

Summary of Discovery Projects Applications for Funding to Commence in 2006

Northern Territory

Charles Darwin University

DP0665020 Dr J Mitroy

Approved Project Title Application of variational methods in atomic and molecular physics

2006 : \$68,000

2007 : \$75,000

2008 : \$76,000

Primary RFCD 2403 ATOMIC AND MOLECULAR PHYSICS; NUCLEAR AND PARTICLE PHYSICS; PLASMA PHYSICS

Administering Institution Charles Darwin University

Project Summary

Atomic physics is both a basic and an enabling science and this project will improve fundamental knowledge about the interactions of electrons and positrons with atoms and molecules. Research will be directly relevant to the activities of the National Positron Beam-Line (located at the Australian National University) which is directed to break-through research in matter-antimatter interactions and materials characterisation.

DP0662946 Dr IM Wanless; Dr DE Bryant

Approved Project Title Analysis of the structure of latin squares

2006 : \$86,000

2007 : \$76,000

2008 : \$76,000

2009 : \$56,000

2010 : \$56,000

Primary RFCD 2301 MATHEMATICS

QEII Dr IM Wanless

Administering Institution Charles Darwin University

Project Summary

The benefits to Australia of fundamental research in core disciplines such as mathematics are well documented. Discrete mathematics and combinatorics are boom disciplines of the computer age and this project seeks new knowledge concerning basic building blocks of combinatorial mathematics. The outcomes will be of interest to theoretical discrete mathematicians around the world, enhancing Australia's already high research profile in this important area of pure mathematical research. Importantly, the problems under investigation offer substantial opportunity for excellent postgraduate training, critical for the future of Australian research.