

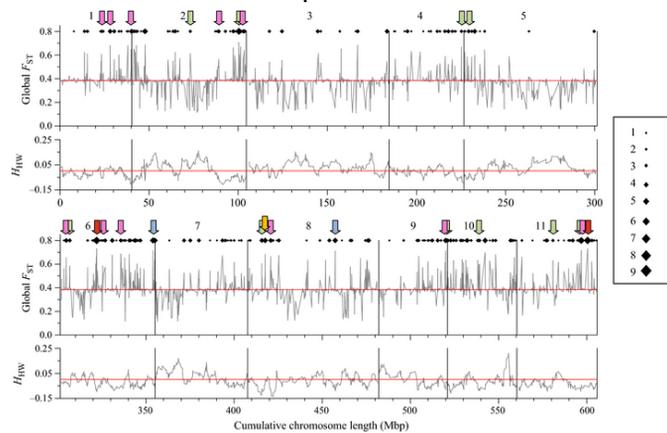
# Genomic patterns of lineage, species and population divergence in eucalypts

- Latest genomic technologies
- International collaboration (S. Africa)
- Generous ARC-funded running costs

Determining the genomic regions contributing to reproductive isolation and phenotypic differences among species is a primary goal of evolutionary research. New developments in genomic technologies now greatly facilitate research in this area. In particular, the recent availability of a reference genome sequence and many thousands of sequence anchored markers now allows precise identification of regions of the genome which differentiate different taxa. An examination of how these regions relate to other features of the genome, such as recombination rate and diversity can then provide important insights into the genomic signatures of natural selection within and between species.

This project will use existing phylogenies and new SNP data to determine the genomic patterns of differentiation within and among seven major eucalypts, and how this relates to diversity and recombination rate. The use of six of the nine most commercially important eucalypts worldwide, plus the most frost tolerant eucalypt, the Tasmanian endemic cider gum *E. gunnii*, will provide important information relevant to tree breeding.

Part of this project can be packaged as an Honours project.



Genomic positions of section differentiating markers, Hudson et al. 2015

**Eligibility (for PhD):** Domestic and International students with First Class or Second Uppers Honours / Master's degree or equivalent in genetics, genomics, ecology, bioinformatics or related disciplines. Domestic students will need to apply to UTAS for an APA or equivalent Scholarship, while international students will need to apply for a UTAS International Scholarship.

The **Eucalypt Genetics Group at UTAS**, led by Profs Potts and Vaillancourt, has a world-class interdisciplinary research programme that investigates the evolutionary and ecological forces that shape diversity in Eucalyptus. The Group consistently publishes in high impact journals, with recent publications in *Nature*, *New Phytologist* and *Molecular Biology and Evolution*. The group collaborates with other universities and research institutions in Australia and internationally that can bring other skills to a supervisory team.

Learn more at [www.eucalyptgenetics.com](http://www.eucalyptgenetics.com)



## For more information about this project please contact:



Prof. Brad Potts  
[B.M.Potts@utas.edu.au](mailto:B.M.Potts@utas.edu.au)



Prof. Rene Vaillancourt  
[Rene.Vaillancourt@utas.edu.au](mailto:Rene.Vaillancourt@utas.edu.au)



Dr. Jules Freeman  
[Jules.Freeman@utas.edu.au](mailto:Jules.Freeman@utas.edu.au)



Dr. Rebecca Jones  
[Rebecca.Jones@utas.edu.au](mailto:Rebecca.Jones@utas.edu.au)