

Financial Summary

The School was extremely successful in obtaining funding through the Australian Research Council's competitive grants schemes, thus the financial strategy in 2003 focused on consolidation and up-grading of resources required to support both the new and on-going research. Two new positions – dedicated to overseeing the safety and operation of laboratories facilities and building plant and equipment – were established. Several items of new equipment were purchased, and the ongoing programme of expenditure on small to medium items of research and IT equipment to replace old and obsolete items was continued. In addition increased funding for PhD scholarships has resulted in an over 50% increase in the total number of PhD students in the School

In addition to recurrent income, the research contracts with biotechnology companies Progen Industries Ltd. and Lipotek Pty. Ltd continued throughout the year. Funding was also received through the Australian Research Council's Discovery and Linkage Schemes plus from a variety of other external sources, details of which are given below. In addition the School continues to make patent applications for work carried out by several of the research groups, and work is undertaken by the microanalytical unit, the mass spectrometry unit, and the glass and mechanical workshops for external clients.

Outside Grants and Contracts

The annual recurrent grant for the School (\$10,641,000) was supplemented by external income (\$5,726,942). The recipients and sources of external grants are listed below:

** denotes a new grant in 2003

Biochemical Reactions and Molecular Recognition

Professor C.J. Easton
Synthesis of nitrilotriacetic acid compounds
Lipotek Pty Ltd, July 2002–July 2003

Professor C.J. Easton **
Amino acid and peptide radicals in biochemistry and synthesis
Australian Research Council, Discovery-Projects, January 2003–December 2005

Professor C.J. Easton **
Platform technology for new pharmaceuticals
ACT Government, March 2003–March 2004

Professor C.J. Easton and Dr M. Casarotto **
Synthetic compounds to specifically activate or inhibit ryanodine receptor calcium ion channels, Australian Research Council and Biotron Ltd., Linkage-Projects, January 2003–December 2005

Biomolecular NMR

Professor G. Otting
New methods for structural biology in solution
Australian Research Council, Federation Fellowship, January 2002–December 2006

Professor G. Otting **
New methods for structural biology in solution
Australian Research Council, Discovery-Projects, January 2003–December 2007

Professor G. Otting **
800Mhz NMR spectrometer for molecular structure-function analyses
Australian Research Council, Linkage Infrastructure (Equipment and Facilities), January 2003–December 2003

Professor G. Otting and Dr N.E. Dixon **
Enabling technologies for structural genomes
Australian Research Council, Discovery-Projects, January 2003–December 2005

Biomolecular Simulations and Calculations

Dr A. Torda
Australian Partnership for Advanced Computing, July 2000–June 2003

Computational Quantum Chemistry

Dr M.L. Coote
Hydrogen abstraction in chemical, biochemical and polymerisation processes
Australian Research Council, Postdoctoral Fellowship, June 2002–June 2005

Professor L. Radom
Australian Partnership for Advanced Computing, July 2000–June 2003

Coordination Chemistry and Spectro-electrochemistry

Dr G.A. Heath **
Redox-modulation of metal-metal bonding (Visit to Photon Factory, Japan)
Australian Synchrotron Research Program, November 2003

Disordered Materials

Professor T.R. Welberry **
Development of methods and strategies for the measurement, interpretation and analysis of diffuse X-ray scattering from disordered materials
Australian Research Council, Discovery-Projects, January 2003–December 2005

Professor T.R. Welberry **
Diffuse neutron scattering benzil (Visit to ISIS Facility, UK) Access to Major Research Facilities Program, April 2003

Finance

Professor T.R. Welberry **

Diffuse scattering from crystals containing flexible organic molecules (Visit to Advanced Photon Source, Chicago) Australian Synchrotron Research Program, November 2003

Professor T.R. Welberry, Dr R.L. Withers, Professor A. Pring and Dr N. Ishizama **

The effects of local strain on the crystal structure of solid solutions
Australian Research Council, Discovery-Projects, January 2003-December 2005.

Electrochemistry

Dr R.D. Webster

In situ electrochemical NMR spectroscopy

Australian Research Council, Queen Elizabeth II Fellowship, June 2001–June 2006

Inorganic Stereochemistry and Asymmetric Synthesis

Professor S.B. Wild **

Asymmetric synthesis of chiral phosphines, arsines and stibines

Australian Research Council, Discovery-Projects, January 2003-December 2005

Professor S.B. Wild **

Asymmetric synthesis of chiral phosphines and arsines

Australian-German Joint Research Cooperation Scheme, June 2003

Laser and Optical Spectroscopy

Professor E.R. Krausz **

New generation metalloenzyme MCD spectrometer systems

Australian Research Council, Linkage Infrastructure (Equipment and Facilities), January 2003-December 2003

