



## Examples of new *Discovery Projects* in 2010

### Victoria

#### **The University of Melbourne** (Contact: 03 8344 4123)

*Robotic gait assistive strategy for people with paraplegia: Generating balanced and human-like gait on a bipedal system* (DP1093476)

**Summary:** The outcomes of the project will contribute significantly to the fundamental understanding of bipedal mechanisms, robotics, and the dynamics of human gait. This research is unique in Australia and it will strengthen Australia's research standing in robotics and health-sciences. The immediate application of the outcomes will contribute significantly to the musculoskeletal and psychological health of people with spinal cord injury, as well as the basic locomotion capability around the house to carry out their daily tasks more independently and conveniently. Hence it will directly contribute to improving their quality of life and substantially reducing health-care costs and carer responsibilities in the community.

*Chief Investigator: Dr Denny Oetomo*

**ARC funding:** \$352,000 over 3 years.

#### **Monash University** (Contact: 03 9903 4840)

*International student safety from crime* (DP1095202)

**Summary:** International education currently generates \$15.5 billion per annum in exports and involves 520,000 students in Australia. Safety from crime is a fundamental requirement of international students and source governments are insisting Australia needs to improve student safety. These demands must be met if Australia is to sustain its level of involvement in the industry. The project will assist this effort and will contribute to Research Priority 4: Safeguarding Australia by helping develop solutions to student crime problems that are tailored to Australia's unique circumstances. The project will help enrich Australia's international reputation and improve the safety of international students and Australian communities.

*Chief Investigator: Professor Christopher Nyland*

**ARC funding:** \$385,000 over 4 years

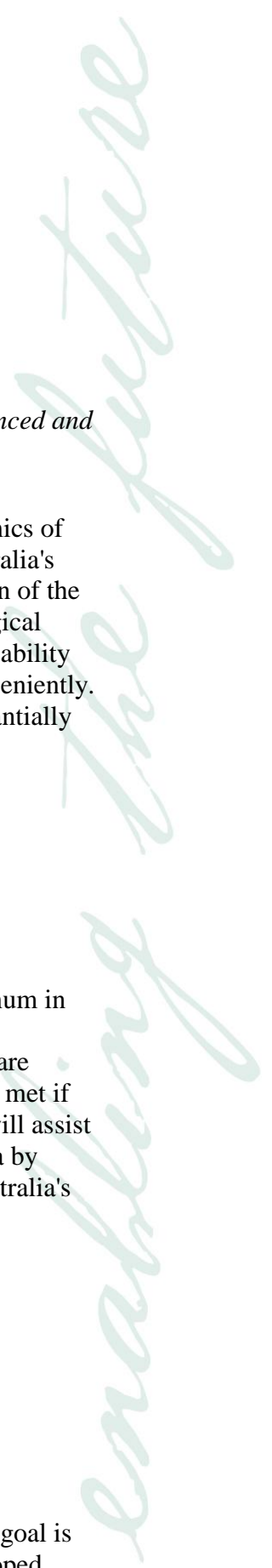
#### **La Trobe University** (Contact: 03 9479 5246)

*Creation of a non-venomous honey bee* (DP1092501)

**Summary:** On average, two Australians die from bee stings each year. Our goal is produce honey bees that do not have a dangerous sting. The methods developed could have significant impact on honey bee research and breeding.

*Chief Investigator: Professor David Vaux*

**ARC funding:** \$220,000 over 3 years





**Swinburne University of Technology** (Contact: 03 9214 5968)

*A theoretical understanding of galaxy assembly and black hole evolution across cosmic time (DP1095506)*

**Summary:** This research will establish Australia as a centre for cutting edge galaxy formation modeling. To achieve its science goals, we will make publicly available the world's largest cosmological simulation of dark matter and galaxy evolution. We will design and deploy an online web portal within which custom galaxy formation models can be constructed by anyone in the community for their own work. Support for this project will strengthen theoretical astronomy in Australia at a time when increased theoretical infrastructure is needed to fully capitalise on Australia's significant observational investments.

*Chief Investigator: Dr Darren Croton*

**ARC funding:** \$725,000 over 5 years.

**Deakin University** (Contact: 03 5227 2776)

*Vietnam: Heritage of a Nation (DP1095121)*

**Summary:** This project will contribute to our understanding of Vietnam's cultural history and to protection of Vietnamese cultural heritage. The findings will be relevant to the work of the United Nations Educational, Scientific and Cultural Organisation (UNESCO) and national industry bodies and to professional organisations such the International Council on Monuments and Sites (ICOMOS). The project may lead to the addition of new items to UNESCO and Vietnamese heritage registers (both tangible and intangible) for the benefit of the global community at large. The project will enhance Australia's reputation in the region as a producer of innovative approaches to heritage conservation and will strengthen the 'Asia literacy' of Australian heritage professionals. The project fits the ARC's research priority goal 'Understanding Our Region'.

*Chief Investigator: Professor William Logan*

**ARC funding:** \$63,000 over 2 years

**Monash University** (Contact: 03 9903 4840)

*Paper fluidics - A novel approach to low cost printable microsensors (DP1094179)*

**Summary:** Printing is perhaps the cheapest means of mass production available, yet it is used almost exclusively to mass produce only one thing, i.e. the printed word! This project will enable the development of disposable printed sensors for assessing the quality of water or the health of an individual. Sensors are generally relatively expensive, but the ability to print them on paper by the thousand will bring down the cost to a few cents. Such cheap, portable, easy-to-use sensors if widely available could profoundly affect the lives of people living in remote areas and developing countries.

*Chief Investigator: Dr Wei Shen*

**ARC funding:** \$500,000 over 3 years

