ONE BASIN CRC PhD program

Are you looking at developing world-leading skills in helping communities tackle climate change, capitalise on the digital transformation and accelerate rural innovation? Are you interested in receiving training from internationally renowned experts, whilst working with industry partners in the iconic Murray-Darling Basin on real-world problems?

The One Basin Cooperative Research Centre (One Basin CRC) offers attractive PhD packages in a broad range of disciplinary fields and across multiple universities in Australia (Australian National University, Charles Sturt University, Flinders University, The University of Adelaide, The University of Melbourne, The University of Sydney). Our PhD graduates will be the future leaders in basin research and application. Our One Basin PhD program provides unprecedented leadership development opportunities, extensive industry networking, and the chance to establish a deep understanding of your chosen field. Key features of the One Basin CRC PhD Program are:

- A 3.5 year scholarship with the option of a 6 month-funded internship with an industry partner or equivalent part-time employment.
- A flexible funding package including a stipend as much as $56,000 pa* and generous travel and operational costs, with potential additional income from working part-time with industry partners and further scholarship funding.
- The PhD program seeks to achieve gender balance and attract candidates from all walks of life, with Australians of Indigenous and Torres Strait Islander heritage particularly encouraged to apply.
- Opportunities for travel (including the possibility of international conferences), development and engagement with a strong research network that is being developed through the 10-year CRC.
- Each candidate will spend the majority of their time in one of the following research hubs: Loxton (South Australia), Mildura (Victoria), Griffith (NSW) and Goondiwindi (Queensland) with associated node in Narrabri (NSW).

Our PhD program will give you the professional skills and networks to accelerate your career in research or practice across the water, agriculture or environmental sectors.

** This is dependent on the host university policies, other available co-funding, and candidature experience and background. Candidates will receive a minimum stipend of $35,000 pa and a further minimum $20,500 (total) in operational funding (2024-25 rate). The exact allocation of the funding package between the stipend and support activities (such as conferences, travel to and from regional hubs) will be agreed to by the host university, PhD student and the 1BCRC. Applicants must be intending to apply for, and be highly competitive for, a Research Training Program (RTP) Stipend (or an equivalent scholarship). The student will enter the PhD program in 2025 and enrol on a full-time basis.*

Are you a student looking for an outstanding PhD opportunity with strong industry links and career opportunities at an equivalent graduate level salary? Are you an industry professional who is open to undertaking a PhD project while retaining employment and salary benefits?

PhD project ID: 1BPhD23-01 **Date advertised:** 8 September 2024

PhD project title:

Harvest Foresighting: Unifying on- and off-farm insights to improve harvest decisions under a changing climate

Description of the topic of PhD project:

Effective planning and scheduling of winegrape harvest operations is complex and requires evaluation of both on- and off-farm factors as well as their interactions. However, previous works designed to support decision-making surrounding harvest operations are limited in their consideration of either on- (farm-centric) or off-farm (production-centric) factors, neglecting important interactions such as the influence of weather and irrigation on harvest and transport logistics. The need to account for these interactions is exacerbated under a changing climate. This project will apply innovative numerical techniques (e.g. robust optimisation, bottom-up stress-testing) to support harvest planning and scheduling decisions, considering the interaction between on- and off-farm factors and how these interactions might change into the future. The project will employ a case study in collaboration with an industry partner.

Primary university supervisor(s):
Dr Matthew Knowling (The University of Adelaide)

Co-supervisors:
Dr Aaron Zecchin and Professor Holger Maier (The University of Adelaide); Dr Paul Petrie (SARDI); Dr Jason Smith (Charles Sturt University)

Requisite qualifications and experience:
Candidates must have a qualification equivalent to an Australian H1 Honours degree (a prior research thesis that was at least six months of full time credit and received an excellent mark, or a first author publication in a peer-reviewed international journal). Candidates with Masters or honours degrees in the following disciplines, or with equivalent research or work experience will be favourably considered: *Agricultural or Environmental Engineering, Agricultural Economics, Management and Information Technology; Agricultural Science, Data Science. Quantitative skills essential.*

To determine your eligibility for studying at The University of Adelaide see:
https://www.adelaide.edu.au/graduate-research/

1BCRC industry partner(s) potentially involved:
Duxton Vineyards, Wine Australia, the Bureau of Meteorology, Murraylands and Riverland Landscape Board