

Queensland

University of Southern Queensland

DP0988738 Prof AJ Roberts; Dr D Strunin

Approved Project Title **Effective and accurate model dynamics, deterministic and stochastic, across multiple space and time scales**

2009 : \$ 115,000

2010 : \$ 100,000

2011 : \$ 100,000

Primary RFCD 2918 INTERDISCIPLINARY ENGINEERING

Administering Organisation University of Southern Queensland

Project Summary

A persistent feature of complex systems in engineering and science is the emergence of macroscopic, coarse grained, coherent behaviour from the interactions of microscopic agents (molecules, cells, grains) and with their environment. In current modeling, ranging from ecology to materials science, the underlying microscopic mechanisms are often known, but the closures to translate microscale knowledge to a system level macroscopic description are rarely available in closed form. Our novel methodology will explore this stumbling block, and promises to radically change the modeling, exploration and understanding of multiscale complex system behaviour.

DP0988465 Dr H Wang

Approved Project Title **Limiting disclosure of private information in relational database systems**

2009 : \$ 85,000

2010 : \$ 80,000

2011 : \$ 80,000

Primary RFCD 2801 INFORMATION SYSTEMS

Administering Organisation University of Southern Queensland

Project Summary

Enterprises are deeply concerned about customers' privacy issues and try to build solid trust to attract customers. This project continues development of new purpose-based frameworks and private information assurance requirements in relational database systems. The frameworks will identify and address issues of protecting private information; and to specify and enforce privacy rules to support identified issues. It aims to develop techniques for purpose-based usage control and detecting possible conflicts between obligations. The approach leads to a great understanding of advocating limited disclosure in usage control systems. The project develops fundamental enabling methodologies for the information and communication industry.