

WESTERN SYDNEY UNIVERSITY



Hawkesbury Institute
for the Environment

HARNESSING MICROBES TO BOOST DROUGHT TOLERANCE IN GRASSES

ABOUT THE PROJECT

Grasslands are vulnerable to increasing intensity and frequency of drought and new adaptation and resilience building approaches are required to protect the wealth of ecosystem services provided by grasslands. Soil microbes offer an untapped opportunity to enhance drought survival in grasses. Yet, to harness this potential, we first need to identify the key microbial functions that contribute to plant tolerance to drought.

The Hawkesbury Institute for the Environment (HIE) within Western Sydney University is seeking an ambitious candidate for a 3-year PhD program of research to commence in 2021 in the multi-disciplinary and fast-developing field of plant-microbial interactions. The 3-year PhD program of research will commence in 2021 and is based at the Hawkesbury campus of Western Sydney University, Richmond, NSW.

The PhD candidate will conduct research implementing manipulative experiments and field surveys to identify those microbial taxa that drive drought-survival traits in grasses. The candidate will use a range of state-of-the-art ecological and molecular methods to:

(i) characterise microbial acquisition patterns by grasses with different drought survival traits. This will include field work and analysis of microbial populations from soil and plants across different sampling sites.

(ii) identify microbiome-driven plant traits that provide benefits to grasses under drought using glasshouse/field experiments.

The PhD candidate will have the unique opportunity to learn, develop and apply a range of cutting-edge experimental techniques, including a suite of advanced -omics technologies. They will also contribute to dissemination of results through scientific publications, conference presentations and group meetings and be immersed in a cutting-edge, fast-paced research environment with, the opportunity to interact with world-class collaborators from many different disciplines.

WHAT DOES THE SCHOLARSHIP PROVIDE?

- Domestic students will receive a tax-free stipend of \$30,000(AUD) per annum for up to 3 years to support living costs, supported by the Research Training Program (RTP) Fee Offset.
- International candidates will receive a tax-free stipend of \$30,000(AUD) per annum for up to 3 years to support living costs. Those with a strong track record will be eligible for a tuition fee waiver and Overseas Student Health Care (OSHC) insurance (single Policy).
- Support for conference attendance, field work and additional costs as approved by the Institute.

ELIGIBILITY CRITERIA

We welcome applicants from a range of backgrounds who are keen to apply their skills to the project topic. The successful applicants should:

- hold qualifications and experience equal to one of the following (i) an Australian Bachelor Honours degree, (ii) a coursework Masters with at least a 25% research component, (iii) a Master of Research degree or (iv) equivalent overseas qualifications.
- demonstrate strong academic performance in in microbial ecology and/or plant ecology.
- have proven skills in biological sequence data analysis.
- have a strong quantitative background.
- be enthusiastic and highly motivated to undertake further study at an advanced level.
- possess excellent written and verbal communication skills.

International applicants must demonstrate [English language proficiency](#).

Due to current international travel restrictions related to the COVID-19 pandemic, this scholarship is preferentially open to Australian domestic or international applicants that are onshore in Australia or New Zealand or have means to arrive in Australia and start in 2021.

HOW TO APPLY

1. Contact Dr Eleonora Egidi e.egidi@westernsydney.edu.au to discuss your eligibility and interest.
2. Contact the Graduate Research School to discuss enrolment and scholarships at grs.scholarships@westernsydney.edu.au.
3. Please submit an application form, CV, contact information for two referees and a one-page statement describing how your background and training and research interests align with the project aims.
4. Ensure all documentation is certified according to [Western Sydney University requirements](#).
5. All applications and supporting documentation must be submitted directly to the Graduate Research School as follows:

- Use the email subject line: **Application_[2021_010_HIE]**
- Submit to grs.scholarships@westernsydney.edu.au
- In the body of your email, include your full name, your student ID (if you are a current or previous Western Sydney University student) and the full title of the scholarship.
- Incomplete applications or applications that do not conform to the above requirements will not be considered.
- Please contact the Graduate Research School via email at grs.scholarships@westernsydney.edu.au for more information.

Closing date: 31 March 2021

*Applications close at 11.59pm Australian Eastern Standard Time (AEST).