

Appendix – Honours and Awards

Dr Tristram Alexander has been awarded an Australian Academy of Science Young Researchers travel award to visit the USA.

Dr Ken Baldwin was awarded the Australian Government Eureka Prize for Promoting Understanding of Science, Australia Museum, August 2004. (see photo below)

Professor Murray Batchelor was elected Fellow of the Institute of Physics, UK.

Ms Anna Carnerup was awarded the Robert and Helen Crompton Scholarship for travel, which was used to attend the 8th International Conference of Bioastronomy held in Reykjavik, Iceland, in July.

Professor Lewis Chadderton has been appointed to represent Australia on the Board of COMSATS, a United Nations/World Bank/ IMF Commission on Science and Technology for Sustainable Development in the South.

Professor George Dracoulis was presented with the 2003 Lyle Medal of the Australian Academy of Science and gave a brief lecture at the Annual General Meeting in May 2004, an occasion which also marked the 50th Anniversary of the Academy. He was also awarded the 2004 Boas Medal for his outstanding contributions to the understanding of nuclear structure. The medal is awarded by the Australian Institute of Physics, under the auspices of the Victorian branch, for original research in the five years prior to the date of the award. The award was established to promote excellence in Physics in Australia and to perpetuate the name of Walter Boas.

Dr Mahananda Dasgupta was selected as the Australian Institute of Physics, Women in Physics Lecturer for 2004. The Selection Committee was very impressed with Mahananda's excellent achievements as a physicist as well as her commitment and interest to service and outreach activities. Mahananda was also elected as a Fellow of the Australian Institute of Physics.

Mr Drew Evans was awarded the Healy-Hunter Prize for most outstanding oral presentation at 24th Australian Colloid and Surface Science Student Conference.

Mr Thomas Hanna was awarded the General Sir John Monash Award, enabling his DPhil studies at Oxford University.

Ms Christine Henry was awarded Bachelor of Science with First Class Honours and received the University Medal working jointly in the Department of Applied Mathematics and the Department of Chemistry, the Faculties. She also won the Centre of Science and Engineering Materials (CSEM) Best Undergraduate Final Year Thesis in the

Field of Science and Materials. Christine is completing her law studies at ANU in 2004 and plans to return to the Department as PhD student in 2005.

Dr John Howard has been elected as a Fellow of the Institute of Physics.

Professor Stephen Hyde was awarded a Federation Fellowship.

Professor C. Jagadish was elected as a Fellow of the Optical Society of America. He is being recognized for "Seminal Contributions to III-V Compound Semiconductor Optoelectronics and Optoelectronic Device Integration".

Mr Bernt Johannessen has received an intern scholarship from the Australian Synchrotron Research Program to undertake three months training at the Advanced Photon Source in Chicago, USA.

Dr Patrick Kluth won the IBMM Poster Award at the 14th International Conference on Ion Beam Modification of Materials, Monterey, USA in September.

Dr Mark Knackstedt was appointed a Visiting Professor at the School of Petroleum Engineering, University of New South Wales.

Ms Pearl Louis has been offered an Australian Academy of Science JSPS Postdoctoral Fellowship for Foreign Researchers to conduct research in Japan.

Dr Dragomir Neshev has been awarded an Australian Academy of Science travel grant to the USA.

Professor Barry Ninham was awarded a distinguished Humboldt Professorship.

Mr Wilson Pok, Honours Student, supervised by Dr J.E. Bradby and Professor R.G. Elliman was a winner of the CSEM Prize.

Dr Mark Ridgway was awarded the Vice Chancellor's Award for Excellence in Supervision

Mr Ilya Shadrivov was awarded the Young Scientist Award at URSI EMT-S, in Pisa, Italy in May. Ilya was also awarded an OSA Bookham travel grant to enable students who present papers to travel to [CLEO](#) and [Frontiers in Optics/OSA Annual Meeting](#) .

Dr Andrey Sukhorukov won an Australia/JSPS exchange grant to visit Japan.

Dr Andrew Truscott was awarded an Australian Academy of Sciences Early Career Researcher Award.



Dr Ken Baldwin (left) at the award ceremony of the Australian Government Eureka Prize for Promoting Understanding of Science.

Appendix – Collaborations and Cooperative Agreements

Collaborations

Professor N. Akhmediev

Project: Soliton as Strange Attractor Nonlinear Synchronization and Chaos

Partner: Dr J. M. Soto-Crespo, Instituto de Óptica, Spain

Project: Group Interactions of Dissipative Solitons in a Laser Cavity: The Case of 2+1

Partner: Dr Ph. Grelu, Université de Bourgogne, France

Project: On the Solution of Multicomponent Nonlinear Schrödinger Equation with Mixed Nonlinearities

Partner: Dr T. Kanna, Bharathidasan University, India

Project: Dissipative Soliton of the Discrete Complex Cubic–Quintic Ginzburg–Landau Equation

Partner: Dr K.-I. Maruno, Kyushu University, Japan

Project: Dynamics and Interaction of Pulses in the Modified Manakov Model

Partner: Dr E. Tsoy, Uzbek Academy of Sciences, Uzbekistan

Dr T. Alexander

Project: Optical Vortices in Nonlinear Photonic Lattices

Partner: Professor Z. Chen, State University San Francisco, USA

Dr C.H. Arns

Project: Second-order Analysis for Curvature Measures

Partners: Professor D. Stoyan, TU Bergakademie Freiberg, Germany; Professor K.R. Mecke, University of Erlangen-Nürnberg, Germany

Project: Transport Properties from Nuclear Magnetic Resonance

Partners: Professor P.T. Callaghan and Mr M. Hunter, University of Wellington, New Zealand

Dr C.H. Arns and Dr M.A. Knackstedt

Project: Elastic Properties of Partially Saturated Rocks

Partners: Professor B. Gurevitch, Curtin University of Technology; Dr R. Ciz, CSIRO Petroleum; Professor S.A. Shapiro and Dr E. Saenger, Freie Universität Berlin, Germany

Project: Virtual Permeametry of Porous Materials

Partner: Dr N. Martys, National Institute of Standards and Technology, USA

Dr T. Aste

Project: Glasses and Granular Materials

Partner: Professor A. Coniglio, University of Naples, Italy

Project: Surface Instabilities and Granular Matter
Partner: Professor U. Valbusa, University of Genoa, Italy

Dr K.G.H. Baldwin

Project: Ultrahigh Resolution OPO Laser Sources
Partner: Professor B. Orr, Macquarie University

Dr K.G.H. Baldwin and Professor B.R. Lewis

Project: High Resolution XUV Laser Spectroscopy of Isotopic Nitrogen
Partner: Professor W. Ubachs, Vrije Universiteit Amsterdam, The Netherlands

Dr R. Ball

Project: A Predictive Model for the Earth's Solar Wind Driven Magnetosphere-ionosphere System
Partner: Professor W. Horton, University of Texas at Austin, USA

Project: Hysteresis Switches as Information Carriers in Biology
Partner: Dr L. Santoso, Mathematical Sciences Institute

Project: Emergent Coherent Structures through Localized Two-dimensional Velocity Fields
Partner: Professor P. Morrison, University of Texas at Austin, USA

Dr F.C. Barker

Project: Low-lying States in ^{11}N
Partner: Dr C. Angulo, Université Catholique de Louvain, Belgium

Dr T.T. Barrows

Project: Glacier History of New Zealand
Partners: Dr P. Almond, Lincoln University, New Zealand; Mr R. Rose, University of Canterbury, New Zealand

Project: Glacier History of Mt Field, Tasmania
Partner: Dr A. Mackintosh, Victoria University of Wellington, New Zealand

Project: Glacier History of Mt Giluwe, Papua New Guinea
Partners: Dr M. Prentice, University of New Hampshire, UK; Professor G. Hope, Research School of Pacific and Asian Studies

Project: Dating of Landslides, Hong Kong
Partner: Dr R. Sewell, Civil Engineering and Development, Hong Kong

Project: Long Term Climate Change from Deep-sea Sediments
Partners: Professor P. De Deckker, Ms M. Spooner, Dr E. Calvo and Dr C. Pelejero, Earth and Marine Sciences; Dr S. Juggins, University of Newcastle, UK

Project: Geomorphology of the Sierra Nevada, Spain

Partners: Mr L. Reinhardt and Professor P. Bishop, University of Glasgow, UK

Professor M.T. Batchelor

Project: Quantum Spin Systems

Partners: Dr Z. Tsuboi, University of Tokyo, Japan; Dr A. Foerster, Instituto de Fysica da UFRGS, Brazil

Project: Integrable Bosons

Partners: Dr J. McGuire, Florida Atlantic University, USA; Dr C. Dunning and Dr J. Link, University of Queensland

Project: Stromatolite Morphogenesis

Partner: Dr R. Burne, Earth and Marine Sciences

Dr A. Bauer

Project: Rod Formation of Ionic Surfactants

Partners: Dr S. Woelki and Dr H.-H. Kohler, University of Regensburg, Germany

Dr B.D. Blackwell and Dr J. Howard

Project: Soft X-ray Measurements on H-1NF

Partner: A/Professor A.D. Cheetham, University of Canberra

Dr G.G. Borg and Professor J.H. Harris

Project: Plasma Antenna Concept Demonstrator

Partner: Dr N.M. Martin, Defence, Science and Technology Organisation

Project: Infrastructure for Wireless Internet Technology Development for Rural Australia

Partners: Ms H.M. Jones, A/Professor A.D. Cheetham and A/Professor J. Rayner, University of Canberra

Dr G.G. Borg and Mr P. Linardakis

Project: Plasma Switches for Mobile Phones

Partner: Dr R. Scheer, Motorola, USA

Dr G.G. Borg and Mr I. McRobert

Project: VHF Wireless Technologies for Last-mile Internet Access in Regional Australia

Partners: Standard Communications, Sydney; NJH Consulting, Newcastle

Professor R.W. Boswell and Dr C. Charles

Project: Helicon Assisted Reactive Evaporation (HARE)

Partners: Professors D. MacKenzie and M. Bilek, University of Sydney

Project: Design and Fabrication of Fuel Cells

Partner: Dr A. Dicks, University of Queensland

Professor R.W. Boswell and Mr O. Sutherland

Project: High Brightness Ion Source

Partner: FEI Company, USA

Dr J. Bradby

Project: International Partnership Program

Partner: University of Michigan, USA

Professor S.J. Buckman

Project: Low Energy Electron-molecule Scattering

Partners: Dr M.J. Brunger and Professor P.J.O. Teubner, Flinders University

Project: Electron Scattering from Molecular Radicals

Partners: Dr M.J. Brunger and Professor W. Lawrance, Flinders University

Project: Electron-molecule Scattering

Partners: Professor H. Tanaka, Sophia University, Japan; Professor H. Cho, Chungnam National University, Korea

Project: Positron Interactions

Partners: Dr A. Hill, CSIRO; Professor B. Lohmann, Griffith University; Professor P.J.O. Teubner and Dr M.J. Brunger, Flinders University; Dr J. Mitroy, Charles Darwin University

Project: Positron Scattering from Atoms and Molecules

Partner: Professor C. Surko, University of California, USA

Professor S.J. Buckman and Professor L.T. Chadderton

Project: Rainbows in Scattering of Electrons from Molecules

Partners: Professor S.A. Cruz, Metropolitan Autonomous University of Mexico, Mexico; Dr A. Tolmachev, Moscow State University, Russia

Dr M. Buda

Project: DFB Lasers

Partners: Dr T.G. van de Roer and Professor Dr G.A. Acket, Eindhoven University of Technology, The Netherlands

Professor A.P. Byrne

Project: Ion Implanter for Radioisotopes

Partner: Dr H. Timmers, ADFA, University of New South Wales

Project: Superalloyed Fermi Decays

Partner: A/Professor P.H. Barker, University of Auckland, New Zealand

Professor A.P. Byrne and Dr M.C. Ridgway

Project: PAC Studies of Materials

Partner: Dr R. Vianden, Universität Bonn, Germany

Dr S.J. Cavanagh

Project: (e,2e) Experiments on Water

Partner: Professor B. Lohmann, Griffith University

Professor L.T. Chadderton

Project: Atomic Force Microscopy of Fission Fragment Irradiated Quartz, Fullerite, Apatite and Natural Opal

Partners: Professor G. Espinosa and Professor S.A. Cruz, Metropolitan Autonomous University of Mexico, Mexico

Project: Phase Changes in Transition Metal Dichalcogenides Due to GeV Heavy Ion, and MeV Fullerene Ion Bombardments: Transmission Electron Microscopy and Surface Force Microscopy

Partner: Dr A. Dunlop, École Polytechnique, France

Project: Radiation Effects on Polymers and Semiconductors

Partner: Dr D. Fink, Hahn-Meitner Institute, Germany

Project: GeV Ion Tracks in Alkali and Alkali Earth Halides

Partner: Dr C. Trautmann, Gesellschaft für Schwerionenforschung, Germany

Project: Annealing of Fission Tracks in Apatite: Kinetics, Effects of Pressure and Applications in Geothermometry

Partners: Dr R. Jonckere, University of Freiberg, Germany; Dr A. Wendt, British Antarctic Survey, UK

Project: Studies of Plasma Effects, and Electronic and Nuclear Vicinage in the Stopping of Swift Clusters in Solids

Partner: Professor S.A. Cruz, Metropolitan Autonomous University of Mexico, Mexico

Project: Theory and Practice of Organic Radical Formation and Motion in GeV Ion-irradiated Polymers

Partner: Professor S.A. Cruz, Metropolitan Autonomous University of Mexico, Mexico

Professor L.T. Chadderton and Dr S.Y. Kun

Project: Studies of Ultrafast Coherent Dynamics of Localised Modes in Many-body Systems

Partners: Professor W. Greiner, University of Frankfurt, Germany; Professor S. Haas, University of Strasbourg, France

Professor L.T. Chadderton and Dr A. Stewart

Project: Radioactivity in the Fine Structure of Precious Opal; Exploration and Artificial Opal Synthesis

Partners: Dr B. Senior, Senior and Associates, Canberra; Dr R. Jonckere, University of Freiberg, Germany

Dr C. Charles and Professor R.W. Boswell

Project: Plasma Deposition of Palladium

Partners: Dr A.L. Thomann and Dr P. Brault, University of Orleans-CNRS, France

Project: Helicon Double Layer Thruster [i

Partners: CRC for Satellite Systems; AUSPACE Limited

Project: Computer Simulation of Low and High Pressure Plasmas

Partner: Dr J.-P. Boeuf, CNRS University of Toulouse

Dr Y. Chen

Project: Control Growth of Carbon Nanotubes

Partner: Professor L. Chadderton, Atomic and Molecular Physics Laboratories

Project: Synthesis of C and BN Nanotubes Using Mechano-thermal Process

Partner: Dr J. Fitzgerald, Research School of Earth Sciences

Project: Microanalysis of BN Nanotubes

Partner: Dr J. Zou, University of Queensland

Project: Mossbauer Analysis of Nanotubes

Partner: Professor G. Le Caer, University of Rennes, France

Project: Mossbauer Study of Metal Catalysts for Nanotube Growth

Partner: Professor S. Campbell, ADFA, University of New South Wales

Ms V. Coleman, Ms P. Lever, Ms K. Stewart, Mr S. Barik, Dr H.H. Tan, Professor J.S. Williams and Professor C. Jagadish

Project: Cathodoluminescence Studies of Semiconductor Epitaxial Layers and Quantum Structures

Partner: Professor M.R. Philips, University of Technology, Sydney

Ms V. Coleman, Dr H.H. Tan, Dr S.O. Kucheyev, Professor J.S. Williams and Professor C. Jagadish

Project: Ion Beam Processing of Zinc Oxide

Partners: Professor M. Yano and Professor M. Inoue, Osaka Institute of Technology, Japan

Dr V. Craig

Project: The Effect of Surfactant Adsorption on Liquid Boundary Slippage

Partner: Professor S. Biggs, University of Leeds, UK

Project: Adsorption Patterns of Mixtures of Trimethylammonium Modified Hydroxyethylcellulose and Sodium Dodecyl Sulfate at Solid-liquid Interfaces

Partners: Professor W. Kunz and Mr D. Zimin, University of Regensburg, Germany

Project: Adsorption and Desorption of Polymer Surfactant Mixtures at Solid Liquid Interfaces: Substitution Experiments

Partners: Professor W. Kunz and Mr D. Zimin, University of Regensburg, Germany

Project: Adsorbed Layer Structure of a Weak Polyelectrolyte Studied by Colloidal Probe Microscopy and QCM-D as a Function of pH and Ionic Strength

Partners: Professor L. Wågberg, Royal Institute of Technology, Sweden; Professor S. Biggs, University of Leeds, UK; Dr S. Notley, University of Newcastle

Project: A Scanning Electron Microscope Study of the Surface Structure of Paper Coating Compositions on Mylar

Partner: Dr J. Daicic, YKI Institute for Surface Chemistry, Sweden

Project: Floc Strength Characterisation Technique: An Insight into Silica Flocculation and Characterising Bond Strength of Aggregates in Suspension

Partners: Professor R. Amal, Dr G. Bushell, Ms M. Hermawan, Ms C. Selomulya and Mr W. Yang Teoh, University of New South Wales

Dr T.D.M. Dall

Project: Heavy Ion Stopping in Solids

Partners: Professor H.J. Whitlow and Dr K. Stenstrom, University of Lund, Sweden; Dr H. Timmers and Mr S. Shrestha, ADFA, University of New South Wales; A. Professor D.J. O'Connor, University of Newcastle

Dr M. Dasgupta

Project: Quantum Tunneling in Nuclear Fusion

Partners: Dr K. Hagino, Kyoto University, Japan; Professor N. Rowley, Strasbourg University, France

Dr M. Dasgupta and Professor D.J. Hinde

Project: Fusion with Radioactive ^{14}O

Partner: Professor S. Kubono, University of Tokyo, Japan

Project: Double Folding Calculation of Nuclear Potentials

Partner: Dr I.I. Gontchar, Omsk State Transport University, Russia

Dr P.N.K. Deenapanray, Dr L. Fu and Professor C. Jagadish

Project: Analysis of Semiconductor and Insulating Thin Films by XPS

Partners: Dr B. Gong and Professor R. Lamb, University of New South Wales

Professor R.L. Dewar

Project: Existence and Stability of a Model for Three-dimensional Toroidal Plasma Equilibria

Partner: Dr S.R. Hudson, Princeton University, USA

Project: Quantum Chaos in the Ideal-MHD Spectrum for Stellarators

Partners: Dr C. Nührenberg, Max Planck Institute for Plasma Physics, Germany, Professor Z. Yoshida, University of Tokyo, Japan; Dr T. Tatsuno, University of Maryland, USA; Professor B. Kenny, University of Western Australia

Project: Variational Principle for Nonlinear Drift Wave Dynamics

Partners: Dr F.L. Waelbroeck and Dr P.J. Morrison, University of Texas at Austin, USA

Professor R.L. Dewar, Dr R. Ball and Professor M.T. Batchelor

Project: ARC Research Network Application – Complex Open Systems Network (COSNet)

Partners: Professor C. Grebogi, University of Sao Paulo, Brazil; Professor R. MacKay, FRS University of Warwick, UK; and 42 participants from the AUSTRALIAN NATIONAL UNIVERSITY and other Australian universities.

