

## PhD research opportunities – Revitalising Informal Settlements and their Environments (RISE) program

- 3-year scholarship
- Expected start: February 2020
- Domestic fees at Monash University covered
- Stipend: AUD \$27,872 p.a.

### What is the Revitalising Informal Settlements and their Environments (RISE) program?

RISE is an action-research program exploring how to make water and sanitation more sustainable and inclusive by trialling the [water sensitive cities](#) approach in 24 urban informal settlements in Makassar, Indonesia and Suva, Fiji. Working alongside communities, governments, local leaders and partner institutions, the program aims to show that nature-based solutions – such as constructed wetlands – can deliver low impact, cost-effective health and environmental improvements. Underpinned by the emerging discipline of ‘planetary health’, RISE success will be measured by the health and wellbeing of residents – particularly children under five years of age – and the ecological diversity of the surrounding environment.

More information can be found here: [www.rise-program.org](http://www.rise-program.org).

### The opportunities

Four (4) competitive scholarships are available to undertake full-time PhD research at Monash University. The PhDs are designed to interlink with the RISE program. The PhD researchers will work side-by-side the internationally-acclaimed RISE senior researchers as well as the in-country partners and RISE teams in Fiji and Indonesia to pursue their research.

The broad subject areas of the PhD research positions have been established, however there is scope for each PhD researcher to refine and develop their own research profile and expertise. This will be encouraged along with cross-faculty and discipline cooperation in line with the interdisciplinary nature of RISE.

The four PhD placements are as follows:

#### 1. Economic implications of the RISE intervention

- **Number of PhD places available:** 1
- **Enrolment:** to be enrolled at the Centre for Health Economics (CHE), Faculty of Business and Economics, Monash University
- **Experience required:** Honors and/or masters degree in economics, econometrics, statistics or health economics.
- **Supervisory team:** This PhD will be supervised by [Prof. David Johnston](#), RISE Objective 4 Leader, [Dr Rohan Sweeney](#), [Prof. Tom Clasen](#) from Emory University, RISE Objective 5 Leader, with close working relations to Objective 1 (Intervention) Leader [Prof. Diego Ramirez-Lovering](#).
- **Summary of PhD project:**  
Although the evidence suggests that water and sanitation interventions are effective in preventing diarrhoea and certain other faecal-oral diseases, the extent to which interventions are ultimately deployed will not be determined on their effectiveness alone. With limited resources, particularly in developing countries, governments are forced to allocate health expenditures to an array of public health

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challenges and therefore the economic aspects of new approaches to delivering water and sanitation services are crucial in the ultimate viability of scaling-up beyond small research and pilot projects.

This PhD project will undertake an economic analysis of the RISE intervention to understand its potentials for scale-up. The research would likely consist of up to five main analyses, such as: (1) a cost analysis to carefully document the costs of the intervention; (2) a cost-benefit analysis (CBA) to estimate the ration of benefits to cost; (3) if the intervention proves to be effective preventing disease, a cost-effectiveness analysis (CEA) would be undertaken to estimate the cost per DALY averted (or some other measure of health impact), and possibly (4) willingness to pay (WTP), and/or (5) ability to pay (ATP) which would yield additional data on the contribution that beneficiaries could make to the cost of scaling up the intervention.

Data will be drawn directly from the RISE implementation, but the analyses could also model the effects of taking the intervention to different levels of scale (e.g. precinct or citywide scale), where certain efficiencies may be realized. Health effects would be drawn from Objective 3 of the overall RISE study, with the health effects spread over a given population over a fixed period of time following the methodology use by WHO CHOICE or a similar approach. The CBA would require detailed surveys and other data collection strategies to capture and then monetize all the health and non-health benefits of the RISE intervention, including time savings.

As part of the PhD program, the candidate will undergo rigorous training in advanced health economics and related studies. There are further opportunities for conference travel and the potential for a research visit to one of our international partner institutions. Further information on our CHE PhD program can be found [here](#).

