# POSITION DESCRIPTION

WESTERN SYDNEY UNIVERSITY

# Postdoctoral Research Fellow in Molecular Mechanisms of Fungal Competition

## POSITION DETAILS

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| Position Title | Postdoctoral Research Fellow in Molecular Mechanisms of Fungal Competition |
| Classification | Academic level A |
| Position Number | 7016370 |
| School/Office | Hawkesbury Institute for the Environment |
| Division | Provost |

## POSITION PURPOSE

The Postdoctoral Research Fellow in Molecular Mechanisms of Fungal Competition is central to a current Future Fellowship project, funded through the Australian Research Council and Hawkesbury Institute for the Environment at Western Sydney University, which will develop new insights into the mechanisms governing competition between beneficial fungi in soils and in host tissues. The overarching aim is to develop approaches that promote the establishment of elite symbionts in forestry applications. The role will work with national and international research groups to advance our basic understanding of how RNA and protein signals are used by competing ectomycorrhizal fungi in structuring microbiome assembly and promoting fungal persistence.

## KEY ACCOUNTABILITIES

1. Conduct original research and meet agreed research objectives related to the ARC Future Fellowship project.
2. Develop, execute and validate methods to achieve defensible scientific results related to characterising the role of secreted signals in fungal-fungal interactions.
3. Liaise with project collaborators and data owners to identify appropriate methods for management and analysis of data.
4. Apply data management methods to store, access and integrate data from diverse multi-omic sources to ensure compliance with the Australian Code for the Responsible Conduct of Research, and University policies.
5. Conduct in vitro and in vivo experiments in laboratory settings and in plant-growth facilities to characterise fungal signals.

6. Communicate project outcomes via presentations, reports and scientific publications.
7. Provide advice/mentoring to postgraduate research students where appropriate.

## QUALIFICATIONS, EXPERIENCE AND SKILLS

1. A PhD degree, or progress towards the formal completion of, or recently submitted PhD thesis for examination, in a relevant field (molecular biology, functional genomics, mycology).
2. Demonstrated knowledge and experience in applying a wide range of plant or microbial molecular biology techniques with preference given to candidates with experience in miRNA or protein effector characterisation studies.
3. Experience in managing, statistically analysing, and visualising complex multi-omic datasets.
4. Excellent verbal communication skills, presenting results to diverse audiences.
5. Demonstrated ability to write manuscripts for publication in internationally recognised scientific journals, and a track-record of publications appropriate for the applicant's career stage.
6. Excellent organisational skills, including the ability to work independently and with multiple collaborators to deliver timely results.

## KEY RELATIONSHIPS

- This position reports to: Associate Professor in Plant: Microbe Interactions (7009579)
- **This position supervises**: N/A
- **Key internal relationships:**
    - Institute Director
    - Institute Manager
    - Supervisor
    - Colleagues in the research theme, Institute and across the University, especially those involved in plant-microbe interactions and mycorrhizal ecology
    - Professional staff involved in managing laboratory and plant-growth facilities
- **Key external relationships:**
    - Australian Research Council
    - INRAE-France, SLU-Sweden, University of Birmingham

## CHALLENGES

- Developing whole-system approaches for understanding mechanistic relationships involving fungal-fungal-plant interactions.
- Conducting research on classes of fungal signals that are very poorly characterized and difficult to produce.
- Collaborating with diverse academic stakeholders.

## UNIVERSITY EXPECTATIONS

The University expects that all employees are aware of, and comply with legislation and Western's policies and procedures relevant to the position, including but not limited to:

→ Code of Conduct
→ Work Health and Safety and Wellbeing Management System
→ Enterprise Agreement or Award
→ Anti-discrimination principles, Equal Employment Opportunity and staff and student equity.

**Approved by: Lead People and Culture Partner (Provost)**
**Date: 25/05/2026**