University of Wollongong

LX0881933 Prof MM Olsson; Prof S Edwards; Dr GA Nevitt; Dr TW O'Dwyer

Approved Project Title **The major histocompatibility complex and scent-mediated mate choice in a Procellariiform, Gould's petrel**

2008 : $ 92,198

Primary RFCD 2702 GENETICS

Collaborating Countries

Administering Organisation University of Wollongong

Project Summary

In Australia, there are 25 species of Procellariiformes listed as threatened or endangered under the Environment Protection and Biodiversity Conservation Act 1999. Formulating comprehensive conservation plans for endangered species requires a good understanding of the species' breeding biology yet virtually nothing is known about the mechanisms involved in mate choice in the procellariiforms. A better understanding of the traits these long-lived birds use when choosing their lifelong breeding partner could greatly benefit conservation strategies designed to protect them. This could be particularly beneficial where translocation is an option because birds being translocated could be assessed for compatibility prior to translocation.

LX0881953 Prof MR Wilson; Mr JJ Yerbury; Prof CM Dobson; Dr DC Crowther; Dr JR Kumita

Approved Project Title **The effects of alpha-2-macroglobulin on amyloid formation and toxicity**

2008 : $ 92,476

Primary RFCD 2701 BIOCHEMISTRY AND CELL BIOLOGY

Collaborating Countries

Administering Organisation University of Wollongong

Project Summary

The expected outcomes will provide major advances in understanding how the abundant human blood protein alpha-2-macroglobulin influences the formation of protein aggregates that underpin a number of serious diseases (e.g. Alzheimer's disease). The linkages involved are of the highest calibre and will give the Fellowship holder a unique opportunity for training in environments that are truly internationally leading-edge. Furthermore, the very high novelty and broad significance of this work indicate that it will produce high-impact publications which will tangibly assist Australia being recognized as a major contributor to international research outcomes of the highest quality.

LX0881899 Prof C Zhang; Prof F Liu

Approved Project Title **Design and Creation of Nanomechanical Architectures from Folding of Ultrathin Bi-layer Films**

2008 : $ 117,972

Primary RFCD 2918 INTERDISCIPLINARY ENGINEERING

Collaborating Countries

Administering Organisation University of Wollongong

Project Summary

The project will achieve progress in designing, modelling, analyzing, and characterization of nanomechanical architectures that will have broad application in Australian science and industry. If successful, our research will revolutionize nanofabrication technology and nano-design methods. The project will lead to a scientific understanding of atomic interaction and stress field effect in the formation of nanosystems. The result of this research will significantly lower fabrication costs and enhance the potential of nanomaterials in various areas such as electronics and bioelectronics, telecommunication, medical instrumentations, and pharmaceutical design.