## 2. Detection of enteropathogens in humans and in the environment

- **Number of PhD places available:** 1
- **Enrolment:** Faculty of Science or Faculty of Engineering
- **Experience required:** Honors and/or masters degree in microbiology/molecular biology.
- **Supervisory team:** This PhD will be supervised by Prof. [Karin Leder](#), Assessment Team Leader, Assoc. [Prof Chris Greening](#), RISE Chief Investigator, and Assoc Prof. [David McCarthy](#), RISE Chief Investigator, with close working relations with the leaders of Objective 2 (Prof. [Steven Chown](#)) and Objective 3 (Prof. [Stephen Luby](#)).
- **Summary of PhD project:**  
Under the umbrella of 'planetary health', this PhD research project will explore the microbiological interface between the environment and human health. The RISE intervention goal is to reduce fecal contamination in the environment. RISE hypothesizes that a reduction in viruses, bacteria and parasites in the environment (principally in water and sediment), may lead to a reduction in pathogen carriage in the human gut, and thus reduce incidence of ill health (e.g. diarrhea), especially in children.

Operating at the intersection between Objective 2 (environment) and Objective 3 (human health), this PhD will help determine the prevalence of different enteropathogens prior to intervention, monitor enteropathogen prevalence in children, soil and water across the study, and advance knowledge on the microbiological relationship between humans and their domestic environments. The PhD will build on a 'scoping study' that is currently underway which is comparing different methods available for detecting multiple enteropathogens (qPCR, genomic sequencing, and TaqMan Array Cards) using RISE baseline samples.

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### 3. Gender, WASH and intersectionality in co-design of upgrading interventions

- **Number of PhD places available:** 2
- **Enrolment:** Monash Sustainable Development Institute
- **Experience required:** Honours and/or masters degree in anthropology, sociology, gender studies, international development, law, or similar. Strong experience with collecting and analyzing qualitative and/or mixed-methods data. International work experience with local partners/stakeholders is preferred but not required.
- **Supervisory team:** This PhD will be supervised by A/Prof [Becky Batagol](#), RISE 'Water for Women' project lead; A/Prof [Annette Bos](#); and [Prof. Tom Clasen](#) from Emory University, with close working relations to to Objective 1 (Intervention) Leader [Prof. Diego Ramirez-Lovering](#).
- **Summary of PhD project:**  
Historically, WASH (**Water, Sanitation and Hygiene**) programs have been gender-blind, meaning that they largely ignored gender norms in favour of a one-size-fits-all approach to providing WASH facilities. There is increasing awareness of the need for more gender-sensitive approaches based on different biological and social needs of women and men in relation to WASH. Gender-sensitive community-based collaboration in design ('co-design') of WASH interventions is critical to their sustainable and equitable implementation.

These two PhD projects are aligned with DFAT's 'Water for Women' (W4W) program, a partnership between Monash and Emory Universities, which bring together their international expertise in water, sanitation and hygiene (WASH) and gender. The goal of the W4W project is to generate new evidence on a gender and socially inclusive co- design approach that addresses social and technical aspects of safely managed water and sanitation as well as structural inequalities faced by able-bodied and disabled women and girls including in leadership, self-efficacy, safety and inclusion.

To fill the evidence gap, we will study the process of co-designing the water-sensitive revitalisation of informal settlements at household and community levels, through an intersectional gender lens, in both Fiji and Indonesia. The proposed implementation research will result in the development of a toolkit for intersectional, gender-inclusive co- design of water-sensitive solutions for urban informal settlements. It will create a reliable resource for future WASH projects, which will promote the use of sustainable, evidence- based practices by implementers including civil society organisations, governments, and other WASH sector actors.

**Please note that travel to research sites in Indonesia and Fiji is expected.**

**Eligibility:** Applications are sought from students with a H1 (first class or equivalent) degree in a relevant discipline as listed above. Applicants must meet Monash University's minimum English language proficiency requirements for entry into a higher degree by research program

These PhD Monash scholarships are secured to the funding level for Australian citizens or permanent residents only (funded at the rate of the Australian Postgraduate award). For international applicants, top-up funding through the RISE program may be possible (for the difference between domestic and international fees). International applicants are also encouraged to seek additional funding sources.

Details of eligibility requirements to undertake the PhD are available at <http://www.monash.edu.au/migr/research-degrees/>

**Selection Criteria:** Candidates will be selected in regard to their potential for research excellence and relevance of past experience and training.

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### Application process

Submit an expression of interest (Eoi) online [RISE PhD EOI Form 2020](#)

Please ensure your Eoi includes:

- A cover letter that identifies your preferred focus area and explains your interest and suitability for the project;
- A detailed curriculum vitae including academic transcript(s) and a list of any published works (if applicable);
- Names and contact details of two academic referees
- Explanation if you would be an Australian or international student, and if the latter any funding you have or are attempting to secure.

Closing date for Eoi: **31 August 2019**

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