

Position Description

Research Officer – Digital phenotyping for enhanced disease resistance outcomes in cereal crops

Position No:	NEW
Business Unit:	Office of the Provost
Division:	School of Agriculture, Biomedicine and Environment (SABE)
Department:	APSS
Classification Level:	Level A (Research Only)
Employment Type:	Fixed-term (2 years), Full time
Campus Location:	Bundoora
Other Benefits:	http://www.latrobe.edu.au/jobs/working/benefits

Further information about:

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

This position: Dr Peter Dracatos p.dracatos@latrobe.edu.au

Position Context/Purpose

This position falls within the Barley Net Blotch Consortium (BNBC) funded by the Grains Research Development Corporation as part of Program 3 led by La Trobe University - Micro-phenotyping: Digital phenotyping for enhanced disease resistance outcomes. The BNBC is a partnership between University of Queensland, Department of Energy, Environment and Climate Action (DEEC), Queensland Department of Agriculture and Food, SARDI and La Trobe University.

We focus on barley disease resistance genetics and the development of digital fungal disease phenotyping research and innovation mainly in genetics, crop immunity, microscopy and mode of action studies. Our vision is to facilitate development of sustainable agri-food systems powered by durable disease resistance mechanisms to enhance grain production and reduce the reliance on fungicides and increase resilience to new emerging virulent strains of the fungus.

The appointee will join the Department of Animal, Plant and Soil Sciences in the School of Agriculture, Biomedicine and Environment at La Trobe University's Bundoora campus, and be based in AgriBio, a state-of-the-art joint venture facility of the University and the Victorian Government. This position will work as part of a collaborative team to develop improved genetic resistance to fungal foliar pathogens in cereal grain crops.

La Trobe is a participant in the Athena SWAN Charter to enhance gender equality in Science, Technology, Engineering, and Mathematics disciplines. As such, we especially encourage female applicants to apply.

Duties at this level will include:

- Provide leadership in terms of technical staff and postgraduate student supervision and report writing.
- Assist in setting up a lab working with cereal fungal diseases
- Conduct and publish, or otherwise disseminate high quality and/or high impact research/scholarly activities under limited supervision either independently or as part of a team.
- Participate in professional activities including presentations at conferences, interact with national collaborators, deliver seminars in field of expertise.
- Attendance at meetings associated with research or the work of the unit to which the research is connected and/or at Departmental or School meetings and/or membership of a limited number of committees.
- Acquire and interpret research data and results. Run analyses and tests using specified and agreed techniques and models. Contribute to the development of techniques, models and methods.
- Undertake other duties and administrative functions commensurate with the classification and scope of the position as required by the Head of Department or Dean.
- Provide leadership in the planning, development and conduct of disease resistance and digital phenomics research in the laboratory and controlled environments.
- Contribute to the development of high-quality research in the field of micro and macro phenomics of foliar diseases of cereal grain crops and publish scholarly papers in high quality outlets.
- Contribute to the planning and analysis of disease screening of cereal grain accessions with research collaborators.
- Contribute to the preparation of grant applications, papers for conference presentations, and reports for funding bodies, industry bodies and external stakeholders.
- Participate in interactions with industry and research collaborators as required.
- Be heavily involved in the training of research assistants, research higher degree and Honours students.

Essential Criteria

Skills and knowledge required for the position

- Completion of a PhD in plant pathology, plant microbe interactions, digital agriculture, plant disease phenomics or closely related field.
- Experience working with fungal plant pathogen interactions.
- Experience and skills in statistical genetics, bioinformatics or image analysis.
- Experience and skills in microscopy (e.g. fluorescence), command-line coding and/or image analysis (i.e. RGB camera).
- An interest in the technical development and troubleshooting in phenomics equipment
- Evidence of experience in research leadership including co-supervision of HDR students and the ability to work effectively under limited supervision or independently.
- A strong contribution to publications in highly ranked scientific journals, conference papers and/or reports and professional or technical contributions which provide evidence of research potential.
- High level organisational skills: the ability to set priorities, meet deadlines, initiate and follow-up actions.
- Ability to liaise effectively with a range of collaborators nationally and/or internationally and with industry partners.
- Demonstrated ability to work as a member of a team in a cooperative and collegial manner.
- Excellent research management skills including maintaining accurate records of project activities and an ability to communicate them effectively to the project leader.
- Effective oral and written communication skills, including the ability to interact effectively with people from a diverse range of backgrounds.

Desired skills

- Ability to effectively employ AI/Machine Learning (ML) methods to solve real-world problems in the area of digital Ag.
- Strong research expertise and experience in computer vision, e.g., RGB image processing using ML/AI models.
- Strong data analytical skills (data handling, cleaning, processing, and visualising) and strong programming skills (Python, R, Java, etc.).
- Experience in microscopy to observe plant disease infection biology
- Technical interest in problem solving and digital Ag technology hardware

Capabilities required to be successful in the position

- Ability to work collaboratively, recognise the value of diversity and model accountability, connectedness, innovation and care.
- Ability to demonstrate self-awareness, see things from another person's perspective and actively seek out and act on feedback to improve knowledge, skills and behaviour.
- Ability to enable a safe, inclusive, high-performing team culture, prioritising staff mental health and wellbeing.
- Ability to build a culture of continuous improvement, implementing ideas generated by team members.

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.

Other 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.

Position Flexibility

We offer flexible work arrangements that can assist you in balancing your work and other responsibilities.

Why La Trobe:

- Develop your career at an innovative, global university where you'll collaborate with community and industry to create impact.
- Enjoy working on our inspiring and stunning campuses – the perfect hub for industry, students and academics
- Help transform the lives of students, partners and communities now and in the future

This is more than just a job. Working at La Trobe offers opportunities to demonstrate excellence and transform lives.

Here, you'll join exceptional people, partners and communities, who power our operations with ambition and purpose.

Our success can be attributed to its strong sense of community. We have a long-standing commitment to diversity, inclusion and social justice; we are committed to providing a workplace where all staff feel valued, respected and supported to achieve their full potential. We strive to build a workplace where all employees of diverse backgrounds, abilities, experiences, sexuality, gender, religion and age are welcome, valued, respected and one that is representative of our community. We demonstrate our cultural qualities by holding ourselves accountable and creating a culture of trust and innovation while genuinely caring for one another.

La Trobe's Cultural Qualities:

WE ARE CONNECTED



We are **connected** to each other and the communities around us. We engage with those communities to learn from our past, inform our present and impact our future.

WE ARE INNOVATIVE



We are **innovative** in tackling the most important issues of our time. We are inquisitive and seek to develop new ideas that positively impact the way we work and the world around us.

WE ARE ACCOUNTABLE



We are **accountable** for what we do and share a commitment to excellence. We are courageous and respectful in the way we hold ourselves and each other to account.

WE CARE



We **care** about what we do and value the power of education and research. We care about each other and strive to create a safe and inclusive community.

For Human Resource Use Only

Initials:

Date: