

# Alexander Eugene Zarebski

Department of Zoology  
University of Oxford England

Phone: 01865 281 061

Email: [aezarebski@gmail.com](mailto:aezarebski@gmail.com)

RESEARCH WEBSITE: <https://www.oxfordmartin.ox.ac.uk/people/890>

## Current position

*Postdoctoral researcher*, Department of Zoology, University of Oxford

*PhD student*, School of Mathematics and Statistics, The University of Melbourne

## Areas of specialization

Mathematical and statistical modelling; Bayesian statistics; Computational statistics; Mathematical epidemiology.

## Statement

I am an applied mathematician in the University of Oxford's Department of Zoology working on the Oxford Martin Programme on Pandemic Genomics. Previously, I studied mathematics and statistics at the University of Melbourne and consulted for the educational technology start-up: Vericus. My research focuses on the use of multiple data sources and decision support, in particular, but not exclusively, using techniques from Bayesian and computational statistics.

## Appointments held

2018	Research assistant, School of BioSciences, The University of Melbourne
2016–2018	Data scientist, Vericus Pty Ltd.
2013–2016	Tutor, School of Mathematics and Statistics, The University of Melbourne

## Education

2014	MSc (with distinction) in Mathematics and Statistics, The University of Melbourne
2012	BSc in Mathematics and Statistics, The University of Melbourne

### Fellowships, honours & awards

- 2015 Wyselaskie Prize, School of Mathematics and Statistics, The University of Melbourne
- 2012 Dean's Honour List in Bachelor of Science
- 2011 Dixson Scholarship in Applied Mathematics
- 2011 Dean's Honour List in Bachelor of Science
- 2010 Dean's Honour List in Bachelor of Science

### Grants & funding

#### DEFENCE SCIENCE TECHNOLOGY GROUP, COMMONWEALTH OF AUSTRALIA

(formerly the Defence Science Technology Organisation)

- 2015 *PhD student scholarship for influenza outbreak detection and forecasting*, McCaw JM, **Zarebski A**, 2015–17 (\$30,000)

#### THE ALAN TURNING INSTITUTE

- 2018 *Travel bursary* **Zarebski A**, 2018 (£300)

#### COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANISATION

- 2017 *CSIRO-ANZIAM Student Support Scheme*, **Zarebski A**, 2017 (\$420)
- 2016 *CSIRO-ANZIAM Student Support Scheme*, **Zarebski A**, 2016 (\$500)

#### CENTRE OF RESEARCH EXCELLENCE IN INFECTIOUS DISEASES MODELLING TO INFORM PUBLIC HEALTH POLICY

- 2017 *Postdoctoral researcher and PhD student funding scheme*, **Zarebski A**, 2017 (\$3,132)
- 2016 *Postdoctoral researcher and PhD student funding scheme*, **Zarebski A**, 2016 (\$1,416)

#### SCHOOL OF MATHEMATICS AND STATISTICS, THE UNIVERSITY OF MELBOURNE

- 2017 *Travel grant*, **Zarebski A**, 2017 (\$600)

### Publications

#### JOURNAL ARTICLES

- 2019

**Zarebski AE**, Moss R, McCaw JM, *A sub-exponential branching process to study early epidemic dynamics with application to Ebola*, bioRxiv

- 2019 Ford HZ, Zeboudj L, Purvis GSD, ten Bokum A, **Zarebski AE**, Bull JA, Byrne HM, Myerscough MR, Greaves DR, *Efferocytosis perpetuates substance accumulation inside macrophage populations*, Proceedings of the Royal Society B: Biological Sciences
- 2019 Moss R, **Zarebski AE**, Dawson P, Franklin LJ, Birrell FA, McCaw JM, *Anatomy of a seasonal influenza epidemic forecast*, Communicable Diseases Intelligence
- 2019 Moss R, **Zarebski AE**, Carlson SJ, McCaw JM, *Accounting for healthcare-seeking behaviours and testing practices in real-time influenza forecasts*, Tropical Medicine and Infectious Disease
- 2018 Farrukee R, **Zarebski AE**, McCaw JM, Bloom JD, Reading PC, Hurt AC, *Characterization of influenza B virus variants with reduced neuraminidase inhibitor susceptibility*, Antimicrobial Agents and Chemotherapy
- 2017 **Zarebski AE**, Dawson P, McCaw JM, Moss R, *Model selection for seasonal influenza forecasting*, Infectious Disease Modelling
- 2017 Moss R, **Zarebski A**, Dawson P, McCaw JM, *Retrospective forecasting of the 2010–2014 Melbourne influenza seasons using multiple surveillance systems*, Epidemiology and Infection
- 2016 Moss RG, **Zarebski A**, Dawson P, McCaw JM, *Forecasting influenza outbreak dynamics in Melbourne from internet search query surveillance data*, Influenza and Other Respiratory Viruses

