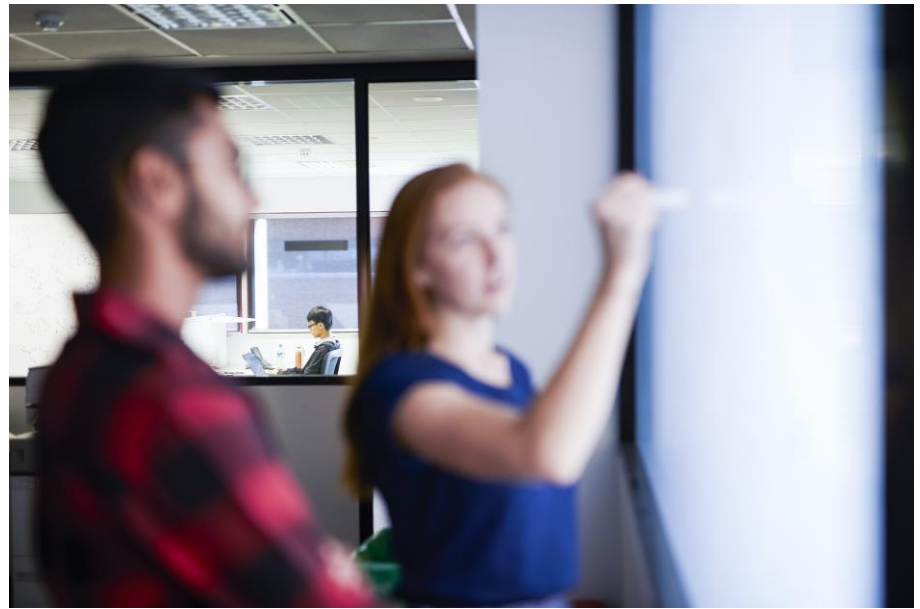




THE UNIVERSITY  
of ADELAIDE



Faculty of Engineering, Computer and Mathematical Sciences

# PREDICTING ICE-SHELF DISINTEGRATION USING MATHEMATICAL MODELS

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Up for a challenge? Join us to work on a research project with the School of Mathematical Sciences

## At a Glance

### Who can apply?

- Australian Citizens
- Onshore International students
- International applicants

### Funding body

- ARC grant funding

### Program of Study available

- Doctor of Philosophy (PhD)

### Total annual stipend amount

- \$28,092 for 3.5 years

### Start date

- As soon as possible

## About the project

The PhD project is an opportunity to develop mathematical and numerical models of Antarctic ice-shelf vibrations and resulting growth of cracks/rifts, and use the models to predict ice-shelf breakup and disintegration. The research is motivated by compelling evidence that ice-shelf vibrations forced by ocean waves lead to icequakes, major calving events, and trigger

catastrophic disintegration. Damage and loss of ice shelves have the alarming potential to cause rapid sea level rise, far above current estimates.

The project involves collaborations in Australia (including the Australian Antarctic Division and Bureau of Meteorology) and overseas (including Colorado, Harvard and Princeton). Opportunities are available for domestic and international travel, to participate in conferences and for research visits.

## References

Chen et al, 2019, Geophysical Research Letters, [doi.org/10.1029/2019gl084123](https://doi.org/10.1029/2019gl084123)

Kalyanaraman et al, 2020, Journal of Fluids and Structures,

[doi.org/10.1016/j.jfluidstructs.2020.103074](https://doi.org/10.1016/j.jfluidstructs.2020.103074)

Lipovsky, 2018, Journal of Geophysical Research, [doi.org/10.1029/2017JC013664](https://doi.org/10.1029/2017JC013664)

Massom et al, 2018, Nature, [doi.org/10.1038/s41586-018-0212-1](https://doi.org/10.1038/s41586-018-0212-1)

## Eligibility criteria

- The project is appropriate for those interested in dynamics, modelling and computation, and application to Antarctic science.
- Programming skills in MatLab or equivalent are desirable.

## Benefits

- Access to authorised travel and research project funds available
- Work alongside world leading researchers
- Our CaRST program: Free professional development to enhance your employability skills
- Collaborate with experts in the field.
- No Tuition fees! These are waived for eligible candidates
- Access state of the art technology
- Become a field expert and make a real and contribute to solving global challenges
- Publish your contributions and impact our communities and society

## How to apply

- Complete an [expression of interest](#) and email together with a copy of your CV and transcripts to A/Prof Luke Bennetts [luke.bennetts@adelaide.edu.au](mailto:luke.bennetts@adelaide.edu.au)
- Once your initial eligibility assessment is approved, formally lodge an application for admission and scholarship via the Adelaide Graduate Centre 'How to Apply' [link](#). **Application dates are listed**

on the website.

## Researcher Profiles

- Use our [Researcher Profiles](#) to find out more about potential supervisors

## More about ECMS

The Faculty of Engineering, Computer and Mathematical Sciences is home to world-class research institutes and centres, and internationally renowned academics at the cutting edge of research and discovery.

We are a thriving centre of learning, teaching and research in a vast range of engineering disciplines, computer science, machine learning and high-level mathematics as well as designing Human-centred, sustainable futures in our School of Architecture and Built Environments.

Many of our academic staff are leaders in their fields and graduates are highly regarded by employers.

Learn more about the Faculty of Engineering, Computer and Mathematical Science's Research capabilities at: <https://ecms.adelaide.edu.au/research-impact>

**The University of Adelaide is an Equal Employment Opportunity employer. Women and Aboriginal and Torres Strait Islander people who meet the position requirements are strongly encouraged to apply.**

School of Mathematical Sciences

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## FURTHER INFORMATION

### For a confidential discussion contact:

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