POSITION DESCRIPTION

Postdoctoral Research Associate

Position Summary
The Postdoctoral Research Associate will drive research on the evolution of Australia’s tallest tree species, within a project funded by an ARC Discovery Grant (escalating the arms race: Understanding when and how trees get really tall, DP200100555). Australia’s giant Eucalypt trees are an amazing phenomenon and resource; underpinning unique ecosystems, rich in timber, stored carbon, and animal habitat. While tree height generally arises via an evolutionary arms race for light, the race has escalated dramatically in some locations and species. Using a computational framework that simulates adaptation driven by size-structured competition, we aim to quantify how distinct factors—including climate, fire regimes, and recruitment strategy—enhance the race for light and can thereby explain the origins of Australia’s giant Eucalypts.

The incumbent will contribute to the research project by leading computational analyses, using and further developing the plant model, to quantify how differences in climate, recruitment, and disturbance enhance the evolution of height across diverse Eucalypt species. The incumbent will also assist with field work quantifying traits of focal Eucalypt species in NSW, VIC, TAS and WA. The research will be undertaken in the EERC, in collaboration with Assoc Prof Peter Vesk at the University of Melbourne. We are seeking candidates with a demonstrated knowledge of systems modelling, ecological dynamics, terrestrial biogeochemistry, evolutionary dynamics, plant function and/or ecology.

The role of Postdoctoral Research Associate reports to Daniel Falster and has no direct reports.

Accountabilities
Specific accountabilities for this role include:

- Conduct research in line with the project’s aims and under the direction of the supervisors.
- Collaborate with other staff this project or others working on related matters to produce project outcomes.
- Be responsible for writing scientific reports and papers, coordinating research activities, participating in the setting of research directions and any other research activities as required.
• Communicate research findings by interacting with the international research community, publishing in highly ranked journals, and presenting to peers at local and international conferences.

• Assist in the supervision of postgraduate or honours students in this project area as opportunities arise.

• Assist with field campaigns led by other staff members.

• Align with and actively demonstrate the UNSW Values in Action: Our Behaviours and the UNSW Code of Conduct.

• Cooperate with all health and safety policies and procedures of the university and take all reasonable care to ensure that your actions or omissions do not impact on the health and safety of yourself or others.

Skills and Experience

• A PhD held or pending a relevant discipline, e.g. ecological/physiological/evolutionary/climate dynamics or biogeochemical processes.

• A strong research and publication track record (relative to career opportunity) in an area listed in the Position Summary.

• Advanced knowledge in one or more of the following areas: evolutionary/ecological/physiological/population dynamics, ecological theory, disturbance regimes, biogeochemical cycles, broadscale climatic gradients, model development.

• Excellent oral and written communication skills.

• Demonstrated ability to work effectively as part of a team and independently.

• Demonstrated ability and willingness to assist with field work, led by other team members.

• Demonstrated programming skills.

• An understanding of and commitment to UNSW’s aims, objectives and values in action, together with relevant policies and guidelines.

• Knowledge of health and safety responsibilities and commitment to attending relevant health and safety training

Desirable Criteria

• Detailed knowledge of plant ecology and vegetation dynamics

• Developed understanding of applied calculus (derivatives, integrals)

• Demonstrated commitment to reproducible research

• Demonstrated experience with model development

• Advanced programming/computing skills in particular in R, C++ and/or using High Performance computing environments.

About this document

This Position Description outlines the objectives, desired outcomes, key responsibilities, accountabilities, required skills, experience and desired behaviours required to successfully perform the role.

This template is not intended to limit the scope or accountabilities of the position. Characteristics of the position may be altered in accordance with the changing requirements of the role.