



POSITION DESCRIPTION

ARC Research Hub for Smart Fertilisers, School of Agriculture and Food
Faculty of Veterinary and Agricultural Sciences

Research Fellow (Plant-Soil Microbiomes)

POSITION NO	0054236
CLASSIFICATION	Level A
SALARY	\$95,179 - \$102,163 (pro rata for part-time)
SUPERANNUATION	Employer contribution of 17%
WORKING HOURS	Full-time
BASIS OF EMPLOYMENT	Fixed-term position available for up to 2 years
OTHER BENEFITS	https://about.unimelb.edu.au/careers/staff-benefits
HOW TO APPLY	Online applications are preferred. Go to http://about.unimelb.edu.au/careers , select the relevant option ('Current Opportunities' or 'Jobs available to current staff'), then find the position by title or number.
CONTACT FOR ENQUIRIES ONLY	Dr Hang-Wei Hu Tel +61 424600321 Email hang-wei.hu@unimelb.edu.au <i>Please do not send your application to this contact</i>

For information about working for the University of Melbourne, visit our website:
about.unimelb.edu.au/careers

Position Summary

The Research Fellow (Plant-Soil Microbiomes) will play a key role in the ARC Research Hub Theme 3 (Harnessing plant-soil microbiome interactions for optimising nutrient capture and informing fertiliser design) and collaborate with the other Themes across this multi-disciplinary, industry-university partnership.

Working closely with the Hub Director, Theme 3 Leader and theme 3 Chief Investigators, this role will:

- identify how the plant-soil-microbiome interactions influence the root physiology and signaling molecules for nitrogen acquisition for selected crops under varying abiotic conditions;
- develop a framework for high-throughput isolation of plant beneficial communities and test their efficacy on plant performance under controlled conditions using synthetic community approach;
- evaluate how the interactions of new chemical and biological fertilisers with plant roots and soil microbiomes to benefit the growth of the selected crops.

The position requires excellent research and interdisciplinary background in plant-soil microbiomes, molecular ecology, plant physiology, and soil biology. The incumbent will have excellent interpersonal skills to support collaboration across disciplines and with industry partners and external stakeholders. The Research Fellow will also play an active role in mentoring and developing the skills of Hub graduate researchers.

This position offers an excellent opportunity for a researcher interested in working in a highly applied, inter-disciplinary field, collaborating with industry to create innovative solutions that address significant economic and environmental challenges in the agricultural sector.

This position will primarily be located at the University of Melbourne's Parkville Campus and may be required to attend other sites and campuses.

Australian Research Council (ARC) Research Hub for Smart Fertilisers

The *Australian Research Council (ARC) Research Hub for Smart Fertilisers and Inhibitors* commenced operations in August 2021 and will undertake interconnected projects over 5 years that aim to transform agriculture by delivering a new class of nitrogen fertilisers and inhibitors designed to increase efficiency of nitrogen use by crops and reduce losses to the environment. The Hub is funded through the [Australian Research Council Industrial Transformation Research Program](#) and is a partnership between the *University of Melbourne, La Trobe University* and two of Australia's leading agribusinesses – *Incitec Pivot Fertilisers (IPF)–Fertilisers* and *Elders Rural Services*. The Hub aims to develop a suite of novel cost-effective controlled-release N fertilisers and new urease and nitrification inhibitors, tailored for Australia's intensive agricultural industries to address challenges posed by a variable and changing climate and soil conditions.

The research addresses the global challenge of low nitrogen use efficiency in agriculture, environmental degradation, and greenhouse gas emissions. To achieve this the Hub brings together industry partners and a multi-disciplinary team to work on interconnected projects in nano chemical engineering, synthetic chemistry, plant physiology, plant biochemistry, soil microbiology and economics. The Hub will use a novel co-design process involving representatives of the whole agriculture value chain from product design through to validation and adoption.

1. Key Responsibilities

The University of Melbourne sets 'Minimum Standards for Academic Levels' (MSALs) which are expected from academic staff. The levels are differentiated by level of complexity, degree of autonomy, leadership requirements of the position, and level of achievement of the academic and may be amended from time to time.

Below is the MSALs for Level A academic staff. The Key Responsibilities, outlined in this section, are to be read in conjunction with this MSAL.