Liquid State Chemical Physics

Dr E.M. Sevick and Professor D.J. Evans**

Experimental demonstrations of violations of the Second Law of Thermodynamics

Australian Research Council, Discovery-Projects, January 2003-December 2005

Organic Synthesis

Professor L.N. Mander **

Preparation of photo-affinity molecular probes for the identification of gibberellin receptors

Australian Research Council, Discovery-Projects, January 2003-December 2005

Organic Synthesis, Methodology and Host-Guest Chemistry

Dr M.S. Sherburn **

New cascade routes to biologically important molecules

Australian Research Council, Discovery-Projects, January 2002-December 2004

Dr M.S. Sherburn and Professor M. Paddon-Row**

New horizons in Diel-Alder chemistry

Australian Research Council, Discovery-Projects, January 2003-December 2005

Polymers and Soft Condensed Matter

Dr E.M. Sevick and Professor D.J. Evans **

Experimental demonstrations of violations of the Second Law of Thermodynamics

Australian Research Council, Discovery-Projects, January 2003-December 2005

Protein Crystallography and Engineering

Dr D.L. Ollis **

Directed evolution used to probe protein structure and Function: new enzymes for bio-remediation and industry

Australian Research Council, Discovery-Projects, January 2003-December 2005

Protein Synthesis and Evolution

Dr N.E. Dixon, Dr E. Liepinsh and Dr J. Carazo

Structures and functions of bacterial replisomal proteins Australian Research Council, Discovery-Projects, January 2002-December 2004.

Dr N.E. Dixon and Professor G. Otting **

Enabling technologies for structural genomes

Australian Research Council, Discovery-Projects, January 2003-December 2005

Dr K. Ozawa **

Subunit contacts in the replicative DNA polymerase: A new paradigm for protein-protein interactions Australian Research Council, Linkage-Postdoctoral Fellowship (CSIRO),

October 2003-October 2006

Solid State Inorganic Chemistry

Professor R.L. Withers, Professor T.R. Welberry, Professor A. Pring and Dr N. Ishizama**

The effects of local strain on the crystal structure of solid solutions

Australian Research Council, Discovery-Projects, January 2003-December 2005

Solid State Molecular Science

Dr M.J. Henderson **

Model milk fat membranes and self-assembled metal oxide films at the air-water

Finance

interface (Visit to ISIS Facility, UK) Access to Major Research Facilities Program, November 2003

Professor V.J. James **

A study of changes in the diffraction patterns of human and baboon hair with disease (Visit to Advanced Photon Source, Chicago) Australian Synchrotron Research Program, April 2003

Professor V.J. James **

A study of changes in the diffraction patterns hair with disease (Visit to Advanced Photon Source, Chicago) Access to Major Research Facilities Program, June 2003

Mr A. Perriman **

Protein behaviour at interfaces Australian Institute of Nuclear Science and Engineering Student Award, July 2003-June 2004

Dr P.A. Reynolds **

Oil and water emulsions and microemulsions (Visit to NIST Facility, USA) Access to Major Research Facilities Program, September 2003

Professor J.W. White **

Emulsion stability and the liquid/liquid interface (Visit to ISIS Facility, UK) Access to Major Research Facilities Program, July 2003

Professor J.W. White and Dr S.A. Holt

The nanoscale structure of milk: stability implications for milk products Dairy Research and Development Program, January 2001–June 2004

Professor J.W. White, Dr P.A. Reynolds, Dr R.J. Goodridge and Dr C. Such

High internal phase emulsions – structure and rheology control Australian Research Council and ORICA Australia Ltd., Linkage-Projects, January 2002–December 2004

Synthesis and Mechanism

Professor M.G. Banwell

Progen phase III synthesis and identification of novel, heparinoid mimetics and development of the heparanase enzyme as diagnostic and therapeutic target Progen Industries Ltd, October 2002–September 2005

Professor M.G. Banwell

Generation and exploitation of fermentation products in the chemical synthesis of biologically active compounds with therapeutic potential Australian Research Council, Discovery-Projects, January 2002–December 2004

Professor M.G. Banwell **

Development of chemoenzymatic methods for the selective elaboration of polyfunctionalised therapeutic agents to oligomers with improved efficacy Australian Research Council and Biota Holdings Ltd, Linkage-Projects, December 2003–December 2006

Professor M.G. Banwell and Mr X.H. Ma

Chemoenzymatic synthesis of novel sialic acid analogues related to the potent anti-

influenza drug Relenza

Australian Research Council and Biota Holdings, February 2000–January 2003

Dr B.D.K. Kelly

Chemoenzymatic routes to spinosyns – a new environmentally benign class of insecticides

Australian Research Council, Postdoctoral Fellowship, January 2001–May 2003

Synthetic Organometallic and Coordination Chemistry

Professor A.F. Hill **

Metallaboranes: Soft scorpionates and masked metal bases

Australian Research Council, Discovery-Projects, January 2003–December 2005

Theoretical Chemical Physics

Professor M.A. Collins

Australian Partnership for Advanced Computing, July 2000–June 2003