

## EDUCATION

### DALHOUSIE UNIVERSITY / EXETER UNIVERSITY

#### POSTDOCTORAL FELLOW 2016-2019

Genome Canada-funded Postdoctoral Fellowships working on evolution and antimicrobial resistance.

### UNIVERSITY COLLEGE LONDON

#### PHD BIOINFORMATICS

Dec 2015 | London, England

Thesis: A multi-omic analysis of the photosynthetic endosymbioses of *Paramecium bursaria*

Defended: March 2016

### OXFORD UNIVERSITY

#### BA (HONS) NATURAL SCIENCE (BIOLOGICAL SCIENCES)

May 2011 | Oxford, England

Dissertation: Evolution of the eukaryotic folate biosynthesis pathway

## COURSES

### TAUGHT

Infectious Disease Epidemiology

Health Data Science

Bioinformatics Algorithms

Computational Biology

Genomic Epidemiology

Python and Advanced Python

MicroResearch

Data Management

Machine Learning for Life Sciences

Genomics and Transcriptomics

Software Carpentry Bootcamp

Supervision of Doctoral, Masters and

Undergraduate Researchers

## SKILLS

### PROGRAMMING

Expert:

Python • Bash • Unix • Nextflow

Intermediate:

C++ • R • perl • SQL • HPC Systems

Familiarity:

Rust • Octave/Matlab • JS (inc. D3.js)

### MOLECULAR BIOLOGY

{transcript,gen,metabol}-omics •

phylogenetics • microscopy •

standard microbiology lab techniques

## EXPERIENCE

### DALHOUSIE UNIVERSITY | ASSISTANT PROFESSOR

January 2022 – Present | Halifax, Nova Scotia

- Joint appointment to Faculty of Computer Science and Faculty of Medicine (Community Health and Epidemiology)
- CIHR, NSERC, and SSHRC-funded research program in genomic epidemiology of infectious disease and collaborative health data science
- Pathogenomics Bioinformatics Lead at Toronto's Shared Hospital Laboratory
- Adjunct at Sunnybrook Research Institute
- Co-Chair/Steering Committee at Public Health Alliance 4 Genomic Epidemiology

### DALHOUSIE UNIVERSITY | DONALD HILL FELLOW

January 2019 - January 2022 | Halifax, Nova Scotia

- Independent fellowship with paired fellows in Medicine and Sociology all working on societal impacts of technology.
- Expanding previous public health work in genomic epidemiology and antimicrobial resistance.
- Engaging local non-profits and assisting them with exploratory data analysis methods.
- Lead project developing prediction tools for antimicrobial resistance from metagenomes with the Public Health Agency of Canada and Agriculture and Agri-Food Canada.

### NEUROGLYCERIN | COMPETITIVE MACHINE LEARNING TEAM

Aug 2014 – Present | Edinburgh, Scotland

- Top 5% finishes in two major international competitions.
- Submissions include deep convolutional neural networks, model combining strategies, classical methods, computer vision, feature engineering approaches all used extensively in various competitions.

### NASA | PLANETARY BIOLOGY FELLOW

July 2013 – Aug 2013 | Kennedy Space Center, Florida

- Acted as NASA representative and scientific adviser to BBC "Cloud Lab" Documentary.
- Researched bacterial adaptations to extreme near-space conditions.
- Designed and implemented trials for a stratospheric balloon flight.
- Work resulted in a publication and journal front cover image.

## GRANTS

2023	\$1,800,000	CIHR Project, CIHR Team
2022	\$317,500	NSERC Discovery, 2xSSHRC Insight Development
2021	\$1,170,000	CIHR Operating, CIHR Project, and NSERC CANMOD
2019	\$10,000	SSHRC Explore and Nvidia Data Science Accelerator
2018	\$165,000	Donald Hill Family Fellowship
2013	\$5,975	NASA Planetary Biology Fellowship
2011	\$120,000	UCL-NHM PhD Studentship
2010	\$3,225	SGM Harry Smith Vacation Studentship

## AWARDS

2022	Global	Royal Society Life Sciences New Talent Collection
2019	Global	Hacking AMR Award
2009	University	Dukinfield Exhibition in Biological Sciences

## PUBLICATIONS

44 publications including Nature Microbiology, PNAS, Nucleic Acids Research, Royal Society B, and Current Biology. See [goo.gl/04fiwt](https://doi.org/10.1093/nar/nwz111) for full citation list.