Level A - Tutor, Research Assistant (Grade 2), Research Fellow (Grade 1)

A level A academic will work with the support and guidance from more senior academic staff and will work under the supervision of academic staff at level B and above.

A level A academic is expected to develop their expertise in teaching, scholarship and/or research with an increasing degree of autonomy and may work with limited supervision and/or as part of a team.

A level A academic will contribute to teaching at the institution (at a level appropriate to the skills and experience of the staff member) and/or undertake research and/or engage in professional activities appropriate to his or her profession or discipline.

They will undertake administration primarily relating to their activities at the institution.

The contribution to teaching and supervision of students of level A academics will be primarily at undergraduate and graduate diploma level.

The results of research conducted may be published as sole author or in collaboration.

1.1 TEACHING AND LEARNING

- ▶ This is an Academic Research only position and there is no expectation to teach, however there may be opportunities to contribute to teaching and learning activities.

1.2 RESEARCH AND RESEARCH TRAINING

- ▶ Conduct research and deliver against research objectives to meet project milestones and reporting schedule as well as fully immerse in the research culture of the Faculty.
- ▶ Undertake research leading to publication arising from research in peer-reviewed journals, articles and oral and written presentations to industry and lay audiences, including presentations at industry and science conferences.
- ▶ Prepare written reports of the progress of research work ensuring that the research data within these reports are presented in a publication quality format.
- ▶ Promote collaborations across institutions, internationally and nationally to further research in related disciplines.
- ▶ Attend and contribute to meetings associated with research project and actively contribute to outcomes and objectives.
- ▶ Attend and participate in Hub events and industry engagement activities and give internal and external oral seminars/lectures on the project topic areas.
- ▶ Participate in Hub industry placements, site visits, mentoring and training programs.
- ▶ Under limited supervision, deliver against research objectives.
- ▶ Assist to identify and contribute to the application of research funds and grants.

- ▶ Within the scope of the level of appointment, supervise honours, postgraduate coursework and research higher degree students and ensure completions in a timely manner.
- ▶ Lead and foster research activities of, and mentor, staff and students as appropriate the Level of the role.
- ▶ Build and sustain research activities in related area, with a focus on interdisciplinary activities where appropriate.
- ▶ Attend and participate in Research Showcase events, including Open Day, and give internal and external seminars/lectures on topic areas relevant to the role.

1.3 LEADERSHIP AND SERVICE

- ▶ Lead by example and ensure the values, standards and expectations appropriate behaviour in the workplace and the best interests of a leading University are upheld as well as the University's commitment to a diverse and inclusive workplace.
- ▶ Prepare and participate in the communication and dissemination of information relating to the discipline.
- ▶ Assist with the provision of leadership in the discipline and foster excellence in research.
- ▶ Participate in activities and events that enable translation and extension of project findings to broader audiences, including, but not limited to, attending industry events, conferences, field days, writing for non-specialist audiences, participating in workshops and supporting sector and public engagement with the activities of the Hub.
- ▶ Contribute to a research program within the discipline and engage in professional activities which increases the profile of the School, Faculty and University.
- ▶ Undertake administration primarily relating to the activities of the role and serve on committees as directed and appropriate of the level of appointment.
- ▶ Attend relevant conferences and incorporate learning's into practice, as funding permits.
- ▶ Engage with relevant professional and industry bodies and stakeholders to foster collaborative partnerships.
- ▶ Foster excellence in research and scholarly output and develop best practice standards for the Faculty's and University.
- ▶ Foster a harmonious workplace environment that is conducive to productivity, promotes creativity and rewards and recognises individuals and group achievement.
- ▶ Contribute and participate events such as Open Day, Dookie Day and other activities at the Faculty and/or University level.
- ▶ Engage with students to maximise positive experiences and develop student experience initiatives within the curriculum that contribute to the development of a strong student cohort.
- ▶ Undertake appropriate leadership roles within the Faculty, School and/or University, if available.
- ▶ Promote student well-being and ensure all students are aware of all University support services, working in collaboration or seeking advice from more senior staff.

