Sam Abbott

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Dynamic modeller and data scientist focussing on infectious disease dynamics, epidemiology, and control. I have a strong interest in reproducibility and tool development, having developed multiple widely used packages and dashboards. My work lies at the interface between dynamic modelling, statistical modelling and data science - incorporating elements from software development to enhance robustness and longevity.

Education

University of Bristol
Bristol

PhD in Epidemiology
October 2015–September 2019

- Modelling BCG vaccination policy in the UK: What is the effect of changing policy?
- Read here: samabbott.co.uk/thesis/

University of Glasgow
Glasgow

Research Placement
June 2015–September 2015

- Distinction
- The multi-species ecology of antimicrobial resistance in tanzanian human and livestock populations: Using Bayesian methods to infer genetic resistance patterns from phenotypic data.

University of York
York

Msc Advanced Mathematical Biology
2014–2015

- Distinction
- Group project: Modelling superspreading and seasonlity in Influenza, Distinction. An analysis of the resonant effects produced by the introduction of population heterogenity and seasonal variation to an SIRS model.

University of Durham
Durham

MMath Mathematics
2010–2014

- 2:1

Experience

Funding Circle
London

Data Scientist
November 2017–January 2019

- Predictive modelling, inference, data visualisation,dashboarding and tool development
- Remote and 1 day a week from November 2017 to September 2018
- Full time from October 2018 to January 2019

Skills

Training

Hinxton

Mathematical Modelling for Infectious Disease Dynamics
2016

- Two week residential course

Online

Data science career track
2017

- Covering the full range of data science skills from data reading cleaning through to predictive modelling and inference.

Bristol

Short courses
2016-2019

- Basic Epidemiology, Multilevel Modelling, Data Linkage, Analysis of repeated measures, Bayesian statistics with WINBUGS, Multiple Imputation Methods to deal with Missing Data, Methods for Mediation and Interaction Analysis, and Advanced Survival Analysis and Prognostic Modelling

Teaching

INFECTIOUS DISEASE MODELLING PRACTICALS *2018, 2019*

- Responsible for developing and teaching two 1 hour practicals on model development and dynamics as part of an introductory modelling course.

Publications

First author

S Abbott, H Christensen, MK Lalor, D Zenner, C Campbell, ME Ramsay, ...   *Vaccine*

Exploring the effects of BCG vaccination in patients diagnosed with tuberculosis: observational study using the Enhanced Tuberculosis Surveillance system   *2019*

S Abbott   *Journal of Open Source Software*

getTBinR: an R package for accessing and summarising the World Health Organisation Tuberculosis data   *2019*

Non-first author

J Stone, H Fraser, AG Lim, JG Walker, Z Ward, L MacGregor, A Trickey, ...   *The Lancet infectious diseases*

Incarceration history and risk of HIV and hepatitis C virus acquisition among people who inject drugs: a systematic review and meta-analysis   *2018*

Preprints

S Abbott, H Christensen, NJ Welton, E Brooks-Pollock   *BioRxiv*

Estimating the effect of the 2005 change in BCG policy in England: A retrospective cohort study   *2019*

S Abbott, H Christensen, E Brooks-Pollock   *BioRxiv*

Reassessing the Evidence for Universal School-age Bacillus Calmette Guerin (BCG) Vaccination in England and Wales   *2019*

This list is updated programmatically each week. See my Google Scholar for DOIs and citation details.

Selected Software

ℝ Packages

samabbott.co.uk/idmodelr

idmodelr: Infectious disease model library and utilities   *2019*

- Author and maintainer
- Released to CRAN with 1k+ downloads

samabbott.co.uk/EstZoonoticTB

EstZoonoticTB: an R package for exploring, visualising and estimating the global zoonotic tuberculosis burden   *2019*

- Author and maintainer

samabbott.co.uk/getTBinR

getTBinR: Access and summarise World Health Organisation tuberculosis data   *2018*

- Author and maintainer
- Released to CRAN with 11k+ downloads

samabbott.co.uk/prettypublisher

prettypublisher: an R package that aims to improve your workflow by allowing an easier transition from literate code to a paper draft ready for journal submission   *2017*

- Author and maintainer

Interactive tools

github.com/seabbs/exploreidmodels

Explore infectious disease models   *2019*

- Developed to be used within a modelling short course at the University of Bristol. This dashboard allows the user to simulate and compare a variety of compartmental infectious disease models.

Explore global tuberculosis

- Built into getTBinR this dashboard allows non-R users to explore WHO TB data using all of the package functionality.

Introduction to Tuberculosis models

- Developed to allow simple TB models to be explored in an interactive session. Inspired by practicals from the introduction to TB course, run by TB MAC at the 2017 Union conference.

The pebble game

- Developed as a learning aid to help a general audience understand the impact of vaccination on infectious disease dynamics. Used at Green Man 2016 as part of a week of outreach work and subsequently developed further.

See my GitHub for a complete overview of my software both released and in development.

Presentations

BristolR

(My) essential R resources

- Link: https://www.samabbott.co.uk/talk/myessentialr-bristolr_19_04_20/

UK Clinical Vaccine Network Conference

What do we really know about BCG?

- Link: https://www.samabbott.co.uk/talk/uk-vac-network-2019/

R/Medicine

getTBinR: an R package for accessing and summarising World Health Organization Tuberculosis data

- talk

Research and Applied Epidemiology Scientific Conference

Estimating the effect of the 2005 UK BCG vaccination policy change: A retrospective cohort study using the Enhanced Tuberculosis Surveillance system, 2000-2015

- Link: https://www.samabbott.co.uk/talk/phe-applied-epi-2018/

Research and Applied Epidemiology Scientific Conference

Beneficial effects of BCG vaccination in outcomes for patients with active TB: observational study using the Enhanced Tuberculosis surveillance system 2000-2014

- Received best PhD student abstract.
- Link: https://www.samabbott.co.uk/talk/phe-applied-epi-2017/

48th Union World Conference on Lung Health

Beneficial effects of BCG vaccination in outcomes for patients diagnosed with TB: observational study using the Enhanced Tuberculosis surveillance system 2009-2015

- Link: Link: https://www.samabbott.co.uk/talk/union-2017/

Research and Applied Epidemiology Scientific Conference

Assessing the Evidence for Universal Bacillus Calmette-Guèrin (BCG) Vaccination in England

- Received best abstract from an early career researcher.
- Link: https://www.samabbott.co.uk/talk/phe-applied_epi-2016/

Service

Outreach

- Blog - with over 5k unique hits each year - looking at infectious disease epidemiology and dynamics, developments in R, tool development and reproducible research. Link: samabbott.co.uk/post/

Organisations

- Co-organiser of BristolR.

Manuscript Reviews

- Journal of Open Source Software (2)