Dr T. Di Matteo and Dr T. Aste

Project: Characterisation of Collective Dynamics in Financial Markets and Complex Systems

Partner: Professor R. Mantegna, University of Palermo, Italy

Project: High-frequency Dynamics of Financial Markets

Partner: Dr E. Scalas, University of Piemonte Orientale, Italy

Project: Relationships between the Structure of Social Networks and Productivity

Partner: Professor M. Gallegati, Universita Politecnica delle Marche, Italy

Project: Multiscaling Behaviours in Financial Markets

Partner: Dr M. Dacorogna, Converium Ltd Zurich, Switzerland

Dr T. Di Matteo, Dr T. Aste and Professor S.T. Hyde

Project: European Union (EU) Project - COST P10 "Physics of Risk"

Partner: Professor P. Richmond, Trinity College, Ireland

Professor G.D. Dracoulis

Project: Intrinsic and Rotational Bands in ^{180}Ta

Partners: Professor G. Sletten, University of Copenhagen, Denmark; Euroball Collaboration, Strasbourg, France

Project: High-K Isomers

Partners: Professor P.M. Walker, University of Surrey, UK; Dr D.M. Cullen, University of Liverpool, UK

Project: High-K Isomers in Hafnium

Partners: Dr F.G. Kondev and Dr R. Janssens, Argonne National Laboratory, USA; Dr D. Hartley, University of Tennessee, USA

Project: Laser Spectroscopy of Deformed Isomers

Partners: Dr J. Billowes, University of Manchester, UK; Professor J.A.R. Griffith, University of Birmingham, UK; Dr P. Dendooven, University of Jyväskylä, Finland

Project: Spectroscopy of Heavy Nuclei

Partner: Professor A.R. Poletti, University of Auckland, New Zealand

Professor G.D. Dracoulis and Dr T. Kibédi

Project: Nuclear Structure in the $N = 74$ Region
Partner: Dr A.M. Bruce, University of Brighton, UK

Professor G.D. Dracoulis, Dr A.P. Byrne and Dr G.J. Lane
Project: Realistic Shell Model Calculations for Trans-lead Nuclei
Partner: Professor A. Covello, University of Naples, Italy

Project: Neutron Rich Trans-lead Nuclei using Radioactive Beams
Partners: Professor P.M. Walker, University of Surrey; UK; Dr G. de France, GANIL, France

Professor G.D. Dracoulis, Dr G.J. Lane, Dr A.P. Byrne and Dr A.M. Baxter (Faculties)
Project: Spectroscopy of Neutron Deficient Lead and Thallium Nuclei
Partner: Dr A.O. Macchiavelli, Lawrence Berkeley National Laboratory, USA

Professor G.D. Dracoulis, Dr G.J. Lane, Dr A.P. Byrne and Dr T. Kibédi
Project: Shape Co-existence in Very Neutron-deficient Pb Nuclei
Partners: Dr J. Gerl, Gesellschaft für Schwerionenforschung, Germany; Dr A. Andreyev, University of Liverpool, UK

Project: Structure of Multi-quasiparticle Isomers in ^{176}Lu and ^{177}Lu
Partners: Dr F.G. Kondev and Dr R. Janssens, Argonne National Laboratory, USA

Professor R.G. Elliman
Project: Silicon Based Photonic Devices and Structures
Partners: Professor J. Linnros, Royal Institute of Technology Kista-Stockholm, Sweden; Dr J. Valenta, Charles University, Czech Republic; Professor E. Krausz, Research School of Chemistry, Australian National University

Project: Optical and Physical Properties of Semiconductor Nanocrystals
Partner: Professor S.-H. Choi, Kyung Hee University, Korea

Project: Mechanical Properties of Silicon Nanostructures
Partners: Mr K.R. Virwani and Professor A.P. Malshe, University of Arkansas, USA; Professor D.K. Sood, Royal Melbourne Institute of Technology

Project: Ion Beam Mixing of Metallic Thin Films on Ceramic Substrates
Partners: Dr A. Balogh and Mr W. Berkey, Darmstadt University of Technology, Germany

Project: Ion Beam Modification of Carbon Nanostructures
Partner: Dr P. Papakonstantinou, University of Ulster at Jordanstown, Northern Ireland

Professor R.G. Elliman and Dr T.D.M. Dall
Project: Heavy-ion Beam Analysis of Materials
Partner: Dr H. Timmers, ADFA, University of New South Wales

Professor R.G. Elliman and Mr N. Smith

Project: Optical Gain in Silicon Nanocrystals

Partners: Professor P. Fauchet and Mr J. Ruan, University of Rochester, USA; Professor A. Polman, FOM Institute, Netherlands.

Dr L.K. Fifield and AMS Group

Project: Dating of Marine Cores with Carbon-14

Partners: Dr P. De Deckker and Dr B. Opdyke, Earth and Marine Sciences

Project: Measurement of Erosion Rates at a Range of Scales in the Australian Landscape Using in situ Produced ^{10}Be

Partner: Professor J. Chappell, Research School of Earth Sciences

Project: Landscape Evolution in the Southern Highlands Region of NSW, using ^{10}Be Deposited from the Atmosphere

Partner: Professor R. Wasson, Centre for Resource and Environmental Studies

Project: Studies of Meteorites Using Cosmogenic Isotopes

Partner: Professor G. Herzog, Rutgers University, USA

Project: Dating of Ice in Temperate-region Glaciers with ^{32}Si

Partners: Dr U. Morgenstern and Dr A. Zondervan, Geological and Nuclear Sciences, New Zealand

Project: Tracing Releases of Plutonium from Nuclear Processing Plants in Russia

Partners: Dr D. Oughton, Agricultural University of Norway; Dr W. Standing, Radiation Protection Authority, Norway

Project: Tracing of Groundwater Flow and Mixing in a Number of Australian Aquifer Systems

Partners: Dr R. Habermehl and Dr J. Kellett, Bureau of Rural Sciences; Dr R.G. Cresswell, CSIRO

Project: Tracing of Groundwater Flow in a Natural Analogue of a Nuclear Waste Repository Using ^{36}Cl

Partners: Dr Y. Mahara, Abiko Research Laboratory, Japan; Dr R. Habermehl, Bureau of Rural Sciences; Dr R.G. Cresswell, CSIRO

Project: Exposure Dating of Glacial Landforms in Scotland, and Lava Flows in Hawaii

Partners: Professor J. Stone, University of Washington, USA; Professor C. Ballantyne, University of St Andrews, Scotland

Project: Calibration of the Cosmic-ray Production of Chlorine-36 on Iron in Surface Rocks

Partner: Professor J. Stone, University of Washington, USA

Project: Plutonium as a Tracer of Soil Movement

Partner: Dr G. Hancock, CSIRO Land and Water

Project: Radiocarbon Dating

Partner: Dr N. Paterne, Laboratoire des Sciences du Climat et de l'Environnement, France

Project: Plutonium Measurements by AMS at Low Energy

Partner: Dr L. Wacker, Eidgenössische Technische Hochschule Zürich, Switzerland

Professor N. Fletcher

Project: The Acoustics of the Didjeridu

Partners: A/Professor L. Hollenberg, Melbourne University; Professor J. Wolfe and Dr J. Smith, University of New South Wales

Project: Acoustics of Birdsong

Partners: Professor R.A. Suthers, Indiana University, USA; Dr T. Riede, Humboldt University, Germany; Dr G.J.L. Beckers, Leiden University, The Netherlands

Project: Flute Acoustics

Partner: Mr T. McGee, Australian Flutemaker, Canberra

Mr M. Fraser, Dr M. Gao, Dr H.H. Tan and Professor C. Jagadish

Project: THz Spectroscopy of Compound Semiconductors

Partners: Dr M. Johnston and Dr L. Hertz, Oxford University, UK

Dr L. Fu, Dr H.H. Tan, Dr M. Buda and Professor C. Jagadish

Project: Optoelectronic Devices

Partner: Dr F. Karouta, Eindhoven University of Technology, The Netherlands

Mr Q. Gao, Ms P. Lever, Ms V. Coleman, Ms K. Stewart, Ms S. Mokkaapati, Mr S. Barik, Dr L. Fu, Dr J. Wong-Leung, Dr M. Buda, Dr H.H. Tan and Professor C. Jagadish

Project: Optical Spectroscopy of Semiconductor Quantum Structures and Devices

Partners: Mr P. Reece, Dr B.Q. Sun, Dr M. Zhang and Professor M. Gal, University of New South Wales

Dr M. Gulacsi

Project: Effects of Phonons on Magnetic Impurities

Partners: Dr A.R. Bishop, Los Alamos National Laboratory, USA; Dr A. Bussmann-Holder, Max-Planck-Institute, Stuttgart, Germany

Project: Correlation Effects in Kondo Lattice Models

Partners: Professor J. Zaanen and Dr I. McCulloch, University of Leiden, The Netherlands

Project: Stripe Formation in Two-dimensional Lattices

Partner: Professor Zs. Gulacsi, University of Debrecen, Hungary

Project: Impurity Effects in Mesoscopic Systems

Partners: Professor A. Rosengren and Mr A. Juozapavicius, Royal Institute of Technology, Sweden

Professor J.H. Harris and Mr B. Heslop

Project: VHF Wireless Technologies for Last-mile Internet Access in Regional Australia

Partner: NJH Consulting, Newcastle

Professor D.J. Hinde

Project: Fission Dynamics

Partner: Professor Y. Abe, Kyoto University, Japan

Dr J. Howard

Project: Spectroscopic Studies of the Plasma Divertor in W7-AS

Partners: Dr R. Konig and Mr J. Chung, Max Planck Institute for Plasma Physics, Germany

Project: Coherence Imaging on RFX Reversed Field Pinch

Partner: Dr M Valisa, Consorzio RFX, Padova, Italy

Project: Development of Diagnostic Imaging Systems for the Sydney University High Current Pulsed Arc

Partners: Professor M. Bilek, Dr R. Tarrant, Dr G. Warr and Professor D. Mackenzie, University of Sydney

Project: Measurement of Electric Field in H-1NF Using Laser Induced Fluorescence Techniques

Partners: Professor B.W. James and Mr D. Anduczyk, University of Sydney

Professor S. Hyde

Project: Electron Tomography of Biophotonic Crystals

Partners: Professor H. Hasegawa, Kyoto University, Japan; Dr M. Large, University of Sydney

Dr R. Jarvis

Project: e-beam Irradiation of Chalcogenide Films

Partner: Dr S. Garcia Blanco, University of Toronto, Canada

Project: Raman Spectroscopy of Chalcogenide Films

Partner: Professor K. Richardson, University of Central Florida, USA

Dr A.S. Kheifets

Project: Convergent Close-coupling Theory of Double Ionization by Photon and Electron Impact

Partner: Professor I. Bray, Murdoch University

Project: Electron Impact Double Ionization of the Helium Atom

Partners: Professor A. Lahmam-Bennani, University of Paris, France; Dr A. Dorn, University of Freiburg, Germany

Project: Theoretical and Experimental Studies of Double Photoionization of He and H₂

Partners: Dr L. Avaldi, Consiglio Nazionale delle Ricerche, Italy; Professor R. Dörner, University of Frankfurt, Germany

Dr T. Kibédi

Project: Theoretical Conversion Coefficients and EO Electronic Factors

Partners: Dr T.W. Burrows, Brookhaven National Laboratory, USA; Dr M.T. Trzhaskovskaya, Petersburg Nuclear Physics Institute, Russia; Dr C.W. Nestor, Jr., Oak Ridge National Laboratory, USA

Dr T. Kibédi and Professor G.D. Dracoulis

Project: Internal Conversion Electron Spectroscopy of 0^+ States

Partners: Dr S. Yates, University of Kentucky, USA; Dr P. Gerrett, Lawrence Livermore Laboratory, USA; Dr R. Julin, University of Jyväskylä, Finland

Professor Y. Kivshar

Project: Vector Discrete Solitons and Polarization Effects

Partner: Professor M. Molina, University of Chile, Chile

Project: The Frenkel-Kontova Model and its Applications

Partner: Professor O. Braun, Institute of Physics, Ukraine

Project: Nonlinear Photonic Crystals

Partner: Dr S. Mingaleev, University of Central Florida, USA

Professor Y. Kivshar and Dr A. Miroshnichenko

Project: Fano Resonances in Nonlinear Chains

Partner: Dr S. Flach, Max-Planck-Institute for Complex Systems, Germany

Professor Y. Kivshar and Dr A. Sukhorukov

Project: Parametric Optical Conversion due to Cascaded Nonlinearities

Partner: Professor S.M. Saltiel, University of Sofia, Bulgaria

Project: Self-written Optical Waveguides in Polymerized Materials

Partner: Professor S. Kawata, Osaka University, Japan

Project: Stability Analysis of Solitary Waves

Partner: Professor D.E. Pelinovsky, McMaster University, Canada

Project: Discrete Solitons in Waveguide Arrays

Partners: Professor R. Morandotti, University of Quebec, Canada; Professor S. Aitchison, University of Toronto, Canada; Professor Y. Silberberg, Weizmann Institute of Technology, Israel

Project: Incoherent Gap Solitons

Partners: Mr K. Motzek and Professor F. Kaiser, Darmstadt University of Technology, Germany

Project: Coherence-controlled Soliton Interactions

Partners: Professor D. Anderson and Professor M. Lisak, Chalmers University of Technology, Sweden

Project: Incoherent Optical Solitons and their Interaction

Partner: Professor M.-F. Shih, University of Taiwan, Taiwan

Professor Y. Kivshar and Dr I. Shadrivov

Project: Nonlinear Surface Waves in Left-handed Metamaterials

Partner: Professor A. Boardman, University of Salford, UK

Project: Goos-Haenchen Effect in Slabs of Metamaterials

Partner: Professor R. Ziolkowski, University of Arizona, USA

Dr P. Kluth and Dr S. Kluth

Project: Defects and Diffusion in Si-Nanostructures

Partners: Professor S. Mantl, Dr J. Moers and Dr Q.-T. Zhao, Forschungszentrum Jülich, Germany

Dr M. Knackstedt and Mr A. Jones

Project: Characterisation of Scaffolds and Scaffold Implants

Partners: Professor B. Milthorpe; University of New South Wales; Dr D. Hutmacher, National University, Singapore; Dr K. Gross, Monash University

Project: Bone Structure and Degradation of Mid-femoral Necks

Partners: Professor E. Seeman and Dr R. Zezabe, Melbourne University

Dr M. Knackstedt, Dr C.H. Arns and Dr A. Goel

Project: Tomography and Analysis of Paper Structure

Partners: Professor O. Gregersen and Dr R. Holmstad, Norwegian University of Science and Technology, Norway

Dr M. Knackstedt, Dr C.H. Arns and Mr M. Saadatfar

Project: Characterisation of Grain Structures in Sedimentary Rocks

Partners: Professor W.V. Pinczewski, University of New South Wales; Dr J. Kelly, Woodside Petroleum

Dr M. Knackstedt, Dr F. Bauget and Mr A. Ghous

Project: Formation Evaluation in Thinly Bedded Sands

Partners: Mr R. Harris, Conoco-Phillips, UK; Mr G. Beck, EOG Resources Houston, USA

Dr M. Knackstedt, Dr C.H. Arns, Dr F. Bauget, Dr A.P. Sheppard, Dr R.M. Sok, Dr A. Sakellariou and Mr H. Averdunk

Project: Pore Scale Characterisation of Sedimentary Core Material

Partners: Professor W.V. Pinczewski, University of New South Wales; Mr D. Watkins and Dr J. Kelly, Woodside Petroleum; Mr G. Bunn, BHP Billiton Petroleum; Dr P.E. Oren and Dr S. Bakke, Statoil Research, Dr E. Fjaer, Sintef Research; Mr P. Hogarty, Petroleum Development Oman

Dr W. Krolikowski

Project: Optical Beams in Nonlocal Nonlinear Media

Partners: Professor O. Bang, Technical University, Denmark; Professor J. Wyller, Norway Agricultural University, Norway; Professor J. Rasmussen, Risø National Laboratory, Denmark

Project: Localised Structure in Second Harmonic Generation
Partner: Professor M. Saffman, University of Wisconsin, USA

Project: Modulational Instability in Photorefractive Media
Partner: Professor M. Saffman, University of Wisconsin, USA

Project: Photorefractive Solitons
Partner: Professor C. Denz, University of Münster, Germany

Project: Discrete Solitons
Partner: Professor F. Lederer, University of Jena, Germany

Dr G.J. Lane, Professor G.D. Dracoulis and Professor A.P. Byrne

Project: High-spin States and Shell Model Structure of Neutron-rich Nuclei Near ^{208}Pb
Partners: Professor R. Broda and Dr B. Fornal, Niewodniczanski Institute of Nuclear Physics, Poland; Professor K.-H. Maier, Hahn-Meitner-Institut, Germany

Project: Octupole Correlations and Particle Alignments in Neutron-rich Uranium Nuclei
Partners: Professor R. Broda and Dr B. Fornal, Niewodniczanski Institute of Nuclear Physics, Poland; Dr S. Zhu, Professor R.V.F. Janssens and Dr M. Carpenter, Argonne National Laboratory, USA; Dr A.O. Macchiavelli and Dr D. Ward, Lawrence Berkeley National Laboratory, USA

Ms P. Lever, Dr H.H. Tan and Professor C. Jagadish

Project: Optical Spectroscopy of Quantum Dots
Partner: Professor J. Wolter, Eindhoven University of Technology, The Netherlands

Professor B.R. Lewis and Dr S.T. Gibson

Project: Coupled-channel Calculations of Linewidths for the b State of N_2
Partners: Professor H. Lefebvre-Brion, Université de Paris-Sud, France; Professor J.-M. Robbe, Université de Lille, France

Project: Review of Molecular Oxygen

Partners: Professor M.L. Ginter, University of Maryland, USA; Dr J.S. Morrill, Washington Naval Research Laboratory, USA

Professor B.R. Lewis and Dr K.G.H. Baldwin

Project: High Resolution XUV Laser Spectroscopy of Isotopic Nitrogen
Partners: Professor W. Ubachs and Professor W. Hogervorst, Vrije Universiteit Amsterdam, The Netherlands

Professor B.R. Lewis, Dr K.G.H. Baldwin and Dr M. Kono

Project: Development of Ultra-high Resolution VUV Laser Sources
Partner: Professor B.J. Orr, Macquarie University

Professor J.D. Love

Project: Scanning Near-field Optical Microscopy

Partners: Dr S. Huntington and Dr B. Gibson, University of Melbourne; Dr V. Steblina, VA FutureTech Consulting Pty Ltd, Sydney

Project: Propagation in Practical Multimode Fibres and Devices

Partners: Professor D. Abrahams and Dr E. Perrey-Debain, University of Manchester, UK

Project: Undergraduate Text Book on Optical Fibres, Waveguides and Devices

Partners: A/Professor F. Ladouceur, University of New South Wales; Dr F.P. Payne, University of Oxford, UK

Professor J.D. Love and Dr A. Ankiewicz

Project: Multimode Waveguides and Devices

Partner: Redfern Polymer Optics

Dr J.C.A. Lower

Project: Investigation into (e,3e) and (e,2e) Processing Using Time-of-flight Techniques and Toroidal Electrostatic Analysers

Partner: Dr A. Dorn, Max-Planck-Institute for Nuclear Physics, Germany

Professor B. Luther-Davies

Project: Highly Oriented Nanostructures of Nonlinear Optical Materials for Applications in Polarized Light Emitting Diodes and Optical Devices.

Partner: Dr H. Burkhard Schulz, Potsdam University, Germany

Professor B. Luther-Davies and Professor W. Krolikowski

Project: Centre of Excellence for Ultrahigh Bandwidth Devices for Optical Systems

Partners: University of Sydney; Macquarie University; University of Technology, Sydney; Swinburne University of Technology; NSW State Government through Department of State and Regional Development; CSIRO; Osaka University, Japan; University of Central Florida, USA; Lucent Technologies, USA; Institute Fresnel, France

Professor B. Luther-Davies and Ms A. Smith

Project: Production of Bulk Samples of Novel Chalcogenide Glasses

Partner: Professor K. Richardson, University of Central Florida, USA

Professor N.B. Manson and Dr M. Sellars

Project: Quantum Computing Using the Nitrogen-vacancy Centre in Diamond

Partners: Professor M. Scully and Professor P. Hemmer, T & M University, USA; Dr D. Pulford, Defence Science and Technology Organisation; Professor S. Prawer, University of Melbourne

Professor R.P. McEachran

Project: Absorption Effects in Elastic Scattering

Partners: Professor H. Cho, Chungnam National University, Korea; Professor H. Tanaka, Sophia University, Japan

Project: Positron Excitation of Krypton and Xenon

Partners: Professor A.D. Stauffer, York University, Canada; Dr L.A. Parcell, MacQuarie University

Project: Low Energy Transport Properties in Zinc

Partners: Dr R. White, James Cook University; Professor K. Bartschat, Drake University, USA

Dr F.P. Mills

Project: Analysis and Modeling of OH Column Abundances

Partners: Dr S.P. Sander, Dr R.P. Cageao, and Dr M. Allen, NASA Jet Propulsion Laboratory, USA

Project: Excited State Oxygen Chemistry in the Venus Atmosphere

Partners: Dr M. Allen, NASA Jet Propulsion Laboratory, USA; Professor Y.L. Yung, California Institute of Technology, USA

Project: Photochemical Modeling of the Venus Middle Atmosphere

Partners: Dr M. Allen, NASA Jet Propulsion Laboratory, USA; Professor Y.L. Yung, California Institute of Technology, USA

Project: Ultraviolet Characterization and Remote Sensing of Aerosols

Partner: Dr A. Eldering, NASA Jet Propulsion Laboratory, USA

Project: UV and Temperature Effects on Grape Cultivation

Partners: A/Professor S.R. Wilson, University of Wollongong; Dr L. Lemus-Deschamps, Bureau of Meteorology Research Center, Melbourne; Mr J. Moody, Multiflex Inc., Melbourne

Dr D. Neshev

Project: Transfer of Angular Momentum to Nonlinear Periodic Structures

Partner: Professor Z. Chen, San Francisco State University, USA

Project: Narrow-band Tunable Radiation for Laser Spectroscopy in the Extreme Ultra-violet Region

Partner: Professor W. Ubachs, Vrije Universiteit Amsterdam, The Netherlands

Project: Attraction of Nonlocal Dark Optical Solitons

Partner: Dr O. Bang, Technical University of Denmark, Denmark

Dr D. Neshev and Dr A. Desyatnikov

Project: Generation of Nonlinear Two-dimensional Periodic Structures

Partner: Professor C. Denz, Westfälische Wilhelms-Universität Münster, Germany

Project: Dynamics of Phase Singularities in Nonlinear Systems

Partner: Dr A. Dreischuh, Sofia University, Bulgaria

Dr C. Neto

Project: Dewetting of Thin Liquid Films

Partner: Professor K. Jacobs, Saarland University, Germany

Project: Characterisation of Magnetic Nanoparticles

Partners: Dr M. Bonini and Professor P. Baglioni, University of Florence, Italy

Professor B.W. Ninham

Project: Physical, Colloid and Surface Chemistry

Partners: Professor W. Kunz, University of Regensburg, Germany; Professor P. Baglioni, Dr P. Lo Nostro, Dr R. Giorgi and Dr E. Fratini, University of Florence, Italy; Professor M. Monduzzi, University of Cagliari, Italy; Dr M. Bostrom, Linkoping University, Sweden; Dr T. Nylander and Dr V. Alfredsson, University of Lund, Sweden; Professor O. Manuel, University of Rolla-Missouri, USA; Professor K. Larsson and Professor S. Andersson, University of Lund and Sandvik, Sweden

Dr M. Ridgway

Project: Formation of Dilute GaAs_xN_{1-x} and Ga_xMn_{1-x}As Alloys by Ion Implantation

Partners: Dr O. Dubon, University of California at Berkeley, USA; Dr K.M. Yu, Lawrence Berkeley National Laboratory, USA

Project: Laser Annealing of Ion-implanted Semiconductors

Partner: Professor M. Rao, George Mason University, USA

Dr M. Ridgway and Professor J.S. Williams

Project: Nanocavity Evolution in Si under Ion Irradiation

Partners: Professor H. Bernas, Dr M.-O. Ruault and Dr F. Fortuna, CNRS, France

Dr M. Ridgway, Dr R. Dogra and Professor A.P. Byrne

Project: Pd-defect and Pd-dopant Characterisation with Perturbed Angular Correlation

Partner: Dr R. Vianden, University of Bonn, Germany

Dr M. Ridgway, Dr C.J. Glover and Dr S. Kluth

Project: EXAFS Characterisation of Amorphous Semiconductors

Partners: Dr G. Azevedo, Laboratorio Nacional de Luz Sincrotron, Brazil; Dr K.M. Yu, Lawrence Berkeley National Laboratory, USA; Dr G.J. Foran, ANSTO

Project: EXAFS Characterisation of Semiconducting and Metallic Nanocrystals

Partners: Dr G. Azevedo, Laboratorio Nacional de Luz Sincrotron, Brazil; Dr G.J. Foran, ANSTO

Project: Implantation-induced Amorphisation of Ternary Semiconductors

Partner: Professor W. Wesch, Friedrich-Schiller University, Germany

Dr V. Robins

Project: Signatures of Spatial Morphology in Ordered and Disordered Media

Partner: Dr K.R. Mecke, Max-Planck-Institut für Metallforschung, Germany

Dr B.A. Robson

Project: Antiproton Scattering

Partner: Professor Y.-S. Zhang, Institute of High Energy Physics, P.R. China

Project: Deuteron-deuteron Elastic Scattering

Partner: Professor Y.-S. Zhang, Institute of High Energy Physics, P.R. China

Project: Fusion

Partners: Dr B. Giraud, CEA Saclay, France; Dr K.A. Amos and Dr S. Karataglidis, University of Melbourne

Dr R.E. Robson

Project: The Electron-hydrogen Vibrational Excitation Cross Section

Partners: Professor M.A. Morrison, University of Oklahoma, USA; Dr R. White, James Cook University

Project: Fluid Equations for Weakly Ionised Plasmas

Partner: Professor Z. Petrovic, Belgrade Institute of Physics, Serbia

Project: Transport Processes in Amorphous Semiconductors and Polymers

Partners: Professor A. Blumen, Institut für Theoretische Polymerphysik, Germany; Dr P. Meredith, University of Queensland

Project: Transport Processes in Weakly Ionised Gases and Plasmas

Partners: Dr R.D. White, James Cook University; Professor M.A. Morrison, University of Oklahoma, USA; Professor Z. Petrovic, Belgrade Institute of Physics, Serbia

Dr A. Rode

Project: 100-W Laser System for Ultra-fast Pulsed Laser Deposition

Partners: Dr J. Gieseckus and Mr M. Duering, Fraunhofer Institute for Laser Technique Aachen, Germany

Project: Boron Nitride Nanostructures Formed by the High Repetition-rate Laser Ablation

Partners: Dr D. Golberg and Professor Y. Bando, National Institute for Material Science, Japan

Project: Magnetic Properties of Laser-deposited Carbon Nanofoam

Partners: Dr J. Giapintzakis, Institute of Electronic Structure and Lasers, Greece; Dr D. Tomanek, Michigan State University, USA

Project: Sub-picosecond Laser Deposition of Optical Films

Partner: Professor B.N. Chickov, Laser Zentrum Hannover e.V., Germany

Project: Recording and Reading of Three-dimensional Memory in Glasses

Partners: Professor H. Mizawa and Dr S. Juodkazis, University of Tokyushina, Japan

Dr A. Samoc and Dr M. Samoc

Project: Crystal Structure of the Second Order Nonlinear Optical Addition Complex $AsI_3 \cdot 3S_8$

Partners: Dr E.R. Krausz and Dr A.C. Willis, Research School of Chemistry

Dr A. Samoc, Dr M. Samoc and Professor B. Luther-Davies

Project: Third-order Optical Nonlinearities of Oligomers, Dendrimers and Polymers Derived from Solution Z-scan Studies

Partner: Dr M. Humphrey, Department of Chemistry

Project: Synthesis and Third-order Nonlinear Optical Properties of End-functionalized Oligophenylenevinylenes

Partner: Dr M.S. Wong, Baptist University, HongKong

Project: Nonlinear Optical Properties of Soluble Oligomers of PPV

Partner: Dr M.S. Wong, Baptist University, HongKong

Dr M. Samoc

Project: Nonlinear Optics and Nanophotonics

Partner: Professor P.N. Prasad, New York State University at Buffalo, USA

Project: Nonlinear Properties of Evaporated Films of Disperse Red

Partner: Professor M.O. Tjia, Bandung Institute of Technology, Indonesia

Dr M. Sellars and Dr J. Longdell

Project: Investigation of EIT and Slow Light

Partner: Professor P. Hemmer, Texas A & M University, USA

Dr T.J. Senden

Project: Nanoscopic Manipulation of Molecular Assemblies

Partner: Professor J.-M. di Meglio, Université Paris VI, France

Dr M.G. Shats

Project: Electron Cyclotron Heating of Plasma in Stellarators

Partner: Dr K. Nagasaki, Kyoto University, Japan

Project: Confinement Studies in Stellarators

Partner: Professor K. Toi, National Institute for Fusion Science, Japan

Project: Turbulent Structures and Transport in Plasmas

Partners: Professor P.H. Diamond and Dr D. Rudakov, University of California, USA

Dr A. Sheppard

Project: Morphometry of Nutshells, Analysis of Foam Dynamics from Tomographic Image Sequences

Partners: Dr K. Mecke, Dr U. Wegst and Mr B. Briedenbach, Max-Planck-Institut für Metallforschung, Germany

Ms K. Stewart, Dr L. Fu, Dr M. Buda, Dr H.H. Tan and Professor C. Jagadish

Project: Tuning of Detection Wavelength of Quantum Dot Infrared Photodetectors

Partners: Dr A. Stiff-Roberts and Professor P. Bhattacharya, University of Michigan, USA

Dr A.E. Stuchbery

Project: γ - γ Angular Correlations from Reactions with Intermediate-energy Beams

Partners: Ms H. Olliver and Professor T. Glasmacher, Michigan State University, USA

Project: Gyromagnetic Ratios and Octupole Collectivity in the Structure of the $^{90-96}\text{Zr}$ Isotopes

Partners: Professor N. Benczer-Koller and Dr G. Kumbartzki, Rutgers University, USA; Dr T.J. Mertzimekis, Michigan State University, USA

Project: Radioactive Ion Beams in the Region of ^{100}Sn and ^{78}Ni at the NSCL

Partners: Dr A. Stolz et al., Michigan State University, USA

Project: Shell Model Configurations in the 2^+_1 State in ^{46}Ca from a g-factor Measurement

Partners: Dr M.J. Taylor, University of Brighton, UK; Professor N. Benczer-Koller, Rutgers University, USA; Dr L. Bernstein, Lawrence Livermore National Laboratory, USA; Dr M.A. McMahan, Lawrence Berkeley National Laboratory, USA; Professor K.-H. Speidel, Universität Bonn, Germany

Project: g-factor Measurements of First 2^+ States of Heavy Te Isotopes Based on Nuclear Spin Deorientation for Nuclei Recoiling in Vacuum

Partners: Dr M. Danchev and Professor C.R. Bingham, University of Tennessee, USA; Professor N. J. Stone, Dr J.R. Stone and Ms C.L. Timlin, University of Oxford, UK; Dr J. Pavan, Dr C. Baktash, Dr J. Beene, Dr A. Galindo-Uribarri, Dr C.J. Gross and Dr D.C. Radford, Oak Ridge National Laboratory, USA; Professor N. Benczer-Koller and Dr G. Kumbartzki, Rutgers University, USA; Professor N.V. Zamfir, Yale University, USA

Dr A.E. Stuchbery and Professor A.P. Byrne

Project: Hyperfine Interactions Spectrometer

Partners: A/Professor D.H. Chaplin, ADFA, University of New South Wales; Professor H.H. Bolotin, University of Melbourne

Dr A.E. Stuchbery, Dr A.N. Wilson and Dr P.M. Davidson

Project: Transient Fields for Mg Ions Traversing Gadolinium Hosts at Velocities above and below the K-shell Electron Velocity

Partners: Professor P.F. Mantica, Dr T.J. Mertzimekis, Mr A.D. Davies, Mr S.N. Liddick and Mr B.E. Tomlin, Michigan State University, USA

Project: Excited-state Configurations in ^{38}S and ^{40}S through Transient-field g-factor Measurements on Fast Fragments (NSCL Experiment 02020)

Partners: Professor P.F. Mantica, Mr A.D. Davies and the NSCL Beta-NMR and Gamma Groups, Michigan State University, USA

Dr A.E. Stuchbery, Dr A.N. Wilson, Professor G.D. Dracoulis, Professor A.P. Byrne and Dr G.J. Lane

Project: Electromagnetic Properties of Pseudo-Nilsson Bands in ^{185}Os

Partners: Dr C. Wheldon, University of Surrey, UK; Dr A.M. Bruce, University of Brighton, UK; Professor C.B. Moon, Hoseo University, Republic of Korea

Dr H.H. Tan and Professor C. Jagadish

Project: Growth of InP-based Photodiodes and Photodetectors

Partner: Professor J. Campbell, University of Texas at Austin, USA

Project: Thermionic Cooling in Semiconductors

Partner: Professor R. Lewis, University of Wollongong

Dr A.G. Truscott, Dr K.G.H. Baldwin and Centre for Quantum-Atom Optics

Project: Metastable Helium Bose-Einstein Condensation

Partners: Professor M. Leduc, École Normale Supérieure, France; Dr W. Vassen, Vrije Universiteit Amsterdam, The Netherlands

Dr M. Vos

Project: Elastic Scattering of Electrons and Neutrons at High Momentum Transfer

Partners: Dr T. Abdul-Redah, ISIS and University of Kent, UK; Professor Dr C.A. Chatzidimitriou-Dreismann, Professor A. Hitchcock and Dr G. Cooper, McMaster University, Canada

Dr M. Vos and Dr A.S. Kheifets

Project: Electron Correlations in Solids

Partner: Dr F. Aryasetiawan, National Institute of Advanced Industrial Science and Technology, Japan

Dr A.N. Wilson

Project: High-Spin States in Nuclei with $A=120$ near the Proton Dripline

Partners: Dr J.F. Smith, Manchester University, UK; Dr C.J. Chiara, Washington University at St Louis, USA; Dr E.S. Paul, Liverpool University, UK

Dr A.N. Wilson and Dr P.M. Davidson

Project: Decay out of Superdeformed Bands in a Two-level Mixing Model

Partners: Professor B.R. Barrett, Professor C. Stafford and Mr D.M. Cardamone, University of Arizona, USA

Project: Decay out of Superdeformed Bands

Partners: Dr A.J. Sargeant and Professor M.S. Hussein, Universidade de Sao Paulo, Brazil

Dr A.N. Wilson, Dr P.M. Davidson, Professor G.D. Dracoulis and Professor A.P. Byrne

Project: Superdeformation in Po Isotopes

Partners: Dr R.A. Bark and Professor J.F. Sharpey-Schafer, iThemba Laboratories, South Africa; Professor H. Hubel and Ms C. Englehardt, Helmholtz Institut für Strahlen- und Kern-Physik, Germany; Dr A. Korichi, Centre de Spectrométrie Nucléaire et de Spectrométrie de Masse, France

Dr A.N. Wilson, Professor G.D. Dracoulis, Dr P.M. Davidson, Professor A.P. Byrne and Dr G.J. Lane

Project: Superdeformation in Light Pb Isotopes

Partners: Dr R.M. Clark, Dr P. Fallon, Dr A.O. Macchiavelli and Dr D. Ward, Lawrence Berkeley National Laboratory, USA; Dr A. Görgen, Commissariat à l'Energie Atomique, France

Dr A.N. Wilson, Dr P.M. Davidson, Professor G.D. Dracoulis, Professor A.P. Byrne and Dr G.J. Lane

Project: Superdeformed ^{196}Pb

Partners: Professor H. Hubel and Dr A.K. Singh, ISKP Bonn, Germany; Dr A. Korichi, CSNSM Orsay, France

Dr J. Wong-Leung

Project: Ion Implantation and Defect Studies in Silicon Carbide

Partners: Professor B.G. Svensson, University of Oslo, Norway; Dr M. Linnarson, Royal Institute of Technology, Sweden; Professor D. Cockayne, University of Oxford, UK

Dr J. Wong-Leung, Dr H.H. Tan, Dr M. Gao, Ms V. Coleman, Professor J.S. Williams and Professor C. Jagadish

Project: Electron Microscopy Study of Defects in Ion Implanted Semiconductors

Partners: Dr J. Zou, University of Queensland; Dr J. FitzGerald, Research School of Earth Sciences; Professor D.J.H. Cockayne, Oxford University, UK

Dr W.S. Woolcock

Project: The Pion-Nucleon System at Low Energies

Partners: Dr E. Matsinos, Varian Medical Systems, Switzerland; Professor G.C. Oades, Aarhus University, Denmark; Professor G. Rasche, University of Zurich, Switzerland

International Collaborative/Cooperative Agreements

The School holds collaborative/cooperative agreements and/or memoranda of understanding with the following institutions and organizations:

- Institute of Nuclear Physics, Belgium
- Department of Communications, Canada
- Beijing University, China
- Shanghai Institute of Technical Physics (SITP), Chinese Academy of Sciences, China
- National Laboratory for Infrared Physics, Shanghai Institute of Technical Physics, Chinese Academy of Sciences, China
- Tsinghua University, China
- Institute of Mathematics Modelling, Technical University of Denmark, Denmark
- Physics Department, University of Jyväskylä, Finland
- GANIL IN2P3, France
- L'Ecole Polytechnique, France
- University of Augsburg, Germany
- Hahn-Meitner Institute, Germany
- Institute of Advanced Energy, Kyoto University, Japan
- National Institute for Fusion Science, Japan
- RCNP, Japan

- Samsung Electronics Co. Ltd, Korea
- Telecom Korea, Seoul, Korea
- Agrigenesis Biosciences Ltd, Auckland, New Zealand
- National Accelerator Facility and FRD, South Africa
- The Physics Department, University of Pretoria, South Africa
- Ericsson Components AB, Sweden
- Ericsson Fibre Optic Research Centre, Sweden
- Royal Institute of Technology, Sweden
- COBRA Inter-University Research Institute on Communication Technology, Eindhoven University of Technology, The Netherlands
- ANU-Engineering & Physical Sciences Research Council Agreement (ANU-EPSRC), UK (The ANU-EPSRC agreement in effect covers a range of UK universities)
- Cambridge University, UK
- Oxford University, UK
- ATLAS Accelerator Facility, Argonne National Laboratory, USA
- Bell Laboratories, USA
- Intel Corporation, USA
- Physics Division, Lawrence Berkeley Laboratory, USA
- Lightwave Microsystems Corporation, USA
- Lucent Technologies, USA
- Motorola, USA
- HHRIF, Oak Ridge National Laboratory, USA
- Lockheed Martin Energy Research Corporation, Oak Ridge National Laboratory, USA
- OFT Associates, USA
- Princeton Plasma Physics Laboratory, Princeton University, USA
- Stanford University, USA
- Stanford Linear Accelerator Center, Stanford Synchrotron Radiation Laboratory, USA

- The European Union-Australia Science & Technology Agreement, DIST
- Deutscher Akademischer Austauschdienst (DAAD) Exchange Service

National Collaborative Agreements

The School holds the following collaborative agreements under the IAS/Other Australian University Collaboration Scheme and has various independent agreements with Australian industries:

- ACTEWAGL, Canberra
- ADC Australia, Canberra
- AGEN Pty Ltd, Brisbane
- Allen & Buckridge Partners
- Canberra Institute of Technology
- Central Queensland University
- Curtin University of Technology
- Ericsson Australia Pty Ltd, Melbourne
- Flinders University

- Griffith University
- Hypatia Analytic Thought Pty Ltd, Melbourne
- James Cook University
- JDS/Uniphase, Sydney
- La Trobe University
- Macquarie University
- Monash University
- Photonic Technologies Pty Ltd, Sydney
- Royal Melbourne Institute of Technology
- Siemens Ltd, Sydney
- University College, Canberra,
- University of Canberra
- University of Melbourne
- University of New England
- University of New South Wales
- University of Newcastle
- University of Queensland
- University of South Australia
- University of Sydney
- University of Western Australia
- University of Western Sydney – Faculty of Business and Technology
- University of Wollongong
- The Powerhouse Museum of Applied Arts & Sciences, Sydney

Appendix – Grants and Contracts

Australian Academy of Science

Travel Grant to the USA

Dr D. Neshev

Nonlinear Propagation of Light in Two-dimensional Photonic Lattices

2004 \$ 8,600

Dr T. Alexander

Travel Grant for Young Australian Researchers

2004 \$ 6,000

Travel Grant to Japan

Dr A. Sukhorukov

Research Visit to Japan

2004 \$ 7,000

Dr A. Rode

Femtosecond Laser-induced 3DMicrostructuring of Transparent Dielectrics

2004 \$ 1,800

Australian Academy of Technological Sciences and Engineering

Innovation Access Program – International S&T

Professor J.D. Love

14th International Workshop on Optical Waveguide Theory & Numerical Modelling (OWTNM)

2004 – 2005 \$ 38,830

AusIndustry

Innovation Access Program

Professor J.S. Williams

Establishment of the Australian Materials Technology Network

2003 – 2006 \$2,683,520

ACT Knowledge Fund Grants

Dr Y. Chen and Professor J.S. Williams

Purification of Carbon and Boron Nitride Nanotubes

2004

\$ 30,000

Mr D. Ramdutt and Professor R.W. Boswell

Nanotiter Plate for Novel Cell Arrays

2004

\$ 34,000

Australian-German Joint Research Co-operation Scheme

Professor B. Luther-Davies

Highly Oriented Nanostructures of Nonlinear Optical Materials for Applications in Polarized Light Emitting Diodes and Optical Devices

July 2002 – July 2004

\$ 16,400

Professor S. Hyde

Signatures of Spatial Morphology in Ordered and Disordered Media

July 2002 – July 2004

\$ 17,100

Australian Nuclear Science & Technology Organisation

Access to Major Research Facilities Program

Professor G.D. Dracoulis

Competition between Octupole and Multi-Particle Excitation in Po-212 and At-213

2004

\$ 12,000

Dr A.E. Stuchbery

Excited State Configurations in ³⁸S and ⁴⁰S through Transient Field g-Factor Measurements on Fast Fragments

2004

\$ 12,000

Australian Research Council (ARC) Grants and Awards

ARC Australian Postgraduate Awards (Industry)

Dr S. Huntington (University of Melbourne), Professor J.D. Love, Dr A. Carter (Nufern Inc) and Mr P. Pace (APAI Award)

December 2001 – November 2004	\$ 86,598
Nufern contribution	\$ 15,000

ARC Australian Research Fellowship

Dr A.G. Truscott and Dr J.J. Hope

How Does a Bose Einstein Condensate Develop Phase?