1.4 RESPONSIBILITY AND COMPLIANCE

- ▶ Maintain a sound knowledge of current University Policy and Procedures, and reliably follow these or provide compliant advice to others;
- ▶ Reliably follow communications protocols and/or policies as appropriate.
- ▶ Occupational Health and Safety (OH&S) and Environmental Health and Safety (EH&S) responsibilities as outlined in Section 5.
- ▶ Behavioural Expectations - All staff are expected to maintain the following behaviours:
 - ▶ Treat everyone equitably; act fairly with staff and demonstrate respect for diversity
 - ▶ Be an effective team player who is cooperative and gains the trust and support of staff, peers and clients through collaboration.

2. Selection Criteria

In order to be considered for interview by the Selection Panel, applicants must address the following Criteria in their application. Please visit the University website how to address [Essential Selection Criteria](#)

2.1 ESSENTIAL

- ▶ A relevant PhD degree or equivalent professional experience in a research field related to soil microbiology, plant microbiology, or microbial ecology.
- ▶ Proven ability to undertake research under limited supervision and delivering against research objectives, as evidenced by a record of contributions in peer-reviewed publications and presentations to scientific and industry audiences.
- ▶ Demonstrated knowledge and experience in plant-soil microbiome interactions, plant rhizosphere signalling molecules, soil biodiversity.
- ▶ Demonstrated knowledge and experience in high-throughput sequencing, bioinformatics, and statistical modelling approaches.
- ▶ Knowledge in plant beneficial microbes, plant growth promoting rhizobacteria and designing of synthetic communities.
- ▶ Demonstrated ability to publish research findings in high-impact scientific journals.
- ▶ Demonstrated ability to engage with relevant professional and industry bodies and stakeholders to foster collaborative partnerships.
- ▶ Demonstrated high-level organisational and administrative skills with the ability to prioritise a range of tasks, manage time effectively and meet deadlines in a busy environment.
- ▶ Well-developed interpersonal and communication skills with the ability to build and maintain relationships with internal and external stakeholders, and an ability to tailor information to difference scientific audiences in a diverse environment.

2.2 DESIRABLE

- ▶ Experience in isolating and identifying pure cultures of microbes from plant and soil samples.
- ▶ Experience and knowledge in biological fertilisers, synthetic communities, and microbiome-based products.

2.3 SPECIAL REQUIREMENTS OF THE ROLE

- ▶ As the Faculty of Veterinary and Agricultural Sciences is located over several metropolitan and regional campuses, staff may be required to travel to, or work from, other sites and campuses as required.
- ▶ This position requires the incumbent to hold a current and valid Working with Children Check

3. *Equal Opportunity, Diversity and Inclusion*

The University is an equal opportunity employer and is committed to providing a workplace free from all forms of unlawful discrimination, harassment, bullying, vilification and victimisation. The University makes decisions on employment, promotion and reward on the basis of merit.

The University is committed to all aspects of equal opportunity, diversity and inclusion in the workplace and to providing all staff, students, contractors, honorary appointees, volunteers and visitors with a safe, respectful and rewarding environment free from all forms of unlawful discrimination, harassment, vilification and victimisation. This commitment is set out in the University's People Strategy 2015-2020 and policies that address diversity and inclusion, equal employment opportunity, discrimination, sexual harassment, bullying and appropriate workplace behaviour. All staff are required to comply with all University policies.

The University values diversity because we recognise that the differences in our people's age, race, ethnicity, culture, gender, nationality, sexual orientation, physical ability and background bring richness to our work environment. Consequently, the People Strategy sets out the strategic aim to drive diversity and inclusion across the University to create an environment where the compounding benefits of a diverse workforce are recognised as vital in our continuous desire to strive for excellence and reach the targets of Growing Esteem.

4. *Occupational Health and Safety (OHS)*

All staff are required to take reasonable care for their own health and safety and that of other personnel who may be affected by their conduct.

OHS responsibilities applicable to positions are published at:

<https://safety.unimelb.edu.au/people/community/responsibilities-of-personnel>

These include general staff responsibilities and those additional responsibilities that apply for Managers and Supervisors and other Personnel.

5. *Other Information*

5.1 FACULTY OF VETERINARY AND AGRICULTURAL SCIENCES

<http://fvas.unimelb.edu.au/>

The Faculty of Veterinary and Agricultural Sciences is a leader in agricultural, food and veterinary science education and research in Australia.

