UTS Institute for Sustainable Futures

PhD scholarship (domestic) at Institute for Sustainable Futures

Groundwater for Climate-Resilient and Inclusive WASH

Summary

An exciting opportunity for a domestic PhD scholarship is available at UTS, investigating how groundwater can be managed and developed to support inclusive climate-resilient water, sanitation and hygiene (WASH) services.

The successful candidate will be based at the University of Technology Sydney's Institute for Sustainable Futures (UTS-ISF) and will have the opportunity to collaborate with an international team of experts in Australia and Asia-Pacific countries. This project represents an excellent opportunity to develop international networks and to conduct research to help address global WASH and climate change challenges.

The PhD project is linked to a funded research project (2023-2024) that investigates how groundwater can support inclusive, climate resilent WASH in Vanuatu, Indonesia and Vietnam. The PhD reseach will link with and contribute to the wider research in 2023-2024, and build on the research following completion of the funded study.

This position is available to domestic students. The successful candidate will **not** have to pay course fees and will receive a living stipend of $30,000 pa for maximum 3.5 years full-time study, plus some funds to support field work. The deadline for applications is 7th November 2022. The PhD supervision team will depend on the specific research interests of the successful candidate, but possible supervisors include Dr Tim Foster, Professor Juliet Willetts, Dr Naomi Carrard and Dr Jeremy Kohlitz.

You are considered a domestic student if you are an:

- Australian citizen
- New Zealand citizen
- Holder of an Australian permanent resident visa

Who we are looking for

We are seeking a PhD student with an interest in how groundwater management and development can progress climate resilient inclusive WASH service delivery in Asia and Pacific countries. The successful candidate will be comfortable using quantitative and qualitative methods and working with cross-cultural teams in low- and middle-income country contexts. You will have an interest in working across disciplines and contributing as part of a wider research team towards development of rigorous evidence and its practical application. Ideally you will have experience or interest in one or more of the following topics: water supply in rural and/or urban areas, water resources management, hydrogeology, water policy, statistical methods, gender and social inclusion, and climate resilience.

Essential skills and aptitudes

- A masters or strong undergraduate degree in a relevant discipline, or equivalent.
- Demonstrated ability to undertake research at higher degree level i.e. demonstrated research experience or honours/masters degree with meaningful research component.
- Demonstrated high level critical thinking skills.
- Experience in working with/across different disciplines.
- Experience working in cross-cultural teams in low- and middle-income country contexts.
- Experience in and/or knowledge of relevant areas including WASH, groundwater, and climate resilience
- A strong interest in advancing progressive realization of the human right to water, climate resilience and sustainabilty.

About ISF and the HDR Program

The Institute for Sustainable Futures is a leading transdisciplinary research centre with a mission of creating change towards sustainable futures. Established more than twenty years ago, ISF works with government, industry and community organisations to create a world that is socially, ecologically and economically just and safe. ISF brings together expertise from a diverse range of disciplines to deliver practical solutions for our partners, and to empower our students to effect positive change in the years to come.

Our renowned graduate research program supports students working at the leading edge of complex societal problems and sustainability challenges. The program includes retreats, peer support groups, workshops and professional development seminars to help create a supportive community of scholars. We nurture and develop the brightest, most curious minds, giving them the skills to navigate complex real-world challenges. Our vibrant community of scholars brings fresh insight, inspiring new ways of seeing – and solving – wicked problems. For more details about undertaking a PhD at ISF and student eligibility read about our graduate research program.

About the Project

'Groundwater for Climate-Resilient and Inclusive WASH' is a two-year (2023-2024) research program focused on how groundwater can support climate-resilient WASH across the Asia-Pacific. The project is led by the University of Technology Sydney in partnership with University of Indonesia, Can Tho University (Vietnam) and the University of the South Pacific (Vanuatu).

The research addresses groundwater-WASH challenges in the face of climate change in three contexts: islands, deltas, and cities.

