

# Noah Day

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## EDUCATION

<b>University of Adelaide</b> <i>Doctor of Philosophy</i>	7 June 2021–Present
<b>University of Adelaide</b> <i>Honours Degree of Bachelor of Mathematical Sciences with First Class Honours</i>	Feb 2017–Dec 2020 HGA: 6.8/7

## PROJECTS

<b>Evolution of the winter Antarctic marginal ice zone</b>   <i>PhD Thesis</i>	June 2021–June 2024
<ul style="list-style-type: none"> <li>Standalone state-of-the-art numerical sea ice model (CICE6) with atmospheric, oceanic, and surface wave forcing outputs are analysed to uncover the complex effects cyclones and swell have on the evolution of the Antarctic marginal ice zone.</li> </ul>	
<b>Influence of ice edge wave-amplitude drops on the Antarctic MIZ</b>   <i>In preparation</i>	Jan 2023–Feb 2024
<ul style="list-style-type: none"> <li>Wave-amplitude drops are proposed to explain the transition of ocean wave behaviour from open-open to consolidated sea ice covers. A parameterisation was implemented into CICE6 and revealed strong changes in the width of the Antarctic marginal ice zone from the presence of polar storms and cyclones.</li> </ul>	
<b>Unsupervised classification of the Antarctic marginal ice zone</b>   <i>In review</i>	Aug 2022–Dec 2023
<ul style="list-style-type: none"> <li>A novel application of a widely used statistical model determined the important ice characteristics of the Antarctic marginal ice zone. Sea ice data was simulated using the CICE6 numerical sea ice model with a floe size distribution. Predicted marginal ice zone widths are similar to satellite observations of wave penetration distances. Sea ice melt rates and drift speeds shown to be greater in the marginal ice zone than the interior ice pack. Preprint DOI: 10.22541/au.170147000.07796915/v1.</li> </ul>	
<b>Stochastic Modelling of Vector-Borne Diseases</b>   <i>Honours Thesis</i>	Feb 2020–Dec 2020
<ul style="list-style-type: none"> <li>Computationally efficient stochastic modelling of vector-borne diseases with household structures using branching process approximations of SEIR continuous-time markov chain models.</li> </ul>	

## ACHIEVEMENTS AND SKILLS

### Achievements:

- Student oral presentation prize | *IGS International Symposium on Sea Ice 2023*
- PhD top-up scholarship | Funded by the Consortium for Ocean-Sea Ice Modelling in Australia (2021–2024)
- Travel grants:
  - \* DR Stranks Travelling Fellowship (\$3,640 AUD)
  - \* University of Adelaide Graduate Research School Travel Grant (\$2,500 AUD)
  - \* Quarterly Journal of Mechanics and Applied Mathematics (£1,300 GBP)

**Languages:** Python, MATLAB, Fortran, R, Julia,  $\text{\LaTeX}$

## EMPLOYMENT

<b>Teaching assistant</b>   <i>University of Adelaide</i>	Aug 2021–Present
Practicals, workshops, tutorials, marking and exam invigilation for undergraduate and postgraduate mathematics courses.	
<ul style="list-style-type: none"> <li>STATS 7022—Data Science Post Graduate (S1 2024)</li> <li>MATHS 7027—Mathematical foundations of Data Science (S1 2024 &amp; S2 2023)</li> <li>STATS 1000—Statistical practice I (S1 2024)</li> <li>STATS 1000—Mathematics for Data Science I (S1 2023, S2 2022, &amp; S2 2021)</li> <li>MATHS 1009—Introduction to Financial Mathematics (S1 2023)</li> <li>MATHS 1010—Applications of Quantitative Methods in Finance I (S2 2022)</li> </ul>	

**Associate Professor Luke Bennetts** | *PhD Principal Supervisor*

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**Dr Siobhan O'Farrell**

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**Dr Andrew Black**

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