The faculty comprises the Melbourne Veterinary School and the School of Agriculture and Food. The faculty operates across three campuses: Parkville, Werribee and Dookie. We acknowledge and pay respect to the traditional owners of the lands upon which these campuses are situated, the Wurundjeri and Boon Wurrung peoples and the Yorta Yorta Nation. In addition to education and research, the faculty operates a veterinary hospital at Werribee, a broadacre farm at Dookie, and an equine hospital in Shepparton.

As a faculty within the University of Melbourne, we share the core purpose of benefiting society, and the guiding aspiration to be a world-leading and globally connected Australian university with students at the heart of everything we do. We are dedicated to improving animal health, sustainable agricultural practice and food security through cross-disciplinary and collaborative research. Our focus on quality teaching spanning agricultural, food, and veterinary sciences, aims to equip tomorrow's leaders with the skills and knowledge to solve global issues. The faculty aspires to be the destination of choice in Australia and one of the finest in the world in the fields of agriculture, food, animal health and veterinary sciences for students, teachers, researchers, collaborators and investors.

Our research capabilities and expertise are focused on solving real-world problems and creating healthier and more productive communities and environments, both in Australia and globally. Interdisciplinarity and cooperation between our research disciplines underpin the faculty's One Health approach – recognising the inextricable link between human, animal, plant and environmental health. The faculty has particular research strengths in animal diseases, zoonotic infectious diseases, production animal systems (including dairy and red meat), animal welfare, soil and plant sciences, agricultural innovation and sensory food science. We have strong links with industry, policy makers, other research institutions and the wider community.

The faculty provides the only professional-entry veterinary medicine program in Victoria and offers one of the most comprehensive educational programs in agricultural and food science in Australia. Our programs range from custom-education short courses to masters courses and cover a wide variety of undergraduate and postgraduate subjects across agriculture, food, and veterinary science. Our flagship courses are the Bachelor of Agriculture, the Master of Agricultural Sciences, the Master of Food Science, and the Doctor of Veterinary Medicine.

5.2 THE UNIVERSITY OF MELBOURNE

Established in 1853, the University of Melbourne is a leading international university with a tradition of excellence in teaching and research. The main campus in Parkville is recognised as the hub of Australia's premier knowledge precinct comprising eight hospitals, many leading research institutes and a wide-range of knowledge-based industries. With outstanding performance in international rankings, the University is at the forefront of higher education in the Asia-Pacific region and the world.

The University employs people of outstanding calibre and offers a unique environment where staff are valued and rewarded.

Further information about working at The University of Melbourne is available at <http://about.unimelb.edu.au/careers>

5.3 ADVANCING MELBOURNE

The University's strategic direction is grounded in its purpose. While its expression may change, our purpose is enduring: to benefit society through the transformative impact of

education and research. Together, the vision and purpose inform the focus and scale of our aspirations for the coming decade.

Advancing Melbourne reflects the University's commitment to its people, its place, and its partners. Our aspiration for 2030 is to be known as a world-leading and globally connected Australian university, with our students at the heart of everything we do.

- ▶ We will offer students a distinctive and outstanding education and experience, preparing them for success as leaders, change agents and global citizens.
- ▶ We will be recognised locally and globally for our leadership on matters of national and global importance, through outstanding research and scholarship and a commitment to collaboration.
- ▶ We will be empowered by our sense of place and connections with communities. We will take opportunities to advance both the University and the City of Melbourne in close collaboration and synergy.
- ▶ We will deliver this through building a brilliant, diverse and vibrant University community, with strong connections to those we serve.

The means for achieving these goals include the development of the University of Melbourne's academic and professional staff and the capabilities needed to support a modern, world-class university. Those means require a commitment to ongoing financial sustainability and an ambitious infrastructure program which will reshape the campus and our contribution to the communities we engage with. This strategy, and the priorities proposed, is centred around five intersecting themes; place, community, education, discovery and global.

5.4 GOVERNANCE

The Vice Chancellor is the Chief Executive Officer of the University and responsible to Council for the good management of the University.

Comprehensive information about the University of Melbourne and its governance structure is available at <https://about.unimelb.edu.au/strategy/governance>