

Position Description

Research only - Research Officer

Position No:

Department: Department of Animal, Plant and Soil Sciences

School: Life Sciences

Campus/Location: Melbourne (Bundoora) – position is to be based externally with CSIRO Toowoomba QLD

Classification: Level A – Research Officer

Employment Type: Full time end September 2022

Position Supervisor: Senior Lecturer
Number: 50144193

Other Benefits: <http://www.latrobe.edu.au/jobs/working/benefits>

Further information about:

La Trobe University - <http://www.latrobe.edu.au/about>

School of Life Science, Centre for AgriBioscience – <http://latrobe.edu.au/agribio>

For enquiries only contact:

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Position Description

Level A - Research Officer

A Level A research only academic is expected to contribute towards the research effort of the institution and to develop their research expertise through the pursuit of defined projects relevant to the particular field of research.

Position Context

Mungbean (*Vigna radiata*) is an increasingly important crop in farming systems in subtropical Australia, and the world. However, farmers often find grain yields of mungbean are disappointing and highly variable. Diagnosis of factors reducing yield has been difficult. Using crop simulation models is useful for diagnosing yield gaps, to explore critical stresses and yield limitations across environments, and to identify genotype by environment by management scenarios that may bring about improvements in grain yields and their reliability. The ability to use crop simulation more effectively to guide mungbean agronomic recommendations is hindered by inability to capture a greater diversity of cultivars (particularly newly released cultivars), and to integrate better those physiological factors that are driving yield development and phenology in the crop.

The postdoctoral fellow will conduct a project that will upgrade the current APSIM-Mungbean model and integrate this into the NexGen crop models being developed in APSIM currently. The main goals are to improve the ability to simulate differences amongst cultivars, and to develop greater functionality in terms of sensitivity to water and temperature stresses and drivers of canopy development. These additions will allow for extrapolation of field-based experiments from mungbean agronomy projects across a range of climatic and environmental conditions. This will allow for predictions of long-term optimal agronomic practices such as times of sowing to optimize crop harvest index and yield, flowering time to reduce heat or cold stress, and exploring the interactions of different irrigation strategies or soil water conditions.

The position is funded by the Grains Research and Development Cooperation and will interact closely with teams researching mungbean agronomy and physiology. The PDF will be employed by La Trobe University and hosted and supervised by CSIRO's farming systems modelling team based in Toowoomba/Gatton QLD.

Duties at this level may include:

Under the direction of senior research scientists and engineers, postdoctoral fellows will:

- Carry out innovative, impactful research of strategic importance to CSIRO that will, where possible, lead to novel and important scientific outcomes.
- Recognise and exploit opportunities for innovation and the generation of new theoretical perspectives, and progress opportunities for the further development or creation of new lines of research.
- Record, manage, and analyse data/information using relevant domain data science techniques.
- Carry out research investigations requiring originality, creativity and innovation.
- Proactively undertake development to grow effective researcher capabilities to support career goals.
- Adhere to the spirit and practice of relevant (CSIRO and La Trobe's) codes of conduct, Health, Safety and Environment plans and policies, Diversity initiatives and Zero Harm goals.

This position will have specific responsibilities to:

- Coordinate collection and review of data from mungbean physiology and agronomy experiments.

- Develop and test a Mungbean module in APSIM NextGen in collaboration with the APSIM development team
- Engage with other researchers and industry to conduct simulation analyses to address key agronomic management issues to optimise mungbean grain yields and reliability.
- Produce client reports & scientific papers suitable for publication in journals.
- Present research findings to collaborating farmers, advisors and research partners
- Prepare appropriate conference papers and present those at conferences.
- Undertake limited administrative functions primarily connected with the area of research.
- Undertake other duties commensurate with the classification and scope of the position as required by the Head of Department or Head of School.

Key Selection Criteria

- A doctorate (or will shortly satisfy the requirements of a PhD) in a relevant discipline area, such as agricultural science, crop or forage physiology, systems modelling.
- A history of professional and respectful behaviours and attitudes in a collaborative environment.
- High level written and oral communication skills with the ability to represent the research team effectively internally and externally, including publishing scientific papers in peer reviewed journals and/or reports, and presenting at national and/or international conferences.
- Evidence of experience in research and evaluation and the ability to work effectively under limited supervision or independently
- A record of science innovation and creativity, including the ability & willingness to incorporate novel ideas and approaches into scientific investigations.

Desirable Criteria:

- Demonstrated understanding of plant physiological processes important in grain crops.
- Experience with development and/or application of crop models.
- Familiarity with grain legume agronomy, physiology and modelling.
- Appreciation for and experience in communicating and engaging with diverse stakeholders in research.
- Remain productive, positive and resilient in complex, ambiguous and/or uncertain environments.
- The ability to work effectively as part of a multi-disciplinary, potentially regionally dispersed research team, plus the motivation and discipline to carry out autonomous research.

Other relevant information:

- The position description is indicative of the initial expectation of the role and subject to changes to University goals and priorities, activities or focus of the job.

Essential Compliance Requirements

To hold this La Trobe University position the occupant must:

- hold, or be willing to undertake and pass, a Victorian Working With Children Check; AND
- take personal accountability to comply with all University policies, procedures and legislative or regulatory obligations; including but not limited to TEQSA and the Higher Education Threshold Standards.

La Trobe Cultural Qualities

Our cultural qualities underpin everything we do. As we work towards realising the strategic goals of the University we strive to work in a way which is aligned to our four cultural qualities:

- We are **Connected**: We connect to the world outside — the students and communities we serve, both locally and globally.
- We are **Innovative**: We tackle the big issues of our time to transform the lives of our students and society.
- We are **Accountable**: We strive for excellence in everything we do. We hold each other and ourselves to account, and work to the highest standard.
- We **Care**: We care about what we do and why we do it. We believe in the power of education and research to transform lives and global society. We care about being the difference in the lives of our students and communities.

For Human Resource Use Only

Initials: Date: