

**Western Australia**

**Murdoch University**

**DP0774125** Prof B Barber; Prof J Eccles

**Approved Project Title** **The role of extracurricular activity participation in promoting healthy development of Australian youth**

**2007 :** \$55,056

**2008 :** \$65,000

**2009 :** \$65,000

**Primary RFCD** 3801 PSYCHOLOGY

**Administering Organisation** Murdoch University

**Project Summary**

Organized extracurricular activities such as sport and art have the potential for promoting healthy development and reducing the risks faced by teenagers. However, current research evidence, often based on middle-class youth in the US, is inadequate for making policy recommendations for improvement to the after-school lives of Australian youth. This study will offer insight into the importance of making a diverse selection of organized activities available to Australian teenagers, and will improve our understanding of which aspects of participation are most likely to enhance their social and educational opportunities.

**DP0771153** Prof I Bray

**Approved Project Title** **Matter-antimatter interactions**

**2007 :** \$77,030

**2008 :** \$77,030

**2009 :** \$77,030

**2010 :** \$77,030

**2011 :** \$77,030

**Primary RFCD** 2403 ATOMIC AND MOLECULAR PHYSICS; NUCLEAR AND PARTICLE PHYSICS; PLASMA PHYSICS  
APF Prof I Bray

**Administering Organisation** Murdoch University

**Project Summary**

Much of the light that we see is either due to or is influenced by collisions between particles on the atomic scale. The understanding of astronomical observations, the Sun, or our atmosphere is underpinned by the knowledge of atomic collisions. They are also critical in the development of fusion, lasers and lighting sources generally. Interactions with antimatter have additional applications in the medical and material sciences. For example, positron collisions with matter are used in Positron Emission Tomography (PET) scans and in surface analysis.

**DP0771971** Dr M Bunce

**Approved Project Title** **Ancient DNA as a tool to study Australia's paleome: exploring climatic change, past biodiversity, extinctions and long-term survival of DNA.**

**2007 :** \$63,000

**2008 :** \$69,000

**2009 :** \$60,000

**Primary RFCD** 2707 ECOLOGY AND EVOLUTION

**Administering Organisation** Murdoch University

**Project Summary**

Restoration of Australian ecosystems can only occur if we know what plants, animals and insects used to live in the area before 'pest' species were introduced. This project will use ancient DNA obtained from 'poo' and cave sediments, that is thousands of years old, to discover what species used to live where and when. The ancient DNA profiles of past ecosystems will allow us to make better decisions when trying to establish sustainable and 'natural' mainland and island sanctuaries. Ancient DNA is well preserved in some dry environments; this project will assess DNA preservation from sites all across Australia and use the DNA sequences to discover information about extinct animals and how past climate changes effected the native biota.

## Summary of Discovery Projects Proposals for Funding to Commence in 2007

**DP0771097** Prof MG Jones; Dr R Jones

**Approved Project Title** **Molecular dissection of resistance to subterranean clover mottle virus using Medicago truncatula**

**2007 :** \$100,000

**2008 :** \$100,000

**2009 :** \$100,000

**Primary RFCD** 3002 CROP AND PASTURE PRODUCTION

**Administering Organisation** Murdoch University

### **Project Summary**

Plant virus diseases cause economic losses in most crop plants. Grain and pasture legumes are an important component of Australian agricultural cropping systems, and provide human food and animal feed: they also contribute to higher yields of crops like cereals when grown in rotation, by providing nitrogen and a disease break. In this project, the 'model' legume, *Medicago truncatula* ('Barrel Medic') will be used to identify a new virus resistance gene. The knowledge gained will be used to improve resistance to viruses in crop legumes, so reducing losses and aiding sustainability of production. This will support rural communities and the national economy.