

ARC Centres of Excellence Program

ARC Centre for Kangaroo Genome

Director **Professor J Graves**

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The University of Melbourne
Macquarie University
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Australian Genome Research Facility

Comparative genetics is a powerful method for identifying the genetic origins of the similarities and differences between species. Mammalian genomes, of say the human and the mouse, differ to a remarkably small degree, reflecting both the ubiquity of the biological processes encoded in the common genes, and the potency of the dissimilar genes to produce phenotypic variation and speciation. The evolutionary relationship between mammals (and humans in particular) and marsupials is sufficiently distant that comparative genetic studies offer tremendous opportunities for understanding the organisation, function and evolution of the human and mammalian genome.

The Centre's research program aims to target the Tammar Wallaby, the program would ensure that Australian researchers are among the leaders of the large-scale, US-based program that would undertake the sequencing, probably at the Genome Sequencing Centre at Washington University, St Louis (at a cost of approximately \$US300M). The potential benefits of the research include deeper understanding of human genetics, particularly genetic diseases, as well as outcomes for marsupial genetics that would assist in the protection and sustainable management of Australia's marsupials.