2003 – 2007	\$ 415,000
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ARC Australian Senior Research Fellowship

Dr D.R.M. Williams

Deformation and Dynamics of Single Polymer Chains

2003 – 2004	\$ 179,032
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ARC Centre for Excellence

Dr K.G.H. Baldwin and Dr A.G. Truscott

Australian Centre for Quantum-Atom-Optics (ACQAO)

2003 – 2008 (ANU Total)	(\$10,950,000)
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RSPHysSE Project: Metastable BEC

2003 – 2008 (RSPSE Share)	\$1,353,000
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Professor Y. Kivshar

ARC Centre of Excellence for Quantum-Atom Optics (ACQAO)

2003 – 2008 (ANU Total)	(\$10,950,000)
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RSPHysSE Project: Optical Lattices

2003 – 2008 (RSPSE Share)	\$ 719,000
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Professor Y.S. Kivshar, Dr W. Krolikowski and Professor B. Luther-Davies

Centre for Ultrahighband Devices for Optical Systems (CUDOS)

2003 – 2007 (ANU Total)	(\$11,513,850)
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2003 – 2007 (RSPSE Share) \$2,967,000

University of Queensland

Dr Y. Chen (ANU Participant)

Australian Centre for Functional Nanomaterials

2003 – 2007 (Total \$6,380,544)

2003 – 2007 (ANU Share) \$ 452,256

ARC Discovery Project Grants

Professor N.N. Akhmediev

Multi-soliton Complexes

2003 – 2005 \$ 245,000

Dr T. Aste and Dr T.J. Senden.

Granular Materials in 3D: Structural, Mechanical and Dynamic Properties from the Grain-scale and Beyond

2004 – 2006 \$ 294,000

Professor V.V. Bazhanov and Professor R.J. Baxter

Solvable Models on Regular and Random Lattices in Statistical Mechanics and Field Theory

2002 – 2004 \$ 318,000

Dr B.D. Blackwell and Dr M. Hegland

High-performance Computational Data-mining Techniques for Feature Detection in Complex Time Series from Large-scale, Networked Plasma Experiments

2004 – 2006 \$ 195,000

Professor S.J. Buckman

Electron Collision Studies with Laser-cooled Metastable Helium-recoil Atom Spectroscopy

2003 – 2005 \$ 265,000

Professor S.J. Buckman and Dr J. Lower

A Microscope for Molecular Reactions

2003 – 2005 \$ 245,000

Dr M. Buda

Asymmetric InP-based Structures for High Power Laser Diodes at 1400-1500 nm for Pumping Optical Amplifiers Used in Communication Systems

2003 – 2006 \$ 165,000

Dr Y. Chen and Professor L.T. Chadderton

Formation Mechanism and Controlled Growth of Carbon Nanotubes

2004 – 2006 \$ 260,000

Dr S.-H. Chung

Theoretical Studies on the KcsA Potassium Channel and L-type Calcium Channels

2002 – 2004 \$ 231,000

Professor R.L. Dewar and Dr R. Ball

Studies of Turbulence and Coherent Structures in Quasi Two-dimensional Plasmas and Fluids

2003 – 2007 \$ 605,000

Professor R.L. Dewar and Dr S. Hudson

Existence and Stability of a Model for Three Dimensional Toroidal Plasma Equilibria

2004 – 2006 \$ 255,000

Professor G.D. Dracoulis, Dr A.P. Byrne, Dr T. Kibédi, Dr R.A. Bark, Professor P.M. Walker and Dr J. Gerl

Isomers as Probes of Nuclear Structure and Sources of Energetic Protons

2003 – 2005 \$ 402,000

Professor G.D. Dracoulis, Dr G.J. Lane and Dr T. Kibédi

Characterising Nuclei Far from Stability

2004 – 2006 \$ 240,000

Professor R.G. Elliman and Dr J. Valenta

Novel Silicon-based Photonic Device
2003 – 2005 \$ 255,000

Dr S.T. Gibson and Professor B.R. Lewis
Reaction Transition States of Halide-cluster Complexes via Velocity-map Imaging of Photoelectrons
2004 – 2006 \$ 300,000

Professor J.H. Harris, Dr B.D. Blackwell, Dr J. Howard and Dr M.G. Shats
Localised Instabilities in Magnetically Confined Plasmas Heated by Radio Waves
2003 – 2005 \$ 162,000

Dr D.J. Hinde, Dr M. Dasgupta and Dr K. Hagino
Dynamics of Nuclear Fusion: Evolution through a Complex Multi-Dimensional Landscape
2003 – 2005 \$ 575,000

Professor C. Jagadish
Fabrication and Monolithic Integration of II-V Semiconductor Photonic Devices using Impurity Free Interdiffusion
2003 – 2006 \$ 510,000

Professor C. Jagadish and Dr H.H. Tan
Selective Area Growth of Semiconductor Quantum Dots for Optoelectronic Applications
2004 – 2006 \$ 260,000

Dr A.S. Kheifets and Professor Dr J. Ullrich
Two-electron Atomic Photoionization in Superstrong Electromagnetic Field
2004 – 2006 \$ 225,000

Dr M.A. Knackstedt, Professor E. Seeman, Dr A.P. Roberts and Dr C.H. Arns
Assessing Bone Quality and Health: Experimental Imaging, Structural Characterisation, and Mechanical Modelling of Bone in 3D
2004 – 2006 \$ 425,000

Professor W. Krolikowski and Dr O. Bang	
<i>Solitons and Localized Structures in Nonlocal Nonlinear Media</i>	
2004 – 2007	\$ 255,000
Professor J.D. Love	
<i>Miniaturised Adiabatic Light Processing Devices</i>	
2004 – 2006	\$ 220,000
Dr J. Lower	
<i>Dynamic Correlations and Coherence Effects in Two-electron Emission Processes</i>	
2003 – 2006	\$ 380,000
Professor B. Luther-Davies and Dr R. Jarvis	
<i>Integrated Magneto-optic Waveguide Materials and Devices</i>	
2004 – 2006	\$ 400,000
Professor N. Manson and Dr M.J. Sellars	
<i>Storage of Nonclassical Light in a Solid</i>	
2003 – 2005	\$ 265,000
Dr C.R. Morton	
<i>Development of Advanced Detection Systems for Accelerator Mass Spectrometry</i>	
2004 – 2006	\$ 200,000
Professor B. Ninham	
<i>Ionic Dispersion Forces in Physical Chemistry: Implications for pH, Electrochemistry, Nanoparticle Formation and Organic Synthesis</i>	
2003 – 2005	\$ 270,000
Dr M. Petravac and Professor J.S. Williams	
<i>Nanocavities and Nanoparticles in Silicon-base Materials Tailored by Ion Bombardment</i>	
2003 – 2005	\$ 350,000

Dr M.C. Ridgway and Dr H. Bernas

Nanocavities in Si: Structural Evolution and Metal Gettering

2002 – 2004 \$ 183,000

Dr M.C. Ridgway, Dr A.P. Byrne and Dr K.M. Yu

Atomic-scale Identification of Amorphisation and Relaxation Processes in Compound Semiconductors

2003 – 2005 \$ 285,000

Dr M. Sellars

Development of a Quantum Computer Based on Solid State Optical Impurity Sites

2003 – 2005 \$ 130,000

Dr J.P. Sullivan

Experiments with Antimatter: Investigating Positron Interactions with Atoms, Molecules and Materials

2004 – 2008 \$ 500,000

Dr M. Vos, Professor E. Weigold and Dr A.S. Kheifets

Electron Momentum Spectroscopy of Correlated Nanoscale Structures

2003 – 2005 \$ 295,000

Dr D.R.M. Williams, Dr E.M. Sevick and Professor B.W. Ninham

Salt, Sugar and Sequence: The Effect of Molecular Forces on Polymer Conformation

2004 – 2006 \$ 480,000

Dr A.N. Wilson

Superdeformed Nuclei and Their Decay: Challenging Nuclear Models and Probing Quantum Tunnelling

2004 – 2006 \$ 140,000

Professor J. Chappell and Dr T. Esat (administered by RSES)

Millennial-scale Instability of Sea Level and the Climate System: New Analysis of Coral Terraces in Papua New Guinea

2003 – 2005 (\$ 295,000)

Professor J. Chappell, Dr M. Honda, Dr D. Fabel and Dr L.K. Fifield (administered by RSES)

Production and Transport of Soil and Sediments, Determined by Cosmogenic Radionuclides and Noble Gases

2003 – 2005 (\$ 295,000)

University of Melbourne

Professor N. Fletcher (ANU Participant)

Acoustics of the Didjeridu

2002 – 2004 (\$ 253,000)

University of New South Wales

Dr M.A. Knackstedt (ANU Participant)

Structures and Properties of Tissue Engineering Matrices for Cartilage and Bone: Imaging, Visualising and Modelling Tissue/Scaffold Constructs in 3D

(Total \$ 312,000)

2003 – 2005 (ANU share) \$ 211,000

University of Queensland

Professor V.V. Bazhanov, and Professor R.J. Baxter (ANU Participants)

Algebraic Structures in Mathematical Physics and their Applications

(Total \$ 457,836)

2002 – 2004 (ANU share) \$ 92,000

University of Sydney

Professor A. Snyder (ANU Participant)

The Physics of Network Computation: Mathematical Modelling of the Nonconscious

2002 – 2004 (\$ 203,000)

ARC Discovery Project Grants and Australian Research Fellowships

Dr V. Craig

Surface Adsorption, Repulsion and Attraction: A New Experimental Approach to Surface Forces

2002 – 2006 \$ 573,782

Dr G.J. Lane

Structure of Exotic Neutron-Rich Nuclei Populated using Novel Reaction Mechanisms

2003 – 2007 \$ 566,605

Dr D. Neshev and Dr A. Sukhorukov

Light Control in Nonlinear Periodic Structures

2004 – 2009 \$ 755,000

Dr T.J. Senden

Dynamic Force Microscopy of Small Molecular Assemblies

2002 – 2006 \$ 391,782

ARC Discovery Project Grants and Australian Postdoctoral Fellowships

Dr J. Bradby

Mechanical Deformation of Layered Semiconductor Structures

2003 – 2005 \$ 234,000

Dr Y. Chen and Ms Y.J. Chen (APD Fellowship)

Boron Nitride Nanotube Synthesis and Applications

2004 – 2006 \$ 410,000

Dr V. Craig, A/Professor S. Biggs and Dr C. Neto (APD Fellowship)

Nanorheology: Hydrodynamic Slip in Newtonian Fluids

2003 – 2006 \$ 291,000

Professor R.G. Elliman, Dr E. Krausz, Dr T.D.M. Weijers (APD Fellowship) and A/Professor S. Choi

The Physical and Optical Properties of Self-Assembled Si Nanocrystals

2003 – 2005 \$ 318,035

Dr L. Fu

Growth and Intermixing of Quantum Dots for Multi Wavelength Infrared Photodetectors
2003- 2005 \$ 255,000

Dr C.J. Glover

Applying Advanced Synchrotron Radiation Based Techniques to Determine the Connection between the Geometric and Electronic Structure of Semiconductor Nanocrystals

2003 – 2005 \$ 249,500

Dr S. Kluth

Ion Implantation Induced Diffusion and Defect Evolution in Si Nanostructures

2003 – 2005 \$ 242,700

ARC Discovery Project Grant and Australian Professorial Fellowship

Professor M.T. Batchelor

The Mathematics and Physics of Interacting Systems

2003 – 2007 \$1,122,000

ARC Discovery Project Grants and QEII Fellowships

Professor S.T. Hyde, Dr T. Aste and Dr T. Di Matteo (QEII Fellowship)

The Architecture of Networks: Characterisation and Visualisation of Complex Systems as Fluctuating Networks

2003 – 2007 \$ 687,275

Dr S. Ohnishi

Friction and Capillary Forces

2003 – 2008 \$ 548,000

Dr J. Wong-Leung (QEII Fellowship) and Professor B.G. Svensson

Ion Implantation Processing in Silicon Carbide for Microelectronic Applications

2002 – 2006 \$ 619,411

Dr W. Xu

Generation of Coherent-hypersound from Semi-conductor Systems

(Transferred from University of Wollongong	Total \$ 354,160)
2002 – 2005 (ANU share)	\$ 249,628

ARC Federation Fellowship

Professor S. Hyde

Self-assembly and Complexity: Networks and Patterns from Materials to Markets

2004 – 2009	\$1,519,710
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Professor C. Jagadish

Ordered Semiconductor Nanostructures for Electronics and Photonics Applications

2004 – 2009	\$1,519,710
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Professor Y. Kivshar

Nonlinear Photonics and All-optical Technologies

October 2002 – November 2007	\$1,448,515
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Professor B. Luther-Davies

Creation of a Novel Photonic and Nanostructured Materials by Ablation of Solids with Ultra Fast Lasers

2002 – 2007	\$1,481,765
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ARC Linkage – Infrastructure Equipment & Facilities (LEIF)

Professor S.J. Buckman, Professor J.S. Williams, Professor R.P. McEachran, Dr J.P. Sullivan, Dr M.J. Brunger, Professor P.J. Teubner, Dr A. Hill, Dr P. Meakin, A/Professor B. Lohmann, A/Professor E.M. Gray and Dr J. Mitroy

National Positron Beamline Facility

2004	\$ 512,573
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Professor G.D. Dracoulis, Professor A.P. Byrne, Professor R.G. Elliman, A/Professor J. O'Connor, Dr K.S. Butcher and Dr H. Timmers

National Heavy Ion Accelerator

2004	\$ 508,374
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Professor C. Jagadish, Professor J.S. Williams, Professor B. Luther-Davies, Dr T.J. Senden, Professor L. Faraone, Professor M. Gal, Dr M.A. Stevens-Kalceff, A/Professor B.F. Usher and A/Professor M.R. Phillips

High Performance Optical and Electronic Coatings Facility

2004 \$ 535,452

University of Sydney

Professor R. Elliman (ANU Participant)

Advanced Spectroscopy for Nano-characterisation of Materials Chemistry and Properties

2004 (\$ 347,886)

University of Sydney

Professor J. Harris, Dr J. Howard, Dr B. Blackwell, Professor R. Boswell, Dr C. Charles and Dr M. Shats (ANU Participants)

Interactive Network for Plasma and Surface Analysis

(Total \$ 726,000)

2004 (ANU Share) \$ 157,389

University of Western Australia

Professor E. Weigold and Dr M. Vos (ANU Participants)

National Facility for Electron Spin Correlations and Spintronics

(Total \$ 590,309)

2004 (ANU Share) \$ 188,241

University of Sydney

Professor B. Luther-Davies (ANU Participant)

Raman Photonic Device Facility

2004 (\$ 298,052)

University of Sydney

Dr M. Ridgway (ANU Participant)

Fluorescence Detector for the Australian National Beamline Facility

2004 (\$ 503,000)

University of Technology, Sydney

Dr H.H. Tan (ANU Participant)

Electron Beam Induced Deposition and Ablation Nanofabrication Facility

2004 (\$ 184,163)

ARC Linkage International Award

Dr R. Ball, Professor R.L. Dewar and Dr Waelbroeck

Low-order Dynamical Models for Non-linear Fluid Behaviour in Quasi Two-dimensional Plasmas

2003 – 2005 \$ 9,000

Prof. M.T. Batchelor, Dr A. Kuniba and Dr M. Takahashi

Physical Properties of Exactly Solved Quantum Spin Systems

2004 – 2007 \$ 56,000

Professor S.J. Buckman

Jointly with Flinders University

Environmental and Technological Applications of Electron-driven Processes

(Total \$ 33,000)

2003 – 2005 (ANU Share) \$ 16,500

Dr W. Xu

Optoelectronic Properties of Los-dimensional Semiconductor Systems and Semiconductor Nanostructures under Terahertz Free Electron Laser Radiation

2003 – 2004 \$ 28,800

ARC Linkage International Fellowship

Professor V.V. Bazhanov

Low-dimensional Quantum Systems

2004 \$ 72,000

Professor E. Weigold, Professor S.J. Buckman and Dr M. Lange

Investigating Near-threshold Atomic and Molecular Collision Processes with Multiparameter Detection Techniques

2003 – 2004 \$ 77,649

ARC Linkage Projects

Dr G.G. Borg, Professor J.H. Harris and Dr H.M Jones

VHF Wireless Technologies for Last-mile Internet Access in Regional Australia

2003 – 2006 \$ 138,198

Professor R. Boswell

Development of Inert Gas Ion Beams for Fabrication of Nanostructures

2003 – 2006 \$ 300,000

Partner contribution, FEI Corp, USA

2003 – 2006 \$ 220,000

Professor B. Luther-Davies, Dr V.Z. Kolev and Dr Y. Gao

Laser Guide Star using a High Power Synchronously Pumped Optical Parametric Oscillators

2004 – 2007 \$ 330,000

Dr S. Ohnishi

Correlation between Surface Force and Morphology of Self-assembled Monolayer

2004 – 2006 \$ 39,900

University of Sydney

Professor A. Snyder (ANU Participant)

What Makes a Corporate Champion?

2002 – 2004 (\$ 210,000)

ARC Postdoctoral Research Fellowship

Dr S.J. Cavanagh

Photodissociation Dynamics of Diatomic Sulphur, S₂, and its Role in Environmentally Friendly Energy Efficient Lamps

May 2001 – April 2004 \$ 195,261

Dr P.N.K. Deenapanray

Defect Engineering of Quantum Well Interdiffusion for Optoelectronic Device Applications

July 2001 – June 2004 \$ 168,702

Dr E. Ostrovkaya

Nonlinear Atom Optics of Bose-Einstein Condensates in Optical Lattices

2003 – 2005 \$ 193,035

ARC QEII Research Fellowship

Dr H.H. Tan

Growth, Characterisation and Fabrication of GaInNAs Lasers

May 2001 – May 2006 \$ 357,590

ARC Research Networks

Dr R.L. Dewar (Convenor), Dr T. Aste and 48 other scientists

Complex Open Systems Network (COSNet)

2004 – 2009 \$1,500,000

Dr C. Kepert (Convenor, University of Sydney), Dr T. Aste and 48 other scientists

Molecular and Materials Structure Network

2004 – 2009 (\$1,500,000)

Dr C. McFarlane (Convenor, University of NSW), Dr M.A. Knackstedt and 48 other scientists

ARC Research Network for Tissue Engineering

2004 – 2009 (\$1,500,000)

ARC Special Research Initiatives – Research Networks Seed Funding

Dr K. Baldwin

Network for Optical and Quantum Science and Technology

2004 \$ 30,000

Professor R.L. Dewar

Energetically Open Systems Research Network Study
2003 – 2004 \$ 10,000

Professor C. Jagadish
Australian Semiconductor Nanotechnology Network
2003 – 2004 \$ 10,000

Professor J.S. Williams
Innovative Materials Production, Processing and Analysis Network
2003 – 2004 \$ 30,000

ARC Strategic Partnerships with Industry, Research and Training Scheme (SPIRT)
Professor J.H. Harris, Dr G.G. Borg, Dr N.M. Martin*, Dr D. Thorncraft and Mr L. Lungu
CEA Technologies and Neolite Neon
The Application of Plasma Antennas to Communications and Radar
2000 – 2003, extended to 2004 \$ 63,240

Australian Synchrotron Research Program

Mr B. Johannessen
Internship to Visit Advanced Photon Source at Argonne National Laboratories, USA
2004 \$ 20,000

Dr P. Kluth
Defect Evolution in Ion Implanted Si Nanostructures: TEM sample Preparation using Focused Ion Beam (FIB) Milling
2004 \$ 2,850

Dr P. Kluth
SAXS/ASAXS Analysis of Size and Shape of Metal and Semiconductor Nanocrystals Generated and Modified by Ion Implantation
2004 \$ 6,940

Dr P. Kluth

Structural Characterization of Ion Irradiated Metallic Nanocrystals in Silica using EXAFS
2004 \$ 4,370

Dr M. Ridgway
Amorphous Compound Semiconductors – Formation and Relaxation
2004 \$ 13,510

BASF A.G.

Dr M.A. Knackstedt
Fluid Penetration into Paper
2004 – 2005 \$ 220,000

BHP Billiton Petroleum

Professor W.V. Pinczewski and Dr M.A. Knackstedt
Digital Core Analysis
2003 – 2005 \$ 150,000

Business ACT Knowledge Fund, ACT Government

Professor J.D. Love
Biophotonics Development
2003 – 2004 \$ 75,000

Dr T. Senden
A Clinical Screening Device Based on a Novel Nanoparticle
2004 \$ 47,620

Commonwealth Scientific Industrial Research Organisation

Dr R. Ball
Consultancy: Cross Disciplinary Bridges in Complex Systems Science
2003 – 2005 \$ 18,000

Defence Advanced Research Project Agency, USA

Texas A & M University

Professor N. B. Manson, Professor M.S. Scully and Dr P. Hemmer

Spin-based Lattice-gas Quantum Computers in Solids using Optical Addressing

2001 – 2004

US \$ 240,000

Defence Science and Technology Organisation

Dr M. Sellars

Solid State Quantum Computing

June 2003 – June 2004

\$ 147,000

Dr M. Sellars

Solid State Quantum Computing

June 2004 – June 2005

\$ 167,000

Materials Research Laboratory

Professor C. Jagadish

Research in Novel Opto-electronic Device Fabrication

2003 – 2004

\$ 44,000

Dr H.H. Tan, Dr L. Fu and Professor C. Jagadish

Optoelectronic Device Processing

2004

\$ 100,000

Department of Defence

Defence Signals Directorate

Professor N.B. Manson and Dr M. Sellars

Quantum Computing and Quantum Cryptography Research

2004

\$ 49,000

Department of Education Science and Training

Innovation Access Programs

Professor J. Harris and Dr M. Shats

Cross Platform Studies of Fusion Plasma Confinement in Tokamaks and Stellarators

June 2003 – April 2004

\$ 50,600

Dr J. Howard

Studies of High Temperature Edge Plasma Confinement Physics using New Hyperspectral Imaging Systems

2004 – 2006

\$ 173,690

Professor B.R. Lewis

Fourteenth International Conference on Vacuum Ultraviolet Physics

2003 – 2005

\$ 55,000

Department of Industry, Tourism and Resources

Australian Photonics Cooperative Research Centre

Professor J.D. Love and Dr A. Ankiewicz

Modelling & Design of Light Processing Devices

May 1999 – April 2005

\$ 700,000

CRC for Functional Communication Surfaces

Dr M.A. Knackstedt, Dr T. Senden, Dr V. Craig, Mr R. Roberts and Dr V. Yaminsky

Program 1: *Fundamental Surface Measurements and Liquid Penetration Sciences*

July 2001 – June 2008

\$2,864,000

Program 6: *Education, Scholarship*

July 2001 – June 2008

\$ 525,000

Department of Industry, Science and Resources

Professor J. Harris *et al.*

National Plasma Fusion Research Facility

April 1997 – May 2005

\$8,700,000

Dr C. Charles and Professor R.W. Boswell

Collaboration with CRC for Satellite Systems and AUSPACE – Development of Plasma Thruster for Tests at ESA

2004 – 2005 \$ 300,000

Edith and Joy London Foundation

Dr T.J. Senden

Grant to Host Materials and Complexity II

November 2004 \$ 6,000

European Projects

Dr P. Richmond (Chair), Dr T. Aste, Dr T. Di Matteo and more than 100 scientist from 14 European Countries

European Union COST – P10

2003 – 2007 \$9,500,000

Feoder-Lynen Humboldt Fellowship

Dr P. Kluth

2003 – 2005 \$ 130,000

Major Equipment Committee (MEC), ANU

Professor S.J. Buckman, Dr J. Sullivan, Professor J.S. Williams and Professor R.P. McEachran

National Positron Beamline Facility

2004 \$ 100,000

Professor G.D. Dracoulis, Professor A.P. Byrne, Professor R.G. Elliman, A/Professor J. O'Connor and Dr K.S. Butcher and Dr H. Timmers

National Heavy Ion Accelerator

2004 \$ 100,000

Dr S. Gibson

Next Generation Particle Imaging Detector for High Resolution Photoelectron Spectroscopy

2004 \$ 140,427

Professor C. Jagadish, Professor J.S. Williams, Professor B. Luther-Davies, Dr T.J. Senden, Professor L. Faraone, Professor M. Gal, Dr M.A. Stevens-Kalceff, A/Professor B.F. Usher and A/Professor M.R. Phillips

High Performance Optical and Electronic Coatings Facility

2004 \$ 250,000

Mr K. Lonsdale

Provide a High Performance Electronic Instrument Library

2004 \$ 149,800

Dr A. Samoc

High Performance UV-visible Near Infrared Spectrophotometer for Testing of Photonic Materials and Structures

2004 \$ 133,328

Dr H.H. Tan

Sub-micron Holography Mask Aligner for Planar Photonics and Nano Structure Applications

2004 \$ 437,300

MEC Contribution to Externally-led LEIF – University of Sydney

Professor R. Elliman (ANU Participant)

Advanced Spectroscopy for Nano-characterisation of Materials Chemistry and Properties

2004 \$ 10,000

MEC Contribution to Externally-led LEIF – University of Sydney

Professor J.H. Harris, Dr J. Howard, Dr B.D. Blackwell, Professor R.W. Boswell, Dr C. Charles and Dr M.G. Shats (ANU Participants)

Interactive Network for Plasma Surface Analysis

2004 \$ 72,000

MEC Contribution to Externally-led LIEF – University of Western Australia

Professor E. Weigold and Dr M. Vos (ANU Participants)

National Facility for Electron Spin Correlations and Spintronics
2004 \$ 73,000

McKinsey and Company

Professor A. Snyder

What Makes a Corporate Champion?

2002 – 2004 \$ 60,000

National Health & Medical Research Council Grant

Dr S.-H. Chung

Investigation of Biological Ion Channels: Theoretical Formulation, Computer Simulation and Experimental Verification

2002 – 2004 \$ 620,000

National Projects

Italian Ministry of Education Research and Technology Project

Dr R.N. Mantegna, Dr M. Marsili, Dr M. Bernaschi, Dr E. Scalas, Dr G.M. Gallo, Dr M. Gallegati,
Dr V. Marinari, Dr G. Susinno, Dr T. Aste and Dr T. Di Matteo

High-frequency Dynamics of Financial Markets

2003 – 2006 \$3,150,000

Petroleum Development of Oman

Professor W.V. Pinczewski and Dr M.A. Knackstedt

Evaluation of Yibal Field Core

2004 \$ 90,000

Redfern Polymer Optics

Professor B. Luther-Davies *et al*

Industry Funded PhD Scholarship

October 2001 – September 2004 \$ 90,000

Professor B. Luther-Davies, Professor W. Krolikowski, Ms R.M. Krolikowska, Mr J. Bottega, Mr I. McRae and Mr C. Macleod

Polymer Waveguides & Integrated Optics

May 2002 – June 2004

\$ 108,000

The Asian Office of Aerospace Research and Development

Conference Support

Professor J.D. Love

OSA Topical meeting on Bragg Grating, Poling & Photosensitivity (BGPP)/Australian Conference on Optical Fibre Technology (ACOFT)

2004

\$ 7,500

The Ian Potter Foundation International Travel Grant

Centre for Resource and Environmental Studies

Dr F.P. Mills

Climate Variability and Surface Ultraviolet Radiation

June to September 2004

\$ 1,875

US Army Research Office – East

Travel Grant for Scientific Visit to Professor Mark Saffman at University of Wisconsin, Madison, USA

Professor W. Krolikowski

\$.....4,200

Victorian Department of Innovation, Industry & Regional Development

Australian Synchrotron

Professor B.R. Lewis

Fourteenth International Conference on Vacuum Ultraviolet Physics

2003 – 2005

\$ 22,000

Woodside Petroleum

Professor W.V. Pinczewski and Dr M.A. Knackstedt

NW Shelf Core Analysis

2004

\$ 100,000

Sale of Equipment Designed and Built In-house

Mr A. Hyde and Dr A. Stewart

Mk4 Surface Force Apparatus and Friction Apparatus

Purchased by Sanpany Instruments, Taiwan, R.O.C.

\$ 115,000

Appendix – Interactions with the Faculties

Professor N. Akhmediev lectured in *Nonlinear Dynamics* (PHYS3002) to 3rd year undergraduate students in physics.

Dr A. Ankiewicz lectured and demonstrated in *Devices for Optical Systems & Networks* (PHYS3051) to 3rd & 4th year undergraduates in physics and engineering.

Dr R. Ball supervised undergraduate students, Susan Batley and Revantha Remanayke, both PhB Research Scholars, during the second semester.

Dr T.T. Barrows gave a lecture and practical session to a third year class from the Department of Archaeology and Natural History, RSPAS.

Professor B.T. Batchelor lectured the Mathematics 3rd year course MATH3322 *Mathematical Methods*.

Dr A.M. Baxter of the Department of Physics, Faculty of Science, carried out research on nuclear spectroscopy in the Nuclear Physics Department.

Dr B.D. Blackwell collaborated with Dr. H.J. Gardner on "Real Time Data Visualization over Local and Remote Networks".

Dr B.D. Blackwell and Dr K.A. Walshe, Power Quality Associates, Sydney taught a full 4th year course in "Power Electronics" in the Department of Engineering, and supervised two honours projects there.

Dr G.G. Borg supervised 4 honours students in the Department of Engineering

Professor A.P. Byrne holds a joint appointment as Head of the Department of Physics, Faculty of Science.

Dr M. Dasgupta and Professor D.J. Hinde supervised two students from the Department of Physics, The Faculties, being Michael Lane in a Graduate Diploma in Science (Physics) project entitled "Optimization of a Novel Separator of Nuclear Fusion Products" and Nick Herrald in a 3rd year special research project entitled "Deep-sub-barrier Fusion".

Professor R.G. Elliman was a member of the PhD supervisory panel of Helmut Mackel, FEIT. He also was a guest lecturer in ENGN4507 (FEIT) and guest lecturer and lab demonstrator in PHY3033 (Physics).

Dr T. Esat holds a joint appointment with the Research School of Earth Sciences.

Dr L.K. Fifield continued collaborations with Professor P. De Deckker and Dr B. Opdyke of the Department of Earth and Marine Sciences and is co-supervisor of Daniel Wilkins, a joint PhD student, with Professor De Dekker.

Dr L.K. Fifield and Dr V. Levchenko supervised Matthew Lenehan from the Department of Earth and Marine Sciences in a Master of Philosophy project entitled "Origin, Nature and Mobility of Salt in the Regolith".

Dr M. Gulacsi gave the *Statistical Physics and Quantum Field Theory* honours course PHYS3041 and the *Statistical Mechanics* honours course PHYS3042.

Professor J.H. Harris presented a 3 unit, 3rd year course on *Plasma Physics* in the Department of Physics.

Professor C. Jagadish gave guest lectures as part of the course on *Microelectronics and Photonics*, ENGN4507.

Dr P. Kluth and Dr S. Kluth presented a course on *Microelectronic & Photonic Technology*, ENGN4507.

Dr G.J. Lane taught half of Physics 3033 (Nuclear Physics) in the Department of Physics, Faculty of Science and was an Advanced Studies Instructor for the PhB course SCNC2101

Professor J.D. Love lectured in *Optical Fibre & Waveguide Transmission* (PHYS3050) & *Devices for Optical Systems & Networks* (PHYS3051) to 3rd & 4th year undergraduates in physics & engineering, as well as single lectures on photonics in PHYS1101 & ENGN4519. He was also Convenor for distance learning courses PHYS8510 & PHYS8511 in photonics as part of the Master of Contemporary Science degree and also for the Master of Photonics degree.

Dr M.C. Ridgway and Dr C.J. Glover organised and ran a 4th year physics course, at the Faculty of Science on Synchrotron Science.

Dr R.E. Robson gave a lecture course on *Life Physics* PH1004 which was delivered to students in Physics, The Faculties.

Dr A. Rode continued his collaboration with Dr A. Christy, Department of Geology, on "Mass-Spectroscopy of Carbon Nanostructures".

Dr A. Samoc presented "Principles and Demonstrations of the Use of a Prism Coupler" for engineering students.

Dr M. Samoc and Professor B. Luther-Davies continued their collaborations on "NLO Properties of Organometallics" with Dr Mark G. Humphrey, Department of Chemistry.

Dr A.G. Truscott gave a honours course on *Atom Optics* which was delivered to students in Physics, The Faculties.

Dr A.N. Wilson holds a joint appointment with the Department of Physics, Faculty of Science.

Nine students from the Department of Physics, Faculty of Science, carried out projects in the Department of Nuclear Physics as part of the PhB/DSP programs. Four of these (John Altin, Ben Swift, Sebastien Yuen and Jeff Rogers) were supervised by **Dr A.N. Wilson and Dr P.M Davidson**, one (Roger Senior) by **Professor A.P. Byrne and Dr G.J. Lane**, and four (Paul Altin, Paul Bonato, Kirsten Gottschalk and Jemma Pollaris) by **Professor A.P. Byrne and Dr A.N. Wilson**.

Appendix – Internal Management

School Committees

Faculty Board

Together with meetings of Heads of Departments, Faculty Board is the principal mechanism for advising the Director on a regular basis. It reports to the Board of the Institute of Advanced Studies. The Board spends a significant proportion of its time on issues affecting the environment in which the School operates — especially funding and the impact of industrial and other legislation — rather than on strictly academic issues. Members are:

Professor Jim Williams (Chair)
Professor Rod Boswell (Chair of Faculty)
Professor Stephen Buckman, Associate Director (Academic)
Professor Neil Manson, Associate Director (Students)
Dr David Williams (Head, AM)
Professor Brenton Lewis (Head, AMPL)
Professor Allan Snyder (Head, CfM)
Professor John Mitchell (Deputy Head, CfM)
Professor Rob Elliman (Head, EME)
Professor Barry Luther-Davies (Head, LPC)
Professor Yuri Kivshar (Head, NLPC)
Professor George Dracoulis (Head, NP)
Professor John Love (Head, OSG)
Professor Jeffrey Harris (Head, PRL)
Professor Vladimir Bazhanov (Head, TP)
Mr Devin Ramdutt (Student Representative)
Dr Rowena Ball (Faculty Representative)
Professor Aidan Byrne (Faculty Representative)
Mr Rana Ganguly (By Invitation – non-voting continuing)
Mr Kevin Lonsdale (By Invitation – non-voting continuing)
Mr Andrew James (By Invitation – non-voting continuing)
Mrs Gayle Samuel

Faculty

The Faculty of the School consists of all academic staff, including long-term visitors and postgraduate students. Faculty functions as a means for informing academic staff on activities within the School.

Professor R.W. Boswell (Chair)
Mrs Gayle Samuel (Secretary)

Heads of Departments

Heads of Departments met with the Director throughout the year and, where appropriate, senior administrative staff attended. Aspects of the School budget and strategic planning dominated the meetings. Because of the School's requirements for major items of equipment, consideration of bids to the ARC Linkage Infrastructure, Equipment and Facilities (LIEF) and the University Major Equipment Committee was again given high priority. Issues concerning the Institute Planning Committee grants and the Vice-Chancellor's Plan for Growth Fund were also of importance.

Professor Jim Williams (Chair)
Professor Stephen Buckman, Associate Director (Academic)
Professor Neil Manson, Associate Director (Students)
Heads of Departments/Centres

Advisory Groups

At the beginning of 1998 the Director established a number of internal groups to offer advice regarding major School activities to optimise the academic functions of the School. Together with the Heads of Departments meetings, they prove extremely effective in formulating a cohesive approach to School management.

Budget Strategy Advisory Group

Professor Jim Williams (Chair)
Professor Stephen Buckman
Mr Rana Ganguly
Mr Andrew James

Commercialisation Advisory Group

Dr Tim Senden (Chair)
Professor Rod Boswell
Mr Tony Cooke (Anutech representative)
Professor Jeffrey Harris
Professor Barry Luther-Davies
Professor Jim Williams

External Grants Advisory Group

Professor Stephen Buckman (Chair)

Professor Rob Elliman
Professor Jeffrey Harris
Dr David Hinde
Dr Mark Ridgway

Major Equipment & LIEF Advisory Group

Professor Brenton Lewis (Chair)
Professor Stephen Buckman
Professor Robert Elliman
Dr Keith Fifield
Professor John Love

General Staff & Facilities Advisory Group

Professor Stephen Buckman (Chair)
Ms Julie Dalco
Dr Keith Fifield
Mr Rana Ganguly
Mr Ian McRae
Dr David Weisser
Ms Renee Vercoe
Mrs Gayle Samuel

Student Advisory Group

Professor Neil Manson (Chair)
Dr Aidan Byrne
Dr Mark Ridgway
Dr Nanda Dasgupta
Dr John Howard

Other School Committees (alphabetically)

Annual Report Committee

Professor Jim Williams
Professor Steve Buckman
Dr Keith Fifield
Dr Mark Knackstedt
Professor Brenton Lewis
Dr Timothy Wetherell
Ms Martina Landsmann

Colloquium Committee

Professor C. Jagadish (Chair)
Professor Hans Bachor
Dr Rowena Ball
Professor Robert Crompton
Professor Rob Elliman
Professor Neville Fletcher
Dr Miklos Gulascsi
Professor David Hinde
Dr Matthew Sellars
Dr Tim Senden
Ms Laura Walmsley

Computing Policy Advisory Committee

Dr Boyd Blackwell (Chair)
Dr Gordon Foote
Dr Stephen Gibson
Professor John Mitchell
Dr Elena Ostrovskaya
Dr Marek Samoc
Dr Adrian Sheppard
Dr Hark Hoe Tan
Executive members:
Mr Rana Ganguly
Mr Kevin Lonsdale
Dr Shiu Tin

Fixed-Term Academic Appointments Committee

To increase flexibility the Chair may second other School staff if required. Core members are:

Professor Stephen Buckman (Chair)
Dr Nanda Dasgupta
Professor Rob Elliman (until February)
Dr David Hinde (from March)
Professor John Love
Dr David Williams

Local Promotions Committee

Professor Jim Williams, Director (Chair)
Professor Rob Elliman
Professor Adrienne Hardham (RSBS)
Professor Stephen Hyde

Professor Neil Manson
Mrs Gayle Samuel

Occupational Health & Safety Committee

Mr Anthony Hyde (Chair)
Mr David Anderson
Mr Michael Blacksell
Mr Alan Cooper
Professor Keith Fifield
Mr Kevin Lonsdale
Mr Gary Picker
Dr Maarten Vos
By invitation:
Mr Roy Schmid (ANU OH&S Unit)
Mr Tom Halstead

Prizes & Awards Committee (established in April)

Professor C. Jagadish (Chair)
Professor Bob Crompton
Professor Neville Fletcher
Professor Yuri Kivshar
Dr David Williams

Quality Review Submission Committee

Professor Stephen Buckman
Professor George Dracoulis
Professor Brenton Lewis
Dr David Williams
Mr Rana Ganguly
Ms Martina Landsmann

School Environmental Committee (established in July)

Mr Rana Ganguly
Ms Helen Hawes
Mr David Kelly
Mrs Marj O'Neill
Ms Lyndell Paseka
Dr Adrian Sheppard
Mr Nathanael Smith
Mr Ken Staples
By Invitation:

Mr John Sullivan (ANU Facilities and Services)

School Resource Review Committee

Professor Stephen Buckman

Professor George Dracoulis

Professor Robert Elliman

Professor Brenton Lewis

Professor Jeffrey Harris

Professor Murray Batchelor

Mr Ian McRae

Mr Kevin Lonsdale

Mr Rana Ganguly

Appendix – Invited Conference Presentations & Lectures

Legend: * *External to the University*
 # *Member of another area of this University other than this School*
 Presenter of contributed paper is underlined

The 2nd International Conference on Computers and Devices for Communication (CODEC), Kolkotta, India, 1–3 January

Fu, L. — *Quantum Well and Quantum Dot Intermixing for Photonic/Optoelectronic Integrated Circuits*

4th Australasian Conference on General Relativity and Gravitation, Monash University, 7–9 January

Hall, M.J. — *Exact Uncertainty Approach to Quantum Mechanics and Quantum Gravity*

International Summer School New Concepts in Photonics and Optical Communications, University of Burgundy, Dijon, France, 21–25 January

Akhmediev, N.N. — *Dissipative Solitons*

Commercial and Biomedical Applications of Ultrafast Lasers VI Symposium, Photonics West, San Jose, USA, 24–29 January

Rode, A.V., Madsen, N.R., Kolev, V.Z., Gamaly, E.G., Chan, A., Dawes, J.M. and Luther-Davies, B. — *Subpicosecond and Picosecond Laser Ablation of Dental Enamel: Comparative Analysis*

XIII Gaseous Electronics Meeting, Murramarang, 1–5 February

Boswell, R.W. — *Ions in the Fire*

Robson, R.E., Petrovic, Z.Lj.* and Raspopovic, A.* — *Negative Absolute Mobility, Joule Cooling and the Second Law*

White, R.D.*, Robson, R.E., Ness, K.F.*, Petrovic, Z.L.*, Raspopovic, Z.* and Dujko, S.* — *Transient Kinetic Phenomena of Electron Swarms in Electric and Magnetic Fields*

24th Australian Colloid and Surface Science Student Conference, Sunset Cove, 2–6 February

Evans, D. — *NanoRheology: An Atomic Force Microscopy Technique to Dynamically Study Properties of Materials of Small Volumes*

Italian-Australian Specialist Workshop on Plasma Treated Materials, Batemans Bay, 3 February

Boswell, R.W., Charles, C. and Brault, P.* — *High Plasma Density Sputter Deposition of Platinum Clusters for Fuel Cell Electrodes*

28th Annual Condensed Matter and Materials Meeting, Wagga Wagga, 3–6 February

Shadrivov, I., Sukhorukov, A., Zharov, A. and Kivshar, Y.S. — *Left-handed Materials Recent Progress and Perspectives*