- In Vanuatu, the research examines how groundwater can underpin equitable, resilient water services in rural island communities
- In Indonesia, the research focuses on reducing groundwater quality risks in densely populated urban areas, particularly linked to climate and sanitation

- In Vietnam, the research explores how climate variability and saline intrusion affect groundwater and household water security in the Mekong Delta. The work adopts a mixed-methods approach

The research is transdisciplinary, taking a partnership-based, mixed-methods approach to ensure rigour and maximise research impact.

The PhD student will have flexibility to develop their own research questions and focus, while remaining within the broad scope of the overall research project. In any of the study sites, the PhD research might seek to understand one or more aspects of groundwater development and management, including water quality and availability; climate resilence; collective action challenges; equity and inclusion; and finance and economics. We invite applicants to nominate potential areas of interest in their application.

Location

Sydney with the potential for travel as part of data collection pending research design.

Commencement date

The scholarship will commence in early 2023 once the student has enrolled in a PhD program through the University of Technology Sydney.

How to apply

The application process has two stages. For stage 1, please send a copy of your CV (including details of educational attainment, employment history, publication activities, and citizenship) together with a cover letter and a sample of your writing (as per guidelines below) to Suzanne.Cronan@uts.edu.au by 7th November 2022.

Shortlisted applicants will be interviewed 16-18th November 2022. The preferred candidate will then work with the supervisory panel to prepare a research proposal for submission to ISF Learning Development Leadership Committee by 12th December 2022.

Initial closing date: 7th November 2022

Open to: domestic students

If you require further information on the position please contact Tim Foster Tim.Foster@uts.edu.au.

Stage 1 – Cover letter, CV and sample of writing

The cover letter should explain your experience and activities in three areas:

1. **Professional experience:** The strength of the professional experience will be assessed relative to the candidate's opportunities, including stage of career. The term 'professional experience' should be interpreted broadly, for example it may include both paid employment and volunteer roles.
2. **Research output:** Research outputs will be assessed on their quality and impact relative to the candidate's opportunity. Research outputs include publications (e.g. research reports, contributions to industry publications, conference papers, academic journal papers, etc), and presentations (e.g. seminars, conferences, digital media, etc). Applicants should include documentation of their research outputs in their CV.
3. **Academic merit:** Academic merit will be assessed on:
    I. The extent of successfully completed studies (e.g., Bachelor's degree, Honours degree, Masters undertaken largely by coursework, Masters undertaken largely by research, etc.
    II. The demonstrated and verified level of attainment in those studies.

The sample of writing should be a research output, such as a report, university assignment, section of thesis, conference paper, or journal article.

Stage 2 - Shortlisted applicants: Research proposal and interview

After an initial assessment by the recruitment panel, a number of applicants will be shortlisted and invited to put forward a research proposal. ISF staff will provide further information and assistance to applicants progressing to the second step.

For reference, the template for an ISF research proposal is provided in the Appendix. The quality of the research proposal will be assessed using our critical thinking scale (also in the Appendix) and the University of Adelaide's Research Skills Development Framework. Generally, successful ISF applicants will be expected to demonstrate 'good' to 'excellent' critical thinking skills, and the Level 4 or 5 research skills.

Summary timetable for application process

Stage 1 applications close (CV, cover letter, sample of writing)	7th November 2022
Notification of shortlisted applicants for Stage 2 process	11th November 2022
Interviews with shortlisted applicants	16-18th November 2022
Preferred applicant research proposal due	12th December 2022
Selection of candidates	15th December 2022

The successful applicant will need to complete a UTS postgraduate application form in addition to this scholarship application process to confirm their candidature.

Relevant web links: ISF gradutate research program and UTS postgraduate applications

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Appendix – Stage 2 requirement only

Research Proposal: ISF Guidelines

ISF requires prospective students to prepare a Research Proposal. The purpose of this document is to provide guidance about what ISF expects to see in a Research Proposal.

