

Isobel Rose Abell

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Research Interests

My research focuses on modelling the spread of diseases and invasive species to support decision-making.

Education

University of Melbourne

2022 to present

Expected completion 2025

PhD

Modelling early outbreak detection to support decision-making

Supervisors: Dr Christopher Baker, Dr Thao Le, Prof Jennifer Flegg

2020 to 2022

Master of Science

Developing models to optimise vaccine allocation strategies

Supervisors: Dr Christopher Baker, Prof James McCaw

Major: Mathematical Biology, Minor: Pure Mathematics

2017 – 2019

Bachelor of Science and Diploma in Music

Major: Mathematics and Statistics, Mathematical Physics specialisation

Publications

2023

Understanding the impact of disease and vaccine mechanisms on the importance of optimal vaccine allocation

[Isobel Abell](#), James McCaw, Christopher Baker

Published in Infectious Disease Modelling, available [here](#)

Rapid prototyping of models for COVID-19 outbreak detection in workplaces

[Isobel Abell](#), Cameron Zachreson, Eamon Conway, Nicholas Geard, Jodie McVernon, Thomas Waring, Christopher Baker

Published in BMC Infectious Diseases, available [here](#)

2024

Cost-effective boosting allocations in the post-Omicron era of COVID-19 management

Thao Le, Eamon Conway, Edifofo Akpan, [Isobel Abell](#), ..., Natalie Carvalho, Jodie McVernon

Preprint, available [here](#)

Modelling the impact of hybrid immunity on future COVID-19 epidemic waves

Thao Le, [Isobel Abell](#), ..., Christopher Baker

Published in BMC Infectious Diseases, available [here](#)

Is testing the bee-all and end-all of varroa eradication?

[Isobel Abell](#), Jennifer Flegg, Thao Le, Christopher Baker

Preprint, available [here](#)

How a simulation is informing COVID-19 vaccine policy after our ‘return to normal’

Thao Le, [Isobel Abell](#), Christopher Baker

Published in Pursuit, available [here](#)

Research and teaching experience	
University of Melbourne Melbourne Centre for Data Science <i>November 2021 to present</i>	Research assistant with Dr Christopher Baker and Dr TK Le Projects have included: <ul style="list-style-type: none"> • Estimating feral cat populations on French Island as part of the Feral Cat Free French Island initiative • Modelling to inform WHO vaccination recommendations worldwide • Economic evaluation of the impact of myrtle rust on carbon sequestration in Australia
University of Melbourne Academic Tutor <i>2023 – 2024</i>	Mathematics for Biomedicine, Calculus 1
Scholarships and Awards	
<i>2022 – 2025</i> <i>2020, 2021, 2022</i> <i>2018</i>	Scholarships Australian Government Research Training Program Scholarship Mathematics and Statistics School Scholarship (The University of Melbourne) New Colombo Plan Travel Scholarship – Japan
<i>2024</i> <i>2023</i> <i>2021</i> <i>2017</i>	Awards Honorary mention for Best Presentation (MBSIG Standalone Workshop) Honorary mention for Best Poser Presentation (SPECTRUM & SPARK General Meeting) Jointly awarded Best Student Speaker (SPECTRUM & SPARK General Meeting) Academic Honours, Trinity College
Presentations	
<i>February 2025</i>	Incorporating human behaviour when (moo)delling animal disease outbreaks ANZIAM
<i>October 2024</i>	Special session organiser: Modelling for decision-makers WIMSIG conference
<i>July 2024</i>	Cost-effective boosting allocations in the post-Omicron era of COVID-19 management ECMTB (poster)
<i>June 2024</i>	Is testing the bee-all and end-all of <i>varroa</i> eradication SMB (poster)
<i>May 2023</i>	Choosing complexity is not so simple ICBI
<i>February 2023</i>	Rapid prototyping of models for COVID-19 outbreak detection in workplaces SPECTRUM & SPARK General Meeting
<i>February 2023</i>	Why'd you have to go and make things so complicated? Model complexity for infectious disease decision making ANZIAM conference
<i>August 2022</i>	The crazy places data science can take you The University of Melbourne Science Festival Joint presentation with Christopher Baker (recording available here)

<p><i>February 2022</i></p> <p><i>July 2022</i></p> <p><i>May 2021</i></p> <p><i>October 2021</i></p> <p><i>December 2021</i></p>	<p>Understanding the impact of disease and vaccine mechanisms on the importance of optimal vaccine allocation</p> <p>ANZIAM conference</p> <p>CDIC conference</p> <p>Developing Models to Optimise Vaccine Allocation Strategies</p> <p>Graduate Poster Session, the University of Melbourne</p> <p>MSc Presentation, the University of Melbourne</p> <p>SPECTRUM & SPARK General Meeting</p>
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