



Environmental and genotype-by-environment effects on economic traits in Tasmanian grown *E. nitens*

Amount: \$30,746 (2015 rate) tax free scholarship with possible 6 month extension plus project operational funds

Location: Hobart, Tasmania

Eligibility: Domestic and International students with First Class or Second Uppers Honours/ Masters or equivalent

Submission dates for applications are listed on <http://www.utas.edu.au/arc-forest-value/phd-project-opportunities>

About the Centre

This research project is part of the ARC Centre for Forest Value. The Training Centre will build the capacity to shift the forestry and wood products sector from a traditional, resource driven, low-technology base to a market-driven, precision-manufacturing focused industry that applies modern technologies and business approaches to the value chain from germplasm to commercial buildings and from production to restoration plantings.

Learn more at www.utas.edu.au/arc-forest-value



Project Overview

This project aims to enhance plantation productivity and profitability of Australia's main plantation species by better matching genotypes to environments and silviculture. It will link closely with partner breeding and seed production programs. It aims to determine:

1. Patterns of genotype-by-environment interactions to better define germplasm deployment zones;
2. The sustainability of genotype performance under multi-rotation coppice regimes; and
3. The genetic opportunities and trade-offs amongst traits affecting industrial objectives (e.g. for chip, pulp, timber, engineered wood products and energy production) and risk traits (drought/pest/disease risk)

Specific Project

This specific project will use multi-site progeny trials across the *E. nitens* plantation estate in Tasmania to study (i) the relative importance of site and genetic effects and (ii) the importance of genotype by environment interactions on product critical traits and productivity.

The project will include assessment of the importance of within site heterogeneity compared with broad-scale between site variation across the plantation estate. It will model site and GxE effects with reference to the environmental surfaces to allow better site matching of species and families to sites. A particular focus will be on linking genotype performance to site cold susceptibility, and trade-offs among cold adaptation, growth, pest susceptibility and traits affecting product value.

The ARC Industrial Transformation Training Centre for Forest Value is supported from the Australian Research Council's Industrial Transformation Training Centres scheme (project number IC150100004).

To submit an expression of interest or for general information, please contact the Centre for Forest Value at forest.value@utas.edu.au

For information related to this project please contact Professor Brad Potts Brad.Potts@utas.edu.au or Professor Mark Hunt Mark.Hunt@utas.edu.au for more information.

Partner Organisations

