Nowell Phelps

nowellphelps.github.io | nowell.phelps@gmail.com | Citizenship: UK and USA

Education

Master of Mathematics University of Oxford 2017 – 2021

Part C *Distinction* (74 weighted average)

- Masters' dissertation "A coevolutionary voter model for opinion dynamics on hypergraphs" graded 81.
- Written coursework "Predictive computational models for epidemiology" and "Stochastic block models and their use in node classification".
- Courses taken: Networks, Probability and Statistics for Network Analysis, Computational Biology, Mathematical Physiology, Combinatorics, Probabilistic Combinatorics.

Part A and Part B *Second Class, Division One* (69 weighted average)

- Dissertation "The Thermohaline Circulation: Box Models and Stability" graded 72.
- Courses included Probability, Statistics, Multivariable Calculus, Differential Equations, Dynamics, Real Analysis, Complex Analysis, Linear Algebra, Group Theory, Rings and Modules, Topology, Graph Theory, Logic, Set Theory, Mathematical Models for Financial Derivatives, Mathematical Biology, Quantum Theory.

Research Experience

Research Assistant in Epidemiology and Population Health *Imperial College London* March 2022 - Present

- RA in NCD-RisC, WHO Collaborating Centre on NCD Surveillance, Epidemiology and Modelling, modelling trends in risk factors for non-communicable diseases using a Bayesian hierarchical model in R.
- Lead author on paper (near submission) on global trends in obesity and underweight and their combined prevalence.
- Improved methodology in generating initial values for MCMC.
- Carefully identify, check, explore, extract and integrate new data sources into our database, working closely with data providers to ensure consistency of data.
- Design products for internal and external dissemination of results with ggplot and plotly.

Summer Studentship *Big Data Institute, University of Oxford* July – September 2021

Investigated the spatial distribution of treatment in villages in Mayuge District, Uganda, and designed household-level metrics for spatial schistosomiasis risk using QGIS and R.

Master's Dissertation *Mathematical Institute, University of Oxford* October 2020 – July 2021

Investigated opinion polarisation and consensus outcomes within the context of higher-order group interactions through deriving stochastic master equations and running Monte Carlo simulations in Python.

Undergraduate Research Project *Mathematical Institute, University of Oxford* July – August 2020

Research project in social network theory, looking at methods to distinguish between dyadic and community level influence on household-level adoption of a microfinance scheme in rural India.

Part B Structured Project *Mathematical Institute, University of Oxford* October 2019 –March 2020

Proposed and investigated extensions to Stommel's Box Model for the thermohaline circulation, modelling responses to rising global temperature increases.

Publications

NCD Risk Factor Collaboration. "Diminishing benefits of urban living for children and adolescents' growth and development." *Nature* 615, no. 7954 (2023): 874.

Outreach

Site Manager *Opportunity Oxford, University of Oxford* September 2020 & September 2021

Managed two ambassadors to ensure the wellbeing of students during a two-week residential program for incoming first year students from underrepresented backgrounds. Returned in role.

Ambassador *UNIQ, University of Oxford* July – August 2020
Student ambassador on summer school for state-educated year 12 prospective Mathematics and Computer Science applicants, providing academic and admissions support and encouragement.

Junior Members' Scholarship Representative *Jesus College Oxford* January – December 2018
Responsible for Jesus College Oxford's JCR higher-education access scholarship, managing budget, providing practical support, and researching opportunities for future iterations.

Prizes and awards

College Prize *Jesus College Oxford* 2021
For Distinction in Final Honour School of Mathematics.

Summer studentship *Big Data Institute, University of Oxford* 2021
Awarded £3000 to fund summer studentship.

Open Exhibition *Jesus College Oxford* 2020
Awarded for first-class performance in third-year undergraduate studies.

College Prize *Jesus College Oxford* 2018
Academic prize for excellent performance in collections (internal college exams).

Skills

Highly proficient in: R, HPC systems, Latex, Microsoft Office
Experience with: Python, QGIS, MATLAB, Git, Adobe
Basic German (CEFR A2)