Khalil, S.S.*, Stewart, A.M., Ridgway, M.C., Chadderton, L.T., Llewellyn, D.J. and Byrne, A.P. — *Formation of Ion Tracks in Single-Crystal Indium Phosphide Irradiated by Swift Heavy Ions*

International Workshop: Quantum Integrable Systems and Infinite Dimensional Algebras, Kyoto, Japan, 4–10 February

Bazhanov, V.V. — *Higher-level Eigenvalues of Q-operators and Schrödinger Equation*

6th South Australian Physical Chemistry Symposium, University of South Australia, 13 February

Senden, T.J. — *Microcomputed Tomography – Granular Materials, Foams, Rock and Bone*

Short-ranged Interactions in Soft Condensed Matter, Regensburg, Germany, 26 February

Craig, V. — *Specific Ion Effects in Bubble Coalescence*

Functional Ceramics and High Tc Superconductivity, Stockholm, Sweden, 8–12 March

Gulacsi, M. — *High Temperature Superconductivity: The Attractive Up Regime*

The 12th Seoul International Symposium on the Physics of Semiconductors and Applications (ISPSA-2004), Kyungju, Korea, 14–16 March

Elliman, R.G. — *Light Emission from Silicon Nanocrystals – Size Does Matter*

The 2nd International Workshop on Advanced Materials for Information Technology & Applications, Kyung Hee University, South Korea, 17 March

Elliman, R.G. — *Aspects of the Optical Properties of Silicon Nanocrystals*

Correlated Materials, Mesoscale Science and Novel Electronic Materials, Boston, USA, 17–19 March, 2004

Gulacsi, M. — *High Temperature Superconductivity: The Attractive Up Regime*

Samsung Advanced Institute of Technology, Suwon, South Korea, 18 March

Elliman, R.G. — *Light Emission from Silicon Nanocrystals*

Pre-APS Workshop on Nanoscience and Nanostructured Materials, Montreal, Canada, 19–20 March

Jagadish, C. — *Quantum Dots for Optoelectronic Devices*

International Symposium on Novel Materials Processing by Advanced Electromagnetic Energy Sources (MAPEES), Osaka, Japan, 19–22 March

Boswell, R.W., Charles, C. and Brault, P.* — *High Plasma Density Sputter Deposition of Platinum Clusters for Fuel Cell Electrodes*

March Meeting of the American Physical Society, Montreal, Canada, 23–26 March

Hernandez-Zapata, E. — *Conformations of a Semi-flexible Diblock Copolymer in a Poor Solvent Solution*

Jagadish, C. — *Quantum Dot Intermixing for Optoelectronic Device Integration*

International Symposium on Musical Acoustics, ISMA 2004, Nara, Japan, 31 March – 3 April

Fletcher, N.H. — *The Leaf-reed: The Simplest Woodwind Instrument?*

HRIBF Workshop on In Beam Gamma-Ray Spectroscopy, Oak Ridge National Laboratory, USA, 5–7 April

Stuchbery, A.E. — *Transient Field and Recoil-in-vacuum Techniques for g-factor Measurements on Radioactive Ion Beams*

High-Power Laser Ablation 2004, Taos, USA, 25–30 April

Luther-Davies, B., Gamaly, E.G., Rode, A.V., Kolev, V.Z., Madsen, N.R., Duering, M.* and Gieseckus, J.* — *Applications of High-power Slow Mode-locked Lasers for Ablation and Nonlinear Optics*

International Quantum Electronics Conference (IQEC), San Francisco, USA, 17–21 May

White, R.T.*, He, Y.*, Orr, B.J.*, Kono M. and Baldwin, K.G.H. — *Chirp Characterization of a High Resolution, Low-Chirp, ns-Pulsed Optical Parametric Oscillator/Amplifier*

Baldwin, K.G.H., Sprengers, J.P.*, Ubachs, W.*, Lewis, B.R. and Gibson, S.T. — *Ultrahigh Resolution Pulsed XUV Laser Applications: Lifetimes for the Excited $^1\Pi_{uu}$ States of Molecular Nitrogen*

Baldwin, K.G.H., Uhlmann, L.J., Dall, R.G., Truscott, A.G. and Buckman, S.J. — *A High Density Metastable Helium MOT for Electron-Atom Collision Studies*

5th International Symposium on MEMS and Nanotechnology (ISMAN), Costa Mesa, USA, 7–10 June

Tan, H.H. — *Growth and Characterisation of InGaAs and InAs Quantum Dot Structures and Devices*

DSTO Workshop on Optical Communications and Optoelectronics, Adelaide, 10–11 June

Jagadish, C. — Tutorial Lecture on *Semiconductor Optoelectronic Devices*

VII International Workshop on Nonlinear Optics Applications, Konstancin, Poland, 17–20 June

Sukhorukov, A. — *Optical Vortices in Nonlinear Periodic Lattices*

Chaotic Transport and Complexity in Fluids and Plasma, Carry Le Rouet, France, 20–26 June

Dewar, R.L. — *Quantum Chaos Analysis of Plasma Wave Spectra*

Ball, R. — *Dynamical Systems Modelling of Turbulence-shear Flow Interactions in Magnetized Fusion Plasmas*

International Conference on Impurity Effects in Mesoscopic Systems, Stockholm, Sweden, 21–25 June

Gulacsi, M. — *Kondo Lattices*

StatPhys-Taiwan 2004: Biologically Motivated Statistical Physics and Related Problems, Academia Sinica, Taiwan, 22–26 June

Batchelor M.T. — *Statistical Physics and Microbial Mats: New Perspectives on an Ancient Dilemma*

INPC 2004, International Nuclear Physics Conference, Goteborg, Sweden, 27 June – 2 July

Dracoulis, G.D. — *High-K Isomerism*

31st European Physical Society Conference on Plasma Physics, London, 28 June – 2 July

Harris, J.H. — *Small to Mid-sized Stellarator Experiments: Topology, Confinement, and Turbulence*

7th Asia Pacific Conference on Plasma Science and Technology, Fukuoka, Japan, 29 June – 2 July

Boswell, R.W. and Charles, C. — *Current Free Double Layers in the Laboratory and their Application to Space Plasmas*

Nonequilibrium Statistical Physics of Complex Systems, Institute for Advanced Study, Korea, 29 June – 2 July

Batchelor M.T. — *Application of the Statistical Physics of Evolving Surfaces to the Growth and Form of Microbial Mats and Laminated Structures*

Day on Diffraction 2004, St Petersburg, Russia, 29 June – 2 July

Shadrivov, I., Kivshar, Y.S., Zharov, A. and Zharova, N. — *Left-handed Metamaterials and Negative Refraction*

International Conference on Electron and Photon Impact Ionization and Related Topics, Louvain-la-Neuve, Belgium, 1–3 July

Vos, M., Cooper, G.* and Chatzidimitiou-Dreismann, C.A.* — *Elastic Scattering at High Momentum Transfer, a Possible Probe of Quantum Entanglement*

ESS – Electron Scattering in Solids, from Fundamental Concepts to Practical Applications, International Workshop sponsored by the International Union for Vacuum Science, Technique, and Applications (IUVSTA), Debrecen, Hungary, 4–8 July

Vos, M. — *Modeling of Electron Energy Loss in Coincidence Experiments*

International Symposium on Quantum Fluids and Solids (QFS04), Trento, Italy, 5–9 July

Ostrovskaya, E. — *Nonlinear Dynamics and Solitons in Optically-trapped Bose-Einstein Condensates*

CRC SmartPrint Conference, Melbourne, 6–7 July

Evans, D. — *NanoRheology: A Dynamic Atomic Force Microscopy Technique to Study Interfacial Properties of Materials*

Workshop on Evolution and Predictability of Earth System, The 21st Century Earth Science COE Program, University of Tokyo, Japan, 7–9 July

Esat, T. — *Principles of Uranium-Thorium Dating and its Application to Corals from Tectonically Active Margines*

Optical Society of Korea Summer Meeting, Muju Resort, Korea, 8–9 July

Jagadish, C. — *Quantum Dots for Optoelectronic Devices*

International Conference on Statistical Physics of Quantum Systems, Sendai, Japan, 16–20 July

Batchelor M.T. — *Weakly Repulsive Interacting Bosons and Strongly Interacting Cooper Pairs and their Link via the Bethe Equations of Integrable Models*

International School of Radiation Effects in Solids, Erice, Italy, 17–29 July

Khalil, S.S.*, Llewellyn, D.J., Ridgway, M.C., Chadderton, L.T., Stewart, A.M. and Byrne, A.P. — *Track Formation and Surface Evolution in Swift Heavy Ion Irradiated Indium Phosphide*

Workshop on Mathematical Ideas in Nonlinear Optics, Guided Waves in Inhomogenous Nonlinear Media, Edinburgh, Scotland, 19–23 July

Akhmediev, N.N. — *Dissipative Solitons*

14th Vacuum Ultra Violet Conference, Cairns, Queensland, 19–23 July

White R.D.*, McEachran, R.P., Robson, R.E., Elford, M.T. and Bartschat, K.* — *Cross Sections and Transport Coefficients for Electrons in Zn Vapour*

Recent Progress in Solvable Lattice Models, Research Institute for Mathematical Sciences, Kyoto, Japan, 20–23 July

Batchelor M.T. — *Real Applications of Solvable Lattice Models*

Workshop on Dynamics of Fluids at Interfaces, Lyon, France, 26–29 July

Neto, C. and Craig, V.S.J. — *Boundary Slip in Newtonian Liquids: An Experimental Approach*

Nuclei at the Limits, International Conference, Argonne National Laboratory, USA, 26–30 July

Dracoulis, G.D. — *High-K Isomers in the Region of ^{177}Lu*

4th Australian Mars Exploration Conference, Adelaide, 31 July – 1 August

Charles, C. — *The Helicon Double Layer Thruster: The newest Space Plasma Engine*

Conference on Microscopy and Microanalysis 2004, Savannah, USA, 1–5 August

Khalil, S.S.*, Llewellyn, D.J., Ridgway, M.C., Chadderton, L.T., Stewart, A.M. and Byrne, A.P. — *Track Formation and Surface Evolution in Swift Heavy Ion Irradiated Indium Phosphide*

Arns, C.H., Knackstedt, M.A. and Mecke, K.R.* — *Euler-Poincare Characteristics of Disordered Media: An Application in Effective Medium Theories*

Gordon Conference on Laser Interaction with Metals, Proctor Academy, USA, 1–6 August

Rode, A.V. — *Ultra-fast Laser Interaction with Metals: Equilibrium vs Non-thermal Processes*

Gamaly, E.G., Juodkasis, S., A. V. Rode, Luther-Davies, B. and Misawa, H.* — *3-D Memory Bits Recording and Reading with Femtosecond Laser*

4th International Symposium on Modern Optics and its Applications, ISMOA 2004, Bandung, Indonesia, 9–13 August

Akhmediev, N.N. — *Dissipative Solitons*

International Symposium on Quantum Chaos in the 21st Century, Cuernavac, Mexico, 16–20 August

Kun, S.Y. — *Quantum Chaos Does Not Need to Lead to Meltdown in Quantum Computers*

13th International Conference on the Discrete Simulation of Fluid Dynamics, Cambridge, USA, 16–20 August

Craig, V. — *Measurements of Boundary Slip in Newtonian Fluids*

4th International Conference on Synchrotron Radiation in Materials Science, Grenoble, France, 23–25 August

Ridgway, M. — *Structure in Amorphous Semiconductors*

EPS Europhoton Conference, Lausanne, Switzerland, 29 August – 3 September

Luther-Davies, B., Ruan, Y., Li, W., Freeman, D., Rode, A., Madsen, N.R., Jarvis, R., Gamaly, E.G., Madden, S. and Kolev, V.Z. — *Chalcogenide Glass Waveguide: Basic Properties and Emerging Applications*

2004 OZ-INTIMATE Workshop, ANSTO, Sydney, 6–7 September

Barrows, T.T. — *Late Pleistocene Glaciation of Australia*

Strongly Correlated Systems Summer School, Debrecen, Hungary, 6–11 September

Gulacis, M. — *Kondo Lattices*

First Bonzenfreies Colloquium on Market Dynamics and Quantitative Economics, Alessandria, Italy, 9–10 September

Di Matteo, T. — *Interest Rates Hierarchical Structure*

Japan-Australia Colloid and Interface Science Symposium, Yamaguchi, Japan, 9–11 September

Craig, V. — *Measurements of Boundary Slip in Newtonian Fluids*

Nanoscale Properties of Condensed Matter Workshop, Stuttgart, Germany, 14–17 September

Gulacsi, M. — *High Temperature Superconductivity: The Attractive Up Regime*

18th European Colloid and Interface Society Conference, Almerimar, Spain, 19–24 September

Evans, D. — *Nanorheology: Fluid Dynamics in Confined Systems*

13th Semi-conducting and Insulating Materials Conference (SIMC) 2004, Beijing, China, 20–25 September

Fu, L. — *Impurity Free Vacancy Disordering of Quantum Wells and Quantum Dots for Optoelectronic/Photonic Integrated Circuits*

International Conference on Nuclear Data for Science and Technology, Santa Fe, New Mexico, 26 September – 1 October

Kibédi, T. and Spear, R.H. — *Electric Monopole Transitions between 0^+ States for Nuclei throughout the Periodic Table*

International Conference on Nanoscale Heterogeneities, Rome, Italy, 26 September – 1 October

Gulacsi, M. — *High Temperature Superconductivity: The Attractive Up Regime*

The Second International School of Advanced Plasma Technology, Varenna, Italy, 27 September – 1 October

Boswell, R.W. — *Electric Double Layers and their Applications*

Boswell, R.W. and Charles, C. — *Astrophysical Significance of Field Aligned Current-free Double-layers*

48th Annual Meeting of the Australian Mathematical Society, RMIT, 28 September – 1 October

Batchelor, M.T. — *Modelling Microbial Mats and Stromatolites*

EC NETIAM Forum on New and Emerging Themes in Applied Mathematics, Kaiserslautern, Germany, 29–30 September

Sheppard, A.P. — *Challenges in Visualisation, Simulation and Design of Virtual Materials*

206th Meeting of the Electrochemical Society, Inc., Honolulu, USA, 3–8 October

Tan, H.H. — *Interdiffusion Techniques for Quantum Dot Photonic Integrated Circuits*

3rd Nordic Symposium on Plasma Physics, Lyesbu, Oslo, Norway, 4–7 October

Charles, C., Boswell, R.W., Alexander, P., Meige, A., Gesto, F., Blackwell, B.D., West, M., Gowlett, P., Sutherland, O. and Aanesland, A. — *Current-free Double-layers in Expanding Plasmas*

International Symposium on Advances and Trends in Fiber Optics and Applications, ATFO, Chongqing, China, 11–15 October

Love, J.D. — *Modal Adiabaticity in Optical Fibres, Waveguides and Devices*

Symposium of North Eastern Accelerator Personnel SNEAP 2004, Ontario, Canada, 17–21 October

Weisser, D.C. — *Differentially Pumped Gas Cathode for an NEC SNICSII*

International Workshop on Volatility of Financial Markets: Theoretical Models, Forecasting and Trading, Leiden, The Netherlands, 18–29 October

Di Matteo, T. — *Wealth, Productivity and Hyperbolic Networks*

The International Symposium on Sample Returns from Solar System Minor Bodies – The First Hayabusa Symposium, Kanagawa, Japan, 20–23 October

Esat, T. — *Viability of Ng and Si Isotope Measurements in Samples Expected from the Hayabusa Mission to Asteroid Itokawa*

Workshop on Applications of Cosmogenic Isotope Analysis in Geomorphology and Quaternary Science, University of Edinburgh, Scotland, 22–25 October

Fifield, L.K. — *Applications of Cosmogenic Isotopes in Geoscience: Setting the Scene*

International Workshop on the Electric Fields, Structures, and Relaxation in Plasmas, Nice, France, 26–27 October

Shats, M.G. — *Physics of the Pedestal Formation during Confinement Transitions*

12th International Conference on Plasma Physics, Nice, France, 26–29 October

Boswell, R.W. and Charles, C. — *Current Free Double Layers in the Laboratory and their Application to Space Plasmas*

Nanophotonics, Nanostructure, and Nanometrology, SPIE, Beijing, China, 8–10 November

Wang, X.-H., Gu, B.-Y. and Kivshar, Y.S. — *Emission Decay and Lame Shift in Photonic Crystals*

IEEE LEOS Annual Meeting, San Juan, Puerto Rico, 8–11 November

Luther-Davies, B., Freeman, D., Ruan, Y., Madsen, N.R., Madden, S., Jarvis, R., Rode, A.V. and Samoc, M. — *Chalcogenide Glass Photonic Devices*

Materials Research Society Fall Meeting, Boston, USA, 29 November – 3 December

Jagadish, C. — *InAs Quantum Dots for Optoelectronic Device Applications*

AMSI Workshop: Foundation and Methodologies in Mathematical Physics, Coolangatta, 30 November – 1 December

Bazhanov, V.V., Sergeev, S.M. — *New Solutions of Tetrahedron Equation*

Bazhanov, V.V., Mangazeev, V. — *Eight-vertex Model and Non-stationary Lame Equation*

Bazhanov, V.V. — *Eight-vertex Model and Dilute Polymers*

Modern Developments in Lie Theory, Quantum Theory and Statistical Mechanics, Coolangatta, 2–4 December

Batchelor M.T. — *Integrable Attractive Bosons*

Knowledge Foundation's International Conference, Lithium Mobile Power 2004, Miami Beach, USA, 6–7 December

Chen, Y. — *Advances in Lithium Battery Technologies for Mobile Applications*

DAE-BRNS Symposium on Nuclear Physics, Banaras Hindu University, Varanasi, India, 6–10 December

Hinde, D.J. and Dasgupta, M. — *Current Questions in Nuclear Fusion*

Photonics 2004, Kochi, Japan, 8–11 December

Tan, H.H. — *Growth and Interdiffusion of Semiconductor Quantum Dots for Optoelectronic Integrated Circuit Applications*

7th International Conference on Optoelectronics, Fiber Optics and Photonics, Photoics 2004, Kochin, India, 9–11 December

Akhmediev, N. — *Dissipative Solitons in Photonics*

Conference on Laser Cleaning, Macquarie University, Sydney, 14–17 December.

Boswell, R.W. and Charles, C. — *Plasma Cleaning of Surfaces*

Asia Pacific Microwave Conference (APMC), New Delhi, India, 15–18 December

Tan, H.H. — *Interdiffusion Techniques and their Applications to the Integration of Semiconductor Quantum Well and Quantum Dot Devices*

Appendix – Outreach Activities

Individual Outreach Activities

Professor Nail Akhmediev presented a talk titled "Chaotic Dissipative Solitons as Strange Attractors" at the Topical Meeting Nonlinear Guided Waves and the Applications, Westin Harbour Castle, Toronto, Canada, in July. Dr Akhmediev also presented a talk at the Australian Conference on Optical Fiber Technology ACOFT 2004 in Canberra in July called "Directional Explosions of Solitons Produced by Passively Mode-Locked Lasers".

Dr Michael Hall gave an invited Seminar, "Scientific Understanding and Ignorance", at the Theory of Knowledge Day, held at Copland College, ACT, 30 June. (This event was for the benefit of an International Baccalaureate Course "Theory of Knowledge" run by the College and invited seminars were also given by other speakers on aspects of knowledge in Psychology, Law and History.

Professor C. Jagadish gave IEEE Lasers and Electro-Optics Society Distinguished Lecturer Seminars at:

- Nanyang Technological University, Singapore, January;
- University of Toronto, March;
- National Research Council of Canada, Ottawa, March;
- McGill University, Montreal, March;
- Engineers Australia, Barton, ACT, April;
- National Science Park, Bangkok, Thailand, May;
- Inha University, Incheon, Korea, July;
- University of Central Florida, Orlando, November.

Dr Greg Lane was an invited speaker on the topic "How Does one Become a Scientist?" at the National Youth Science Forum.

Professor John Love gave lectures on photonics to the National Science Teachers Summer School and to the National Youth Science Forum at ANU in January. Professor Love and **Dr Andrew Stevenson** gave talks in guided wave photonics at The Busan-Australia Photonics School (BAPS) in Busan, Korea, 2-4 May.

Dr Mark Ridgway presented a seminar as part of the Australian Synchrotron Project Medical Applications Seminar Series, Canberra.

Professor Robert Robson supervised Mr Sasa Dujko, PhD Student, School of Mathematics and Physical Sciences, James Cook University.

Dr Anna Samoc gave an invited talk to the Faculty of Optoelectronics and students of the Scientific Association of the University of Technology, Wroclaw and the IEEE Student Branch at Wroclaw University of Technology, Poland, 20 October.

Mr Michael Stewart contributed to the commercialisation of the Friction Attachment sold to Sanpany Instruments, Taiwan for \$115,000.

Dr Andrei Sukhorukov was a referee for the following journals: *Physical Review Letters*, *Physical Review E*, *Optics Letters* and *Optics Express*.