Aim for about 5 pages. You will need to work hard to be pithy and concise, at the same time as demonstrating excellence in your critical thinking and communication skills, consistent with entry level requirements for research higher degree students.

Introduction and Significance (½ page):

- State your research problem first. (i.e. not the general issue, but your piece of the pie)
- Make a case for the significance and importance of your intended research. Why does it matter? To whom? What use will it be?

Background (1-2 pages):

- Explain the background to the research problem through a review of relevant literature that demonstrates a sound knowledge of past and recent work in your domain of interest. Be sure to include peer reviewed literature in your reading and analysis, as well as popular and/or industry material if that is relevant.
- Summarise and critique the main findings reported by others

Proposed Research Questions and Contribution (½-1 page):

- Link your findings from the literature review with your own ideas. That is, specifically, what will you ask and answer? Are there any hypotheses to be tested?
- What are the expected outcomes? What do you see as your contribution to the topic under study? What use will it be? To whom? In what ways?

Preliminary Research Design (1 page):

- Theoretical Framework: What are your preliminary ideas about theoretical frameworks that might guide your study?
- Methodology: What methodology fits well with your question and your theoretical framework e.g., Do you plan to set up a mainly quantitative or qualitative study or something in between? Are you thinking of using case studies, surveys, models or some other method?
- Data: What type of data will help you answer the questions? Where and how will you collect the data?

Budget (½ page):

- Think through the costs of your study and specify how you plan to cover them. Distinguish between your project costs (e.g., travel, fieldwork, software, etc) and your personal costs for undertaking postgraduate study (living allowance, tuition fees, etc).

References (½-1 page):

- List your readings

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Critical Thinking Assessment Frame

This frame has been adapted from what was called the Centre for Critical Thinking in the USA. It provides a useful starting point for assessing Research Outputs and Outlines of Intended Research developed by prospective research students at ISF. Generally, candidates should demonstrate 'good' or 'excellent' critical thinking skills.

Excellent	Good	Sound	Shaky	Poor
Clear Well-reasoned Insightful Self-evaluation evident Raises important questions Recognises important assumptions Clarifies key concepts Identifies competing points of view Reasons from a clearly stated premise Shows sensitivity to important implications and consequences Shows that basic concepts and principles are internalised Gives an in-depth analysis of questions and problems	On the whole is clear, precise and well-reasoned, but without depth of insight Comprehension of basic concepts and principles. Demonstrates competence in self-evaluation Often raises questions and issues Recognises some questionable assumptions Sometimes identifies competing points of view. Demonstrates commitment to reason from clearly stated premises. Sound reasoning and problem-solving within a field	Mixed thinking and performance Inconsistently clear, precise and well-reasoned Doesn't display depth of insight. Inconsistent comprehension of and internalisation of basic concepts and principles Sometimes raises questions and issues Sometimes recognises key assumptions Inconsistently uses language in accordance with educated usage Sometimes identifies competing points of view Does not demonstrate a commitment to reason from a clearly stated premise. Inconsistent reasoning and problem solving within a field	Acquisition of knowledge by memorising rather than comprehension Thinking is typically unclear, imprecise and poorly reasoned Superficial or mistaken comprehension of basic concepts and principles. Does poorly in self-evaluation Superficially analyses questions and problems Only partially clarifies concepts Rarely identifies competing points of view Does not recognise his/her assumptions Insensitive to important implications and consequences Poor reasoning and problem-solving	Acquisition of knowledge by memorising rather than comprehension Regularly unclear, imprecise and poorly reasoned Basic terms and distinctions are regularly incorrectly used Mistaken comprehension of basic concepts and principles Does not raise questions and issues Does not recognise his/her assumptions Does not clarify concepts Does not use language in keeping with educated usage Confuses his/her point of view with the truth No understanding of a commitment to reason from clearly stated premises Oblivious to important implications and consequences Incompetent reasoning and problem-solving