB Joint Spring Meeting - *University of Warwick, UK*
Poster
- 29/03/2022 Biological systems: from first principles to data-driven modelling and back - *Congressi Stefano Franscini, Switzerland*
Short talk and poster
- 07/03/2022 EMBL Symposium: Biological oscillators: design, mechanism, function - *EMBL Heidelberg, Germany*
Poster
- 30/11/2021 LMS Institute Retreat - *Royal Institution, UK*
Flash talk
- 06/09/2021 IOP Machine Learning in Biological Physics - *Online*
Virtual poster
- 23/06/2021 Salk Cell Cycle Meeting - *Online*
Virtual poster

Skills

Computing

Most experience MATLAB, Wolfram Mathematica, Julia

Some experience Python, Command line

Wet lab

Limited experience Cell tissue culture, CRISPR Cas-9, FACS, Immunofluorescence, Western Blot

Produced and validated a CRISPR Cas-9 induced knockout cell line, guided by Steven Cutty.

Professional Organisation Memberships

2021 - present British Society for Cell Biology

2021 - present American Physical Society

2020 - present Society for Mathematical Biology

2019 - present Society for Industrial and Applied Mathematics

Peer Review

Scientific Reports

Voluntary Positions

2022 - present **Mentor** for the Department of Mathematics 'PhD buddy' scheme - *Imperial College London*

2021 - present **Organiser** of quarterly interdisciplinary joint group meetings - *Imperial College London*
with Hannah Dewhurst

2017 - 2018 **President** of the Latin, Ballroom & Salsa Society - *University of Nottingham Students' Union*

2016 - 2017 **Latin & Ballroom Team Captain** of the Latin, Ballroom & Salsa Society - *University of Nottingham Students' Union*

Non-academic Employment

10/2018 - 08/2019 Finance Support Assistant - *University of Nottingham Students' Union*

07/2017 - 08/2019 Brand and Insight Ambassador - *University of Nottingham Students' Union*

06/2018 - 09/2018 Account Manager Support Intern - *Handelsbanken UK, Mansfield*

and 06/2017 - 08/2017

Hobbies

Latin & Ballroom dancing

Cooking

Plants