Dr Stephen Tims supervised projects for two students as part of the CSIRO Student Research Scheme.

Dr Congji Zha was invited to become a referee of *Journal of Sol-Gel Sciences and Technology*, *Nanotechnology*, and *Proceedings of MRS*.

Appendix – Service to Outside Organisations

Professor N. Akhmediev

Member, Scientific Program Committee, 4th IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena, Georgia, USA, to be held in April 2005

Chair, Sub-committee, Nonlinear Guided Waves and their Applications Conference, Toronto, Canada, March

Dr A. Ankiewicz

Member, Technical Committee, Australian Conference on Optical Fibre Technology, July

Dr T. Aste

Founding Member and Member, Board of "ARIA-Canberra", the Association for the development of collaborative research between Italy and Australia

Founding Member, "Marie Curie National Group" for Australia

Member, EU collaboration, COST P10 Physics of Risk network (2003–2007)

Ms B. Barbour

Member, Local Organisation Committee, ACOLS/ACOFT Conference, Canberra, July

Dr B.D. Blackwell

Service to Stellarator Physics Advisory Committee, Princeton Plasma Physics Laboratory, USA

Dr G.G. Borg

Editor, *Czech Journal of Physics*

Professor R.W. Boswell

Member, Asia Pacific Conference on Plasma Science and Technology

Member, Forum for Europe and Australian Science and Technology

Member, Foreign Relations Committee, ATSE

Professor S.J. Buckman

Member, Editorial Board, *New Journal of Physics*

Chair, ACT Chapter of the Fulbright Alumni Association

Member, International Scientific Committee, Symposium on the Physics of Ionized Gases

Member, Scientific Committee, International Conference on Electron Molecule Scattering

Member, Futures Committee, International Conference on Photonic, Electronic and Atomic Collisions (ICPEAC) (2002–)

Member, Will Allis Prize Committee of the American Physical Society (2002–)

Member, International Program Committee, International Conference on Atomic and Molecular Data (2004–)

Dr K.G.H. Baldwin

Chair, International Council on Quantum Electronics

Chair, Australian Institute of Physics Congress, to be held in 2005

Treasurer, 14th International Conference on Vacuum Ultraviolet Physics (VUV14), Cairns, July
Member, Australian Conference on Optics, Lasers and Spectroscopy Liaison Committee
Member, Australian Optical Society Council
Member, National Committee for Spectroscopy, Australian Academy of Science
Member, National Committee for Physics, Australian Academy of Science
Chair, Science Policy Committee, Federation of Australian Scientific and Technological Societies
Member, Australasian Council on Quantum Electronics

Dr T.T. Barrows

Member, Committee, Australasian Quaternary Association
Member, National Committee for Quaternary Research, Academy of Sciences

Professor M.T. Batchelor

Member, Editorial Board, *Journal of Statistical Mechanics*
Member, Advisory Panel, *Journal of Physics A*
Member, Organising Committee, Mathematical Physics and Lie Theory 2004, Coolangatta, 30 November – 4 December
Member, Topic Committee, STATPHYS 22, Bangalore, 4–9 July

Professor A.P. Byrne

Member, Australian Academy of Science Physics Panel
Member, Organising and Program Committees, 16th Biennial Congress of the Australian Institute of Physics, to be held in Canberra 30 January – 4 February 2005
Member, Committee (Secretary/Treasurer) Nuclear and Particle Physics Group (NUPP), Australian Institute of Physics
Referee, The Engineering and Physical Sciences Research Council (EPSRC), UK proposals

Dr S.J. Cavanagh

Member, Local Organising Committee, 14th International Conference on Vacuum Ultraviolet Physics (VUV14), Cairns, July
Editor, Proceedings, 14th International Conference on Vacuum Ultraviolet Physics (VUV14)

Professor L.T. Chadderton

Founding Editor, *International Journal of Radiation Effects and Defects in Solids*
Member, Editorial Advisory Board, *Nuclear Tracks and Radiation Measurement*
Member, Editorial Advisory Board, *International Materials Science Forum*
Member, Steering Committee, Bilateral Science & Technology Agreement, Mexico and the Federal Government of Australia
Member, United Nations Committee on Photovoltaic Applications in Less-Developed Countries, UN Centre for Science & Technology for Development
Member, International Committee, Biennial Conference Series on Radiation Effects in Insulators
Honorary Life Member, International Nuclear Track Society, and International Committee, Biennial Conference Series on Particle Tracks in Solids
Member, International Committee, Biennial Conference Series on Quantum Electrodynamics and Statistical Physics

Member, Advisory Committee, International Conference on Radiation Physics, Government of Mexico, Mexico

Member, Advisory Committee, Instituto de Petrolleo Mexicana, Mexico

Member, representing Australia, Commission on Science & Technology for Sustainable Development in the South (COMSATS, United Nations)

Dr Y. Chen

Nanotube Program Leader, ARC Centre of Excellence in Functional Nanomaterials

Member, Editorial Board, *International Journals of Indian Nanotechnology*

Regional Editor, *Journal of Asian Pacific Nanotechnology Forum*

Dr T. Dall

Tutor, School of Physical, Environmental and Mathematical Sciences (formerly School of Physics), Australian Defence Force Academy

Dr M. Dasgupta

Member, Committee, Nuclear and Particle Physics Group, Australian Institute of Physics

Member, International Advisory Committee, Nuclear Structure, Astrophysics and Reactions International Conference, Surrey, UK, to be held in January 2005

Member, Organising Committee, Symposium on Science with Rare Isotope Beams, Honolulu, to be held in December 2005

Professor R.L. Dewar

Member, IUPAP C16 Commission on Plasma Physics

Member, ACT Australian Institute of Physics (AIP) Branch Committee

Member, Executive Committee of the International Congress on Plasma Physics (ICPP 2004) Nice, France, 25-29 October

Member, Local Organising Committee and Program Committee, AIP Congress, to be held in Canberra 31 January – 4 February 2005

Professor G.D. Dracoulis

Member, Committee, Nuclear and Particle Physics Group, Australian Institute of Physics

Member, North America Committee, Australian Academy of Science, International Program of Scientific Visits

Member, Australian Academy of Science, Reactor Working Group

International Advisory Committee, 8th International Spring Seminar on Nuclear Physics, Paestrum, Italy, May

Co-opted Member, Australian Academy of Science, Sectional Committee SC2 Physics and Astronomy

ANU Representative, Engineering and Physical Sciences Research Council (UK), ANU-EPSRC Agreement: Beam Time Allocation

Referee, Engineering and Physical Sciences Research Council (UK), Senior Research Fellowship Scheme

Expert Referee, Engineering and Physical Sciences Research Council (UK), Research Grants; Nuclear Physics Program

Evaluator, Foundation for Research Development (South Africa) – Evaluation of Research Outputs of Principal Grant Holders
Reader, Physical and Earth Sciences, Australian Research Council

Professor R. Elliman

President, Australian Institute of Physics
Member, ACT Branch Committee, Australian Institute of Physics
Member, Board, Federation of Australian Scientific and Technological Societies
Member, National Committee for Physics, Australian Academy of Science
Member, International Committee, International Conference on Ion Beam Modification of Materials
Member, International Committee, International Conference on Ion Beam Analysis
Member, International Committee, International Conference on Atomic Collisions in Solids
Member, Editorial Advisory Board, *Vacuum*, published by Elsevier, Amsterdam
Member, External Review Committee, Accelerator Applications Program, Australian Nuclear Science and Technology Organisation (ANSTO)
Member, External Review Committee, Microanalytical Research Centre (MARC), University of Melbourne
Member, External Review Committee, Surrey Ion Beam Centre, Surrey University, UK
Member, Divisional Committee, Electronic Materials and Processing Division, International Union of Vacuum Science Techniques and Applications (IUVSTA)
Member, Appointment Committee for performance-based chair (Professor John O'Connor), University of Newcastle
OzReader, Australian Research Council
Reviewer, ASTAR, Singapore
Reviewer, National Science Foundation (USA)
Reviewer, Academic Research Fund -National University of Singapore
Reviewer, Natural Sciences and Engineering Research Council (NSERC), Canada
Member, Organising and Program Committees, 16th Australian Institute of Physics Biennial Congress
Member, Program Committee, International Conference on Ion Beam Analysis, Seville, Spain

Dr L.K. Fifield

Referee, Major Grant Proposal, United States NSF Major Facilities proposal
ANU Nominee, ACT Radiation Council
International Member, AMS Strategy Group, UK National Environment Research Council (NERC)
Referee, Major Grant Proposal, NERC (UK)

Professor N. Fletcher

Editor, *Acoustics Australia*, the journal of the Australian Acoustical Society
Associate Editor, *Journal of the Acoustical Society of America*
Member, Executive Board, Forum for Europe-Australian Science and Technology Collaboration (FEAST), representing the Academy of Science, the Academy of Technological Sciences and Engineering, the CRC Association, and ANU
Member, House Committee of the Australian Academy of Science

Dr S.T. Gibson

Council and Web Membership Database Administrator, Australian Optical Society
Member, Local Organising Committee, 4th International Conference on Vacuum Ultraviolet Physics (VUV14), Cairns, July
Member, Local Organising Committee, 16th Biennial AIP Congress

Dr M. Gulacsi

Associate Editor, *Philosophical Magazine*, UK
Deputy Director General, International Biographical Centre, UK

Professor J.H. Harris

Member, Stellarator Physics Advisory Committee, Princeton Plasma Physics Laboratory, USA
Member, Plasma Specialist Committee, AINSE
Member, Executive Committee, International Energy Agency Implementing Agreement for Research on Stellarators

Professor D.J. Hinde

Member, International Advisory Committee, Ninth International Conference on Nucleus-Nucleus Collisions, Brazil, to be held in 2006
Member, International Advisory Committee, FUSION06 International Conference, Italy, to be held in 2006

Dr J. Howard

Member, Editorial Board, *Plasma Physics and Controlled Fusion*
Member, 11th International Congress on Plasma Physics Program Committee
Treasurer, Australian Institute of Physics Congress, 2005

Professor C. Jagadish

Chair, IEEE Australian Chapter of Electron Devices and Lasers & Electro-Optics Societies
Member, Publications Committee, IEEE Electron Devices Society, USA
Member, Meetings Committee, IEEE Electron Devices Society, USA
Elected Member, Administrative Committee, IEEE Electron Devices Society, USA
Member, IEEE Nanotechnology Technical Committee of The Electron Devices Society
Member, IEEE Lasers and Electro-Optics Society Quantum Electronics Award Selection Committee
Member, Executive Committee, IEEE Nanotechnology Council
Vice-President (Publications), IEEE Nanotechnology Council
Chair, IEEE Nano-Optoelectronics and Nano-Photonics Technical Committee, The Nanotechnology Council
Member, Dielectric Science & Technology Division Executive Committee, The Electrochemical Society, Inc.
Member, Electronics Division Executive Committee, The Electrochemical Society, Inc.
Associate Editor, *IEEE/OSA Journal of Lightwave Technology*
Associate Editor, *Journal of Nanoscience and Nanotechnology*, American Scientific Publishers
Member, Steering Committee, *IEEE Journal of Lightwave Technology*
Member, Editorial Board, *Journal of Materials Sciences, Materials for Electronics*, Kluwer
Member, International Editorial Advisory Board, *Journal of Optical Society of Korea*

Member, Steering Committee, The IEEE 24th International Conference on Microelectronics, Nis, Yugoslavia, 15–18 May

Member, International Advisory Committee, 13th International Semiconducting and Insulating Materials Conference, Beijing, China, 20–25 September

Member, Scientific Program Committee, 13th International Semiconducting and Insulating Materials Conference, Beijing, China, 20–25 September

Co-Chair, Second International Conference on Integrated Optoelectronics, Honolulu, USA, October

Member, Program Committee, 4th IEEE Nanotechnology Conference, Munich, Germany, 17–19 August

Member, International Advisory Board, Second International Conference on Advanced Materials and Nanotechnology, Christ Church, NZ, to be held 6–11 February 2005

Member, Scientific Advisory Committee, 2004 Conference on Optoelectronic and Microelectronic Materials and Devices, Brisbane, 8–10 December

Member, International Advisory Committee, Photonics 2004, 7th International Conference on Optoelectronics, Fibre Optics and Photonics, Cochin, India, 8–11 December

Member, IEEE International Semiconductor Laser Conference, Asia-Australia Program Sub-Committee, Simane, Japan, 21–25 September

Member, IEEE Lasers and Electro-Optics Society Annual Meeting, Optoelectronic Materials and Processing Program Committee, Puerto, 7–11 November

Member, Program Committee, Conference on Nano- and Microtechnology: Materials, Processes, Packaging, and Systems II, SPIE International Symposium on Smart Materials, Nano-, and Micro-Smart Systems, Sydney, 12–15 December

Member, Organising Committee, 2004 IEEE Workshop on Quantum Device Technology, Potsdam, USA, 17–21 May

Member, Organising Committee, 5th International Symposium on MEMS and Nanotechnology, Costa Mesa, USA, 7–10 June

Member, International Advisory Committee, COBRA, Inter University Research Institute for Communications Technology, Eindhoven University of Technology, The Netherlands

Member, International Advisory Board, The MacDiarmid Institute for Advanced Materials and Nanotechnology, Centre of Research Excellence, Victoria University of Wellington and University of Canterbury, New Zealand

Member, Working Group on Nanotechnology, Prime Minister's Science, Engineering and Innovation Council

Member, Editorial Advisory Board, *Electrochemical and Solid State Letters* (2004–)

Member, IEEE Ethics and Member Conduct Committee of the Hearing Panel (2004–2006)

Member, Editorial Advisory Board, *Nanotech Briefs*, 2004-

Member, Nano-Photonics Technical Committee, IEEE Lasers and Electro-Optics Society (2004–)

Reader, Australian Research Council

Member, College of Reviewers, Natural Sciences and Engineering Research Council of Canada

Member, EPSRC Peer Review College, UK

Reviewer, Hong Kong Research Grants Council, HK

Reviewer, National Research Foundation, South Africa

Reviewer, Marsden Fund, New Zealand

Reviewer, ASTAR, Singapore

Dr A.S. Kheifets

Member, Local Organising Committee, 4th International Conference on Vacuum Ultraviolet Physics (VUV14), Cairns, July
Editor, Proceedings, 14th International Conference on Vacuum Ultraviolet Physics (VUV14)

Dr M. Kono

Member, Local Organising Committee, 4th International Conference on Vacuum Ultraviolet Physics (VUV14), Cairns, July
Editor, Proceedings, 14th International Conference on Vacuum Ultraviolet Physics (VUV14)

Professor B.R. Lewis

Chairman, 14th International Conference on Vacuum Ultraviolet Physics (VUV14), Cairns, July

Professor J.D. Love

Chair, Steering Committee, Australian Conference on Optical Fibre Technology
Director, ACT Siemens Science & Engineering Experience
Director, Education & Training, Australian Photonics CRC
Director, Photonics Institute, Bruce, ACT
Group Head ANU, Australian Photonics CRC
International Advisor, Network Technology Research Centre, Nanyang Technological University, Singapore
Member, European Conference on Optical Communications International Advisory Committee
Member, Korea-Australia Photonics Association Committee
Member, Council of the Australian Optical Society
Member, Executive Committee, Australian Photonics CRC
Member, Executive Committee, Photonics Institute
Member, Organising Committee, Australian Institute of Physics Congress, Canberra
Member, International Advisory Committee, OptoElectronics & Communications Conference
Member, Local Organisation Committee, ACOLS/ACOFI Conference, ANU, Canberra, July
Postgraduate Research Student Supervisor: La Trobe University
Postgraduate Research Student Supervisor: University of Melbourne
Postgraduate Research Student Supervisor: University of Sydney
Program Manager, Photonic Integrated Circuits, Australian Photonics CRC
Reader and Referee, Australian Research Council
Reader and Referee, Hong Kong Research Council
Reader and Referee, Singapore Research Council
Reader and Referee, Engineering & Physical Sciences Research Council (UK)

Dr J. Lower

General Committee Member, International Conference on Photonic, Electronics, and Atomic Collisions (ICPEAC)

Dr M. Ridgway

Member, Organising and Program Committees, 16th Australian Institute of Physics Congress, to be held in 2005
Member, Organising Committee/Program Committee, 14th International Conference on Vacuum Ultraviolet Physics (VUV14), Cairns, July

Member, International Committee, Radiation Effects in Insulators International Conference Series
Chair, Photon Factory Specialist Committee, Australian Synchrotron Research Program
Member, Executive Committee, Australian Synchrotron Research Program
Chair, EXAFS Beamline Advisory Panel, Australian Synchrotron Project
Member, National Scientific Advisory Committee, Australian Synchrotron Project
Co-Chair, 1st Australian Synchrotron Summer School, Canberra
Member, Beamline Advisory Group, Australian Synchrotron Project

Dr B.A. Robson

Member, Australian-French Association for Science and Technology (ACT)
Incorporated Member, Bragg Medal Panel, Australian Institute of Physics for 2004 Awards

Professor R.E. Robson

Australian Coordinator, Regional Pacific Colloquium, Alexander von Humboldt Foundation, Auckland, NZ
National Secretary, Australian Association of von Humboldt Fellows
Deputy Coordinator, ARC Complex Open Systems Network (from July)
Member, Local Organising Committee, 14th International Vacuum Ultraviolet Conference, Cairns, July

Dr T.J. Senden

Board Member, The Rio Tinto Australian Sciences Olympiads
Member, Program Committee, Biophysics Representative, 2005 AIP Physics Congress

Dr M. Sellars

Member, Local Organisation Committee, ACOLS/ACOFT Conference, ANU, Canberra, July

Dr M.G. Shats

Member, 11th International Congress on Plasma Physics Program Committee

Dr A. Stewart

Vice President (Academic) and Treasurer, ANU Branch, National Tertiary Education Union

Dr A.E. Stuchbery

Chair, Nuclear and Particle Physics Group (NUPP), Australian Institute of Physics
Reader Physical, Chemical and Earth Sciences, Australian Research Council
Member, Program Committee, 20th AINSE Nuclear and Particle Physics Conference (in association with AIP Congress) Canberra, January 2005

Dr A. Sukhorukov

Member, Program Committee, OSA Conference on Nonlinear Guided Waves and their Applications, Dresden, Germany, to be held in 2005

Dr H.H. Tan

Senior Member, Institute of Electrical and Electronics Engineering (IEEE)
Vice Chair, IEEE ACT Section

Distinguished Lecturer, IEEE Electron Devices Society

Member, IEEE Nano-Optoelectronics and Nano-Photonics Technical Committee of the IEEE Nanotechnology Council

Member, Program Committee for Conference on Optoelectronic and Microelectronic Materials and Devices (COMMAD), Brisbane

Member, Program Committee for SPIE Conference on Nano and Microtechnology: Materials, Processes, Packaging and Systems I, Sydney

OzReader, Australian Research Council

Dr M. Vos

Member, Local Organising Committee, 4th International Conference on Vacuum Ultraviolet Physics (VUV14), Cairns, July

Editor, Proceedings, 14th International Conference on Vacuum Ultraviolet Physics (VUV14)

Professor E. Weigold

Member, International Scientific Committee, International Conferences on X-Ray and Inner Shell Processes

Member, International Scientific Advisory Committee, International Symposium on (e,2e) Double Photoionization and Related Topics, Argentina

Member, International Organising Committee, International Conference on Charge, Spin and Momentum Densities, Sagamore

Member, International Scientific Committee, Electron and Photon Impact Ionization and Related Topic, Louvain-la-Neuve, Belgium, 1–3 July

Member, International Advisory Committee, Spectroscopies in Novel Superconductors, Sitges, Spain, 11–16 July

Member, International Advisory Committee X05, Melbourne, to be held in July 2005

Chair, Innovation Access Program, International Science and Technology Competitive Grants Assessment Panel

Member, Local Organising Committee, 4th International Conference on Vacuum Ultraviolet Physics (VUV14), Cairns, July

Dr A.N. Wilson

Deputy Chair, Meetings Secretary and Web Editor, Australian Institute of Physics

Dr C. Zha

Conference Session Chair, The 3rd International Conference on Advanced Materials Processing (ICAMP-3), Melbourne, 29 November to 1 December

