

Media Release

Chiefs of Staff, News Directors

Wednesday 5 November 2014

From molecular brain cell networks to giant ocean storms: University secures millions for new research

The University of Tasmania has secured more than \$9 million to research molecular cell networks in the human brain, giant ocean storms far from land and more than a dozen other subjects big and small.

The funding, announced as part of the Australian Research Council's (ARC) latest round of grants, will generate more than \$15 million in direct economic activity for Tasmania.

Deputy Vice-Chancellor Research Professor Paddy Nixon said the University received five Discovery Early Career Researcher Awards (DECRA), 12 Discovery Project grants and two Linkage Infrastructure, Equipment and Facilities grants.

"This is a good result that recognises the outstanding researchers we have here in Tasmania and the important work they are pursuing," Professor Nixon said.

"We are committed to research excellence at the University of Tasmania and to developing ideas and creating knowledge that benefits the global community.

"A small sampling of the projects funded in this latest grant round shows we are delivering on that commitment."

The five DECRA are worth between \$670,000 and \$1,120,000 each over three years and will fund research in areas including the ethics of new, invasive biomedical brain technologies including 3D printed biomaterials and how the mixing in the Southern Ocean affects the climate.

"These grants support the young researchers and discoveries of tomorrow - they are an investment in the future of our University," Professor Nixon said.

The two Infrastructure grants will fund geophysical equipment to study the response in the Earth's crust and upper mantle to the shedding of ice in Antarctica as well as broadband receivers for geodetic and astronomical applications.

This second project, worth \$1,523,077, will allow for more accurate measurements of changes in sea levels and well as determining the structure of our Milky Way Galaxy.

The 12 Discovery Project grants are worth between \$300,000 and \$1,162,632 and include research projects such as:

- The role of “hot spot” volcanoes in supplying iron to surface waters and thus linking the solid earth and the biosphere, led by Associate Professor Andrew Bowie, (\$406,533).
- Develop a new cell culture platform to form defined molecular networks of brain cells to help understand changes within cells in response to physical damage to networks of brain cells. Such damage is identified as a risk factor for a range of neurodegenerative diseases including Alzheimer’s, Parkinson’s and motor neuron disease. Led by Professor Michael Bredmore, (\$595,248).
- Developing strong mathematical models to examine how DNA evolves to underpin accurate pictures of evolutionary history. Led by Associate Professor Barbara Holland, (\$458,997).
- How carbon dioxide increases provide opportunities for increased agricultural productivity, led by Associate Professor Mark Hovenden, (\$426,195).
- Laser-based analysis of trace elements in past oceans, producing temporal variation curves for 25 trace elements in seawater over the last 3.5 billion years. Outcomes will assist in the discovery of new deposits of zinc, copper, gold and iron ore. Led by Professor Ross Large, (\$649,485).
- Creation of a new generation of carbon-nanocarbon composite adsorbents for ultra-high-performance liquid chromatography, led by Professor Pavel Nesterenko, (\$451,035).
- Understanding severe ocean storms and their impact on Australia by studying decades of “background noise” recorded continuously by earthquake seismic observatories. Led by Dr Anya Reading, (\$556,728).
- Examining how naturally salt-loving plants utilise external bladders to take up and store excess salt. Salinity is a major environmental hurdle affecting crop production around the world. Led by Professor Sergey Shabala, (\$849,078).

Information released by:

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