#### Presentations

##### INVITED PRESENTATIONS

- 2019 **Zarebski AE\***, McCaw JM, *Using prior knowledge to improve inference and forecasting of infectious disease transmission*, Workshop: Influencing Public Health Policy with Data-Informed Mathematical Models of Infectious Diseases, Creswick, Australia
- 2017 **Zarebski AE\***, Moss R, *Workshop on using STAN for parameter estimation*, Workshop: PRISM-MAEMOD Workshop in Infectious Disease Modelling, Research and Training, Bangkok, Thailand (25–29 September 2017)

##### REFEREED CONFERENCE PRESENTATIONS

- 2019

- Moss R\*, **Zarebski AE**, Carlson SJ, McCaw JM *Real-time assessment and prediction of influenza severity*, Spoken presentation: ANZIAM Annual Conference, Nelson, New Zealand
- 2018 Hull R\*, **Zarebski A**, Russo R, Martin J, Day R, *Improving essay writing in large classes*, The Australian Conference on Science and Mathematics Education, Adelaide, Australia (26–27 December, 2018)
- 2017 Moss R\*, **Zarebski AE**, McCaw JM *Bayesian forecasting of seasonal influenza: putting prior knowledge into the prior*, Spoken presentation: ANZIAM Annual Conference, Hahndorf, Australia
- 2017 Trezisek K\*, De Barba P, Jennens D, **Zarebski A**, Russo R, Kennedy G, *A learning analytics view of students’ use of self-regulation strategies for essay writing*, Conference paper: ASCILITE, Toowoomba, Australia (4–6 December, 2017)
- 2017 **Zarebski A\***, Moss R, Dawson P, McCaw JM, *Modelling outbreaks with a sub-exponential branching process*, Spoken presentation: Epidemics 6, Sitges, Spain (29 November – 1 December, 2017)
- 2017 **Zarebski A\***, Mitchell L, Cope RC, Moss R, *Detecting abnormal disease activity in spatially-indexed case data*, Spoken presentation: SRA-ANZ Annual Conference, Melbourne, Australia (20–23 November, 2017)
- 2017 **Zarebski A\***, Moss R, McCaw JM, *Epidemic forecasting and parameter estimation*, Spoken presentation: PRISM-MAEMOD Workshop in Infectious Disease Modelling, Research and Training, Bangkok, Thailand (25–29 September 2017)
- 2017 **Zarebski A\***, Dawson P, Moss R, McCaw JM, *Branching out from exponential models: an inhomogeneous model for early epidemic dynamics*, Spoken presentation: ANZIAM Annual Conference, Adelaide, Australia (5–9 February, 2017)
- 2017 Moss R\*, **Zarebski A**, Dawson P, McCaw JM, *Bayesian forecasting of seasonal influenza: putting prior knowledge into the prior*, Spoken presentation: ANZIAM Annual Conference, Adelaide, Australia (5–9 February, 2017)
- 2016 **Zarebski A**, McCaw JM, Moss R, Dawson P, *Forecasting seasonal influenza in Melbourne*, Poster presentation: ISIRV Options IX for the control of influenza, Chicago, USA, (24–28 August, 2016)
- 2016 **Zarebski A\***, Moss R, McCaw JM, *Influenza forecasting with a seasonally informed model*, Spoken presentation: ANZIAM Annual Conference, Canberra, Australia (7–11 February, 2016)
- 2015

Moss RG, **Zarebski A**, Dawson P, McCaw JM, *Forecasting influenza outbreak dynamics from metropolitan Melbourne surveillance data*, Poster presentation: Epidemics 5, Florida, USA (1–4 December, 2015)

\* = presenting author

#### Professional service

#### MANUSCRIPT REVIEWER

- Biology Letters
- PLoS Computational Biology

Last updated: November 1, 2019