Appendix – Students

Other Supervised Undergraduate Students

<u>Name</u>	<u>Home University/ANU Faculty</u>	<u>Host Department</u>
Ms Reanna Albion	Physics Department, ANU	EME
Mr John Altin	Physics Department, ANU	NP
Mr Paul Altin	Physics Department, ANU	NP
Mr Roshan Banan	Faculty of Engineering and IT, ANU	PRL
Ms Susan Batley	Faculty of Science, ANU	TP
Mr Paul Bonato	Physics Department, ANU	NP
Ms Dahliyani Breidis	Mathematics Department, ANU	LPC
Mr Christopher Brooke	Faculty of Engineering and IT, ANU	PRL
Mr Bhaskara Dantuluri	Computer Sciences, ANU	PRL
Mr David Duniec	University of Uppsala, Sweden	NP
Mr Stefan Foudoulas	Faculty of Engineering and IT, ANU	PRL
Mr Joris Fourier	ENSPG, France	NP
Ms Kirsten Gottschalk	Physics Department, ANU	NP
Mr Rhys Goodwin	Faculty of Engineering and IT, ANU	PRL
Mr Phillip Gowlett	University of Sydney	PRL
Mr Mark Gwynneth	Faculty of Engineering and IT, ANU	PRL
Mr Nick Herald	Physics Department, ANU	NP
Mr Chris Hollins	Faculty of Engineering and IT, ANU	PRL
Mr Ben Hoy	Faculty of Engineering and IT, ANU	EME
Mr Bernt Johannessen	Physics Department, ANU	EME
Mr Matthew Lenehan	Physics Department, ANU	NP
Mr Peter Liddicoat	Faculty of Engineering and IT, ANU	EME
Mr Zo Lowrie-Nunes	Faculty of Engineering and IT, ANU	EME
Ms Melanie Marie-Jeanne	ENSICAEN, France	NP
Mr Robert May	Faculty of Engineering and IT, ANU	PRL
Ms Olivia Morrison	Faculty of Engineering and IT, ANU	AM
Mr Eldad Ohanyon	Faculty of Engineering and IT, ANU	PRL
Ms Jemma Pollari	Physics Department, ANU	NP
Mr Revantha Remanayke	Mathematical Science Institute, ANU	TP
Mr Jeffrey Rogers	Physics Department, ANU	NP
Mr Phua Leong Seng	Faculty of Engineering and IT, ANU	EME
Mr Roger Senior	Physics Department, ANU	NP
Mr Manuraj Sundaram	Physics Department, ANU	AMPL
Mr Ben Swift	Physics Department, ANU	NP
Mr Andrew Vicquaret	University of Sydney	PRL
Mr Sebastien Yuen	Physics Department, ANU	NP

Summer/Winter Scholars

<u>Name</u>	<u>Home University</u>	<u>Host Department</u>
Ms Reanna Albion	Australian National University	EME
Mr Christopher Brooke	Australian National University	PRL
Mr Michael Brown	University of Auckland, NZ	NP
Mr Michael Chen	Australian National University	NLPC/LPC
Mr Matthew Cheung	Australian National University	LPC
Mr Rhys Goodwin	Australian National University	PRL
Mr Russell Grew	Newcastle University	NLPC
Ms Yvette Heritage	University of Wollongong	NP
Mr Peter Liddicoat	Australian National University	EME
Ms Olivia Morrison	Australian National University	AM
Mr Aki Nakamura	Australian National University	NP
Ms Aroon O'Brien	Canterbury, Christchurch, NZ	AM
Mr Lawrence Pashley	Australian National University	AM
Ms Violaine Vizcaino	ENSPG, France	AMPL
Mr Andrew Vicquaret	University of Sydney	PRL
Mr Michael West	Australian National University	PRL

Visiting Scholars

<u>Name</u>	<u>Home University</u>	<u>Host Department</u>
Mr Andrew Baloglow	University of Wollongong	NP
Mr Massimo Bonini	University of Florence, Italy	AM
Mr Boris Breidenbach	MPI für Metallforschung, Germany	AM
Ms Casa Dalton	University of Southern Queensland	AM
Mr Greg Deeley	University of Wollongong	NP
Mr Abid Ghous	University of New South Wales	AM
Mr Peter Goss	Copland College / CSIRO	NP
Ms Bianca Haberl	University of Augsburg, Germany	EME
Ms Stephanie Hatt	Paris XI University, France	EME
Mr Itai Haviv	Hebrew University of Jerusalem, Israel	NP
Ms Yvette Heritage	University of Wollongong	NP
Mr Myall Hingee	Narrabundah College / CSIRO	NP
Mr Matthias Hoerteis	University of Augsburg, Germany	EME
Mr Aert van de Hulsbeek	Technical University of Eindhoven, Netherlands	EME
Mr Johannes Jaegers	Universität Münster, Germany	NLPC
Ms Kellie Jericho	Flinders University	AM
Ms Grace Jordan	Trinity College Dublin, Ireland	LPC
Mr Dan Judson	University of Brighton, UK	NP
Mr Anthony Kalinik	University of Wollongong	NP
Mr Raghu Lakshmanasamy	Australian National University	EME

Mr Peter Larsen	Technical University of Denmark	LPC
Mr James Lau	University of Wollongong	NP
Mr Ray-Kuang Lee	National Chiao-Tung University, Taiwan	NLPC
Ms Shelly Leshner	University of Kentucky, USA	NP
Mr Michael Leung	Flinders University	EME
Ms Isabel Maria Diez San Jose	Potsdam University, Germany	LPC
Ms Alice Melleuish	University of Wollongong	NP
Mr Viet Nguyen	University of New South Wales	AM
Ms Kate Nixon	Flinders University	AMPL
Mr Scott Penfold	University of Wollongong	NP
Mr Daniel Peterson	University of Wollongong	NP
Mr Peter Prinsen	Delft University of Technology, Netherlands	AM
Mr Santosh Shrestha	ADFA, University of New South Wales	NP
Ms Amy Siebell	University of Wollongong	NP
Ms Melissa Siroky	University of Wollongong	NP
Mr Andre Stoffel	Royal Institute of Technology, Sweden	TP
Ms Henrike Trompeter	Friedrich Schiller Universität, Germany	NLPC/LPC
Mr Michele Tumminello	Università Degli Studi di Palermo, Italy	AM
Mr Danielle Tyrell	University of Wollongong	NP
Ms Sriranjani Venkatesan	Australian National University	EME
Mr Dean Wilkinson	University of Wollongong	NP
Mr Lukasz Wolf	Chalmers University of Technology, Sweden	NLPC
Ms Agnieszka Wolos	Warsaw University, Poland	EME
Ms Yi Shuo Zhang	University of Wollongong	NP
Mr Lingxiao Zhu	Royal Institute of Technology, Sweden	NLPC

Work Experience

<u>Name</u>	<u>School/College</u>	<u>Host Department</u>
Mr David Conway	Lake Tuggeranong College	LPC
Mr Kym Burgess	QBE Rehabilitation Program	NP

Appendix – University and School Services

Membership of regular School Committees is given under Internal Management

Dr A. Ankiewicz

Member, Physical Sciences Library Advisory Committee
Member, Cyclists' Reference Group

Dr T.T. Barrows

Member, Board, The National Institute for the Environment

Professor B.T. Batchelor

Deputy Coordinator, Centre for Complex Systems Planning Committee
Coordinator, Mathematical Physics Program MSI
Promotions Committee, MSI
Board, MSI

Dr G.G. Borg

Coordinator, FEIT 6 Unit Course, ENGN4533
Installation of BushLAN, ANU – Bywong Network, demonstration of VoIP

Professor R.W. Boswell

Chair, Faculty

Professor S.J. Buckman

Associate Director (Academic), RSPHysSE
Member, SHE Division Research Committee

Professor A.P. Byrne

Member, Staff Selection Panels, Faculty of Science
Member, Staff Selection Panels, Department of Nuclear Physics
Convenor, Workshop in Nuclear Techniques September 2004
Member of ANU Scholarships Selection Panel

Mr A.K. Cooper

Occupational Health and Safety Officer, Department of Nuclear Physics
Deputy Chief Fire Warden, Department of Nuclear Physics

Dr M. Dasgupta

Member, Staff Selection Panel, Faculty of Science
Assistant Coordinator, Graduate Student Program for the RSPHysSE (from August)

Mr G.C.J. Davies

Member, Radiation Committee

Professor R.L. Dewar

Coordinator, Centre for Complex Systems

Professor G.D. Dracoulis

Member, Staff Selection Panels, Department of Nuclear Physics

Professor R.G. Elliman

Member, ANU Academic Board

Member, ANU Board of the Institute of Advanced Study (BIAS)

Member, ANU Vice Chancellor's Awards Committee

Member, ANU Physical Sciences Library Committee (Physlac)

Member, ANU Major Equipment Committee (MEC)

Member, ANU Leadership Program Steering Committee

Dr L.K. Fifield

Chair, Radiation Safety Sub-committee, ANU Occupational Health and Safety Policy Committee

Radiation Officer, Department of Nuclear Physics

Chair, Reclassification Subcommittee, RSPHysSE

Member, Selection Committee for Standard Position in Seismology, RSES

Dr S.T. Gibson

Member, Board of Studies, Graduate Program in Physical Sciences

Local IT Contact Representative, RSPHysSE

AMPL Coordinator – Group Visits:

National Science Teacher's Summer School

National Youth Science Forum

Students of Australian National Physics Competition

Professor J.H. Harris

Member, ANU Research Committee

Referee, IAS Performance and Planning Fund

IAS Representative, Review of the Faculties

Dr J. Howard

Coordinator, School Honours' Program

Mr A. Hyde

Member, ANU Transport Reference Group

Professor S. Hyde

Member, Advisory Committee, ANU High Performance Computing Facility

Member, Advisory Committee, ANU Centre for Science and Engineering of Materials

Professor C. Jagadish

Member, University Promotions Committee

Dr T. Kibédi

Librarian, Department of Nuclear Physics Library

Dr G.J. Lane

Member, Staff Selection Panels, Department of Nuclear Physics

Professor B.R. Lewis

Member, Faculty, Research School of Astronomy and Astrophysics

Member, Scholarly Information Services Committee

Member, Information Strategy Committee

Member, Institute Forum

Member, Science Library Advisory Committee

IAS Representative, Faculties Forum

Dr N. Lobanov

Chief Fire Warden, Department of Nuclear Physics

Prof J.D. Love

Member, Faculty Board, Faculty of Engineering & Information Technology (FEIT)

Dr F.P. Mills

Member, Faculty Board, Centre for Resource and Environmental Sciences

Mrs M.F. O'Neill

Occupational Strains Liaison Officer, Department of Nuclear Physics

Dr M.C. Ridgway

Member, Steering Committee, Centre for Science and Engineering of Materials

Member, Board of Studies, Graduate Program in Physics

Member, Board of Studies, Graduate Program in the Environment

Dr B.A. Robson

Convenor, Working Party, Jagadishwar Mahanty Prize

Mr T. Sawkins

Member, ANU Radiation Safety Sub-committee

Member, ANU Hazardous Waste Safety Sub-committee

Coordinating Radiation Safety Officer, RSPHysSE

Hazardous Waste Safety Officer, RSPHysSE

Dr T. Senden

Member, ANU Microscopy Strategic Advisory Group

Dr M.G. Shats

Member, Physics Library Advisory Committee

Member, RSPHysSE Web Committee

Dr A. Sheppard

Member, Selection Panel, for the appointment of a System Programmer and an Academic Consultant, ANU Supercomputer Facility

Ms A. Smith

RSPHysSE Area Classification Advisory Committee
ANU Career Development Scheme

Dr A. Stewart

Member, Working Party, Review of the ANU's Minimum Higher Degree Research Resources Policy, ANU Graduate School

Dr A.E. Stuchbery

Member, Physical Sciences Library Advisory Committee (PhysLAC)

Dr H.H. Tan

Member, Board of Graduate Studies in Engineering and Information Sciences

Dr S.G. Tims

Deputy Radiation Officer, Department of Nuclear Physics

Mr R.B. Turkentine

Member, Tender Evaluation Committee for the supply of Liquid Nitrogen and Compressed Gases

Mr H.J. Wallace

First Aid Officer, Department of Nuclear Physics

Dr A.N. Wilson

Academic Sub-Editor, RSPHysSE Annual Report 2003
Editor, Department of Nuclear Physics Annual Report

Appendix – Visitors

<u>Name</u>	<u>Home University/Institute</u>	<u>Host Department</u>
Dr V. Aimez	University of Sherbrooke, Canada	EME
Dr L. Avaldi	Consiglio Nazionale delle Ricerche, Italy	AMPL
Dr Y. Azuma	Photon Factory, Japan	AMPL
Professor M.V. Berry, FRS	University of Bristol, UK	TP
Professor P. Bouwknegt	University of Adelaide	TP
Professor C. Brion	University of British Columbia, Canada	AMPL
Dr A. Bruce	University of Brighton, UK	NP
Professor P. Callaghan	Victoria University of Wellington, NZ	AM
Professor P. Charette	University of Sherbrooke, Canada	EME
Professor N. Cherepkov	State University of Aerospace Instrumentation, Russia	AMPL
Professor S.-H. Choi	Kyung Hee University, Korea	EME
Mr N. Clisby	University of Melbourne	TP
Professor L. Dai	University of Dayton, USA	EME
Mr J. Decker	MIT Boston, USA	TP
Professor X. Ding	Fudan University, China	AMPL
Professor A. Dreischuh	Sofia University, Bulgaria	AMPL
Professor J.Q. Fang	Institute of Atomic Energy, China	TP
Professor P. Fauchet	Rochester University, USA	EME
Dr J.F. Frederiksen	CSIRO Atmospheric Science	TP
Professor G. von Gehlen	Universität Bonn, Germany	TP
Professor Dr A. Graja	Polish Academy of Sciences, Poland	LPC
Dr J. Halbritter	Institut für Materialforschung I, Germany	NP
Dr L. Hertz	University of Oxford, UK	EME
Dr S. Heun	Sinocrotrone Trieste, TASC-INFM, Italy	AMPL
Professor R.J. Hosking	University of Brunei, Brunei	TP
Dr A. Ivanov	University of Sydney	TP
Professor R. Jain	University of New Mexico, USA	EME
Dr M. Johnston	University of Oxford, UK	EME
Professor P. Jordan	Brandeis University, USA	TP
Professor R. Julin	University of Jyväskylä, Finland	NP
Dr T. Kanna	Centre for Nonlinear Dynamics, India	OSG
Dr S. Karataglidis	University of Melbourne	NP
Professor G. Karwasz	University of Trento, Italy	AMPL
Ms A.M. Keesee	West Virginia University, USA	PRL
Professor B.G. Kenny	University of Western Australia	TP
Professor S. Korn	University of Connecticut, USA	TP
Dr A. Kuniba	University of Tokyo, Japan	TP
Dr N. Kutz	University of Washington, USA	NLPC
Professor E.-H. Lee	INHA University, South Korea	EME
Professor Y.-H. Lee	KAIST, Korea	EME
Dr L. Léon	University College Dublin, Ireland	NP

Dr A. Levon	Institute for Nuclear Research, Ukraine	NP
Dr H.C. Liu	National Research Council, Canada	EME
Dr T. Luce	General Atomics, San Diego, USA	PRL
Dr K.-H. Maier	Hahn-Meitner-Institut, Germany	NP
Professor B. Malomed	Tel Aviv University, Israel	NLPC
Dr K. Maruno	Research Institute for Applied Mechanics, Japan	OSG
Dr I. McCulloch	University of Leiden, The Netherlands	TP
Dr A. Milev	University of Western Sydney	EME
Professor I.M. Mitchell	University of Western Ontario, Canada	EME
Dr U. Morgernstern	Institute of Geological and Nuclear Sciences, NZ	NP
Professor G. Mussardo	ISAS Trieste, Italy	TP
Professor Y. Nagai	University of Waseda, Japan	AM
Dr J. Fernández Niello	Laboratorio TANDAR – CNEA, Argentina	NP
Professor J. O'Brien	University of Southern California, USA	EME
Dr C. Oguey	University of Lausanne, France	AM
Professor J. Oitmaa	University of New South Wales	TP
Dr N. Orce	University of Kentucky, USA	NP
Professor N. Priest	Middlesex University, UK	NP
Dr K. Prince	Sincrotrone Trieste & INFN-TASC, Italy	AMPL
Dr E. Radlinska	University of Warsaw, Poland	AM
Professor R. Rau	Louisiana State University, USA	AMPL
Dr L. Salminen	Helsinki University of Technology, Finland	AM
Professor S. Schrader	Potsdam University, Germany	LPC
Professor E. Scime	West Virginia University, USA	PRL
Dr T. Slinger	SRI International, USA	AMPL
Dr N. Smyth	Edinburgh University, UK	NLPC
Professor A. Soldatov	Rostov State University, Russia	AMPL
Professor Y. Stepanyants	ANSTO	NLPC
Professor R.G. Storer	Flinders University	TP
Dr M. Taylor	University of Brighton, UK	NP
Dr H. Timmers	ADFA, University of New South Wales	NP/EME
Professor T. Tran	Nuclear Physics Centre, Vietnam	NP
Dr E. Tsoy	Physical Technical Institute of the Uzbek, Uzbekistan	OSG
Dr Z. Tsuboi	University of Tokyo, Japan	TP
Dr K. Ueda	University of Tokyo, Japan	AMPL
Professor I. Vardavas	University of Crete, Greece	AMPL
Dr F. Waelbroeck	University of Texas, USA	TP
Dr N. Welham	Imperial College, UK	AM
Professor J. West	Synchrotron Radiation Department, UK	AMPL
Dr R. White	James Cook University, Cairns	TP/AMPL
Professor I. Whittington	James Cook University, Townsville	AMPL
Professor F. Wuillenmier	Université Paris-Sud, France	AMPL
Dr L. Wolf	Chalmers University of Technology, Sweden	AMPL
Professor S. Yates	University of Kentucky, USA	NP
Dr H.-J. Yoon	Korea Maritime University, South Korea	PRL
Professor J.-H. Yoon	Kangwon National University, Korea	EME

Professor L. Yuguo
Dr J. Warburton
Dr W.-D. Zeitz
Professor C. Zhang

Shandong Normal University, China
Desert Research Institute, USA
Hahn-Meitner-Institut, Germany
University of Wollongong

EME
EME
NP/ADFA
EME

Appendix – Workshops and Conferences

The Australian Synchrotron Summer School, ANU, 27 January – 4 February 2004

The Australian Synchrotron is now under construction in Melbourne with a scheduled opening date of March 2007. The focus of the annual RSPHysSE Summer School series for 2004 was thus synchrotron science as co-chairs Dr Mark Ridgway and Dr Chris Glover sought to enhance and prepare the potential future user base of our new state-of-the-art national research facility. The eight-day Summer School featured renowned lecturers and scientists from both Australia and overseas and was targeted at fourth-year undergraduate students, post-graduate students and post-doctoral fellows. Participants were drawn from all Australian states in addition to Korea and New Zealand with all 100 available places allocated three months in advance. Lecture topics ranged from the fundamentals to applications spanning a variety of topics and disciplines. Given the outstanding success of the 2004 Summer School, we now anticipate it will be offered every three years to enable any Australian post-graduate student with an interest in synchrotron science to participate.

A special **International Conference on Hofmeister Phenomena** was organised by Professor W. Kunz, Professor B.W. Ninham and Dr P. Lo Nostro at Regensburg, Germany, 26–28 February 2004. The results are embodied in *Current Opinion in Colloid and Interface Science* 9, numbers 1,2 August 2004 to which a number of members of the Department of Applied Mathematics contributed papers. The research represents a paradigm shift in physical chemistry of some considerable moment.

The **Fourteenth International Conference on Vacuum-Ultraviolet Radiation Physics** (VUV-XIV) was chaired by Professor Brenton Lewis and organised, on behalf of the International Advisory Board, principally by a School team with representation from AMPL, EME, and AM. The conference was held in Cairns from 19–23 July 2004 and attracted around 420 scientific registrants, 90% of whom were international, 15 exhibition booths, and around \$120,000 in grants and sponsorship.

The Conference encompassed all aspects of theoretical and experimental studies of the interaction of ultraviolet and soft X-ray radiation with matter over a photon-energy range from 5 eV to several keV. Relevant areas of research included atomic and molecular physics, materials sciences, physics, chemistry, biology and the novel instrumentation required to conduct such research. The major tools of investigation such as synchrotron radiation, lasers, laboratory sources, and plasma sources were important topics, as were the associated optics, technology, and analytical techniques. The VUV-XIV Proceedings, edited by Dr Anatoli Kheifets, have been published as a special issue of the peer-reviewed *Journal of Electron Spectroscopy and Related Phenomena*.

The Department of Nuclear Physics hosted the **Accelerator Technical Forum** from 14–16 September designed to promote interaction among technical, professional and academic staff from Australia and New Zealand who are involved in the operation and development of particle accelerators and related facilities. The Forum was attended by 45 people and 31 oral presentations were given.

The **4th Annual Workshop on Nuclear Techniques**, organised by Professor Aidan Byrne, was held from 27–30 September in the Department of Nuclear Physics. Thirteen undergraduate students from the University of Wollongong's medical physics program participated in this year's workshop. The workshop program is designed to actively engage students in the fundamentals of the measurements of nuclear radiations and the elements of isotope production using accelerator facilities. Students participated in an intensive four-day program that included experiments on the 14UD heavy-ion accelerator. Topics covered included radiation safety, detector design and operation, isotope production, accelerator operation.

The Department of Applied Mathematics hosted **Materials and Complexity II** in Kioloa from 2-5 November.