Examples of *Discovery* Projects commencing in 2014

**Tasmania**

Tasmanian universities will receive more than $3.8 million through the Australian Research Council *Discovery Projects* scheme for 13 new research projects commencing in 2014.

Some examples of the TAS projects are provided below.

To view the summaries of all successful projects, visit the [ARC announcements page](#).

**University of Tasmania**

**Lead Chief Investigator:** Professor Lawrence Forbes (DP140100094)

**Summary:** This project studies how fluid flows out from a small concentrated object into a second surrounding fluid. New solution methods will be provided, and new results about how these fluid flows evolve will be obtained. These are important problems with significance in modelling underwater explosions. They are also important in astrophysics, and will help explain the shapes of outflows from some stars or galaxies. The outcomes of the project will be a deeper mathematical understanding of which outflow shapes are stable, and under what circumstances they might become unstable. This will provide valuable information about galaxy shapes, and a new suite of computational methods for solving such problems.

**ARC funding:** $300 000 over three years

**University of Tasmania**

**Lead Chief Investigator:** Dr Gregory Jordan (DP140100307)

**Summary:** How Australia came to be dominated by open, tough-leaved vegetation is an old but still highly controversial question, especially with recent developments in molecular biology that challenge paradigms established from the fossil record. The project will test this new molecular paradigm with innovative use of characteristics of fossil leaves to identify the timing and drivers of the evolution of Australia’s open vegetation. The integration of new and rigorous evidence derived from living and fossil plants will provide the clearest evidence yet for the origins of Australian environments. This has ramifications for understanding plant responses to past and future climate changes.

**ARC funding:** $347 000 over three years

**University of Tasmania**

**Lead Chief Investigator:** Professor Reginald Watson (DP140101377)

**Summary:** Seafood production is an important part of Australia’s economy and future food security. In a dual relationship, fisheries are both vulnerable to and a cause of changes in the marine environment. This project will identify the maximum limits to Australian seafood production and will determine the impacts of future perturbations. To achieve this, the project will: combine existing rich historical data sources with state-of-the art ecosystem and fisheries models; analyse environmental impacts that will complement national fisheries stock assessments that are essential for future competitive exports; and determine our growing seafood imports and their role in Australia’s and the world’s food security.

**ARC funding:** $223 142 over three years