# PhD Scholarship in
# Social Networks for Disaster Preparedness and Climate Resilience

We are recruiting a PhD student to lead the quantitative component of a recently funded ARC Discovery Project examining how personal networks shape how people prepare for and respond to environmental hazards.

## About the Opportunity

As climate change intensifies the frequency and complexity of disasters, communities are increasingly exposed to compound risks such as sequential floods, storms, or heatwaves interacting with ecological and social systems. While infrastructure and early-warning systems are critical, people's personal networks — the informal and formal relationships that connect individuals and communities — are among the most powerful, yet least understood, resources for building resilience.

This project aims to understand how personal social networks and human–environment relationships influence how people prepare for and respond to compound environmental hazards. The successful PhD candidate will focus on advanced social network modelling to examine how network structures influence disaster preparedness and climate resilience, and how these relational structures shape feedbacks between social systems, environmental risk, and adaptive responses. The project will also provide opportunities to contribute to methodological advances in statistical network modelling, particularly in relation to analysing large-scale personal network data in complex social–ecological systems.

The project forms part of a broader interdisciplinary collaboration between the Social Dynamics and Environmental Change Lab (Associate Professor Michele Barnes, University of Sydney), the Networks, Society and Nature Lab (Dr. Angela Guerrero, Queensland University of Technology), and leading network methodologist Dr. Pavel Krivitsky (University of New South Wales). Together, the team is conducting the first national-scale analysis of personal network structures and mechanisms that enhance disaster preparedness and response across Australia, with the goal of informing strategies that strengthen community resilience to environmental change.

The PhD candidate will be supervised by Associate Professor Michele Barnes in the School of Project Management at the University of Sydney, with co-supervision by Dr. Angela Guerrero (Queensland University of Technology) and Dr. Pavel Krivitsky (University of New South Wales).

## The PhD candidate will contribute to the following core components of the project:

• Contribute to a national-scale survey on personal networks and disaster preparedness and response

• Conduct in-person surveys in selected hard-to-reach communities across Australia

• Apply advanced statistical network modelling techniques (e.g. Exponential Random Graph Models) to examine how specific network configurations support hazard preparedness, response, and resilience

• Collaborate with a multidisciplinary team to develop integrative methods combining quantitative and qualitative network data to better understand how social networks shape resilience across diverse social–ecological contexts

**The PhD project will provide scope to further develop research in areas such as:**

• Examining how key dimensions of adaptive capacity — such as power, agency, risk perceptions, and access to environmental knowledge — are embedded in and mediated by personal networks, and how these dynamics generate feedbacks between social systems and environmental risk

• Conducting subgroup analyses to explore how social and cultural diversity shape network structures and people's relationships with the environment, and how these relationships in turn influence hazard response outcomes and long-term resilience

## Eligibility

### Required Qualifications

Applicants must meet the [requirements to enrol as a full-time, internal PhD student at the University of Sydney](), which includes meeting one of the following academic entry pathways:

- A Bachelor degree with First Class Honours in a relevant field (e.g. disaster or climate resilience, sustainability science, environmental science, geography, sociology, computational social science, statistics, project studies, or a related discipline) which included a substantial independent research component; **or**
- A Master's degree by research in a relevant field performed at a high academic standard; **or**
- A Master's degree by coursework that includes a substantial independent research component (e.g., thesis, dissertation, or research project) with a minimum overall Distinction average (or equivalent).

**In addition, applicants must meet the following selection criteria:**

1. A strong academic background in disaster and/or climate resilience, sustainability science, environmental science, geography, sociology, computational social science, statistics, project studies, or a closely related field.
2. Demonstrated expertise in quantitative research methods.
3. Proficiency in statistical software (e.g. R, Python, Stata) and familiarity with reproducible research workflows.
4. Ability to engage rigorously with relevant theoretical frameworks and to situate empirical research within appropriate conceptual debates.
5. Excellent written and oral communication skills.
6. Ability to work both independently and collaboratively within interdisciplinary teams.

**Highly Desirable Qualifications**

1. Experience working with network concepts, network data, and/or network analytical methods.
2. Experience working with statistical network analysis software.
3. Experience designing and implementing survey-based research.
4. Experience working at the interface of social science and ecology or environmental science.

## Benefits

The successful candidate will be embedded within the [Social Dynamics and Environmental Change Lab](#) and engage with collaborators across the University of Sydney's environmental and sustainability research community.

A full scholarship is available with a stipend valued at $42,754 per year (2026 rate) for up to 3.5 years in addition to full tuition valued at $58,400 per year (indicative only for international students). The scholarship includes the possibility of a six-month extension if approved.

In addition to the living stipend, the candidate will receive extensive support for research training and professional development. The School of Project Management provides a new laptop at the start of the candidature and offers financial support of AUD $10,500 for fieldwork, conference attendance, and other research-related expenses over the entire candidature.

## How to Apply

Interested candidates are invited to submit the following documents via email to A/Prof Michele Barnes at [michele.barnes@sydney.edu.au](mailto:michele.barnes@sydney.edu.au) with subject line "USYD PhD – Social networks for disaster preparedness and climate resilience" by the application deadline of **26 Mar 2026**:

- A concise cover letter (1 page) <u>explaining how you meet the selection criteria</u>, highlighting any desirable qualifications, and describing how your experience or research interests align with the project topic.
- A comprehensive CV highlighting relevant academic achievements, research experiences, and skills relevant to the selection criteria and desirable qualifications.
- Copies of academic transcripts demonstrating academic performance and relevant coursework.
- Contact information for three professional references.

Domestic and international applicants are encouraged to apply.

Shortlisted candidates will be notified of interviews shortly after the application deadline. Applications received after the deadline will be considered on a rolling basis until the position is filled.