

Interactions Across the University



The School assumes an active role in many areas across campus. For example, School staff contribute to the Centre for the Science and Engineering of Materials, the Quaternary Dating Research Centre and the Visual Sciences Research Centre. Details of collaborations with other Schools, including RSBS, RSC, RSES and JCSMR, are found in Research Accomplishments (section 1) and Collaborative Ventures (section 3).

In 2001, the ANU welcomed Professor Ian Chubb as Vice Chancellor. Shortly thereafter, the VC initiated the establishment of the National Institutes, one aim of which was to enhance both the domestic and international profile of the University by revealing the breadth and depth of our academic activity. The School assumed a leadership role in the National Institute for Physical Sciences with the appointment of Professor J.S. Williams (EME) as Convenor. The aims of the Institute are two-fold: *(i)* to coordinate, strengthen and promote the outstanding physical sciences research, teaching and outreach programs of the ANU that span staff, facilities and capabilities across the entire campus and *(ii)* to enhance those programs, major facilities and activities with a national focus, including taking a leadership role in advancing the cause of the physical sciences within the community. In addition to the National Institute for Physical Sciences, staff from the School are also affiliated with other Institutes including that for Engineering and Information Sciences.

In this section we emphasise specifically the relationship with The Faculties, with whom the School has traditionally enjoyed a high level of interaction. This is particularly so for the Departments of Physics and Chemistry in the Faculty of Science, and the Faculty of Engineering and Information Technology. These interactions are reinforced by a number of joint staff appointments.

This year, School staff delivered 17 undergraduate courses in The Faculties and assumed responsibility for supervision and co-supervision of a number of honours and graduate students. These activities, together with details of research collaborations with Faculty staff (see also section 3) are reported below. The final part of this section lists contributions that School staff make to the routine functioning and management of the University.



Interaction with The Faculties

There is a high level of interaction between the School and The Faculties, particularly with the Faculty of Science (Department of Physics and Department of Chemistry) and also with The Faculty of Engineering and Information Technology.

A number of collaborative research projects are active. RSPHysSE staff provide guest lectures or complete courses and assume responsibility for supervision and co-supervision of many honours and graduate students enrolled in The Faculties. Additional interaction is facilitated by staff who hold joint appointments.

Please refer to Section 2 – Undergraduate Students for a list of undergraduate students supervised by staff members of this School.

Applied Mathematics

Dr V. Craig taught the Chemistry 3052 *Physical Chemistry Laboratory* course and delivered nine lectures in the Department of Chemistry, The Faculties. The lectures were called *Colloid and Surface Science*.

Professor S. Hyde delivered a lecture, *Geometry*, to undergraduates of the Institute of the Arts.

Professor S. Hyde and Dr V. Robins gave seminars on their research to undergraduates in the School of Mathematical Sciences.

Dr T.J. Senden

facilitates the training of "ANU campus users on the Scanned Probe Microscopy Facility".

Atomic and Molecular Physics Laboratories

Collaboration on *Atom Optics* continues between the Atom Manipulation Project in the School and the Physics Department in the Faculties, involving Dr K.G.H. Baldwin (LPC) and Professor S.J. Buckman, with Professor H.-A. Bachor, Dr J. Close and Dr C. Savage (Physics, Faculty of Science).

Dr A.S. Kheifets gave a lecture course on *Atomic Collision Processes* to Honours students in Physics, Faculty of Science, in March-May.

Dr R.E. Robson gave a lecture course on *Life Physics* to students in Physics, Faculty of Science, in the second semester.

Electronic Materials Engineering

Professor R.G. Elliman, Professor C. Jagadish and Dr M.C. Ridgway were guest lecturers in *Semiconductor Technology* presented to fourth-year students in the Faculty of Engineering and Information Technology.

Laser Physics Centre

Dr K.G.H. Baldwin presented a short course in *Lasers in Semiconductor Technology* to third-year engineering students.

Collaboration on *Atom Optics* continues between the Atom Manipulation Project in the School and the Physics Department in the Faculties, involving Dr K.G.H. Baldwin and Professor S.J. Buckman (AMPL), with Professor H.-A. Bachor, Dr J. Close and Dr C. Savage (Physics, Faculty of Science).

Dr A. Samoc presented a lecture on *Principles and Demonstrations of the use of a Prism Coupler* to engineering students.

Dr M. Samoc and Professor B. Luther-Davies continued the collaboration on *NLO Properties of Organometallics* with Dr Mark G. Humphrey, Department of Chemistry.

Nuclear Physics

Dr A.M. Baxter of the Department of Physics, The Faculties, carried out research on nuclear spectroscopy in the Nuclear Physics Department and was a Visiting Fellow in the Department from 28 July 2001 to 26 January 2002 as part of the Distinguished Scholars' program in the Faculty of Science.

Dr B.R. Barrett, a visitor from the University of Arizona, gave a short lecture series on *Modern Shell Model Techniques* in the Department of Physics.

Dr A.P. Byrne holds a joint appointment with the Department of Physics and is Acting Head of Department from October.

Dr L.K. Fifield continues collaborations with Dr Bradley Opdyke and two students, Helen Bostock and Siwan Rees of the Department of Geology.

Dr G.J. Lane taught half of Physics 3033 *Nuclear Physics* for third-year students in the Department of Physics.

Dr A.N. Wilson taught the third-year course *Particle Physics* in the Department of Physics.

Plasma Research Laboratory

Dr J. Howard presented an 18-lecture course on *Plasma Physics* to third-year students in the Department of Physics.

Professor J. Harris, Dr B. Blackwell and Dr K. Walshe presented the 36 lecture and laboratory course ENGN4506 *Power Electronics* for third-year engineering students in the Faculty of Engineering and Information Technology.

Dr G. Borg presented a six-week lecture course on *Radiofrequency Techniques for Wireless Communications* to students in the Faculty of Engineering and Information Technology.

Theory Cluster

Applied Photonics Group & Nonlinear Physics Group

Professor J.D. Love presented the 18-lecture course PHYS3050 *Optical Fibre and Waveguide Transmission* during the first half of second semester to engineering and physics students.

Professor J.D. Love and Dr A. Ankiewicz presented the 18-lecture course PHYS3051 *Fibre and Waveguide Devices for Optical Systems and Networks* during the second half of the second semester to engineering and physics students.

Optical Sciences Centre

Professor N. Akhmediev gave the lecture course PHYS3002 *Nonlinear Dynamics* for third-year undergraduate students in October.

Theoretical Physics

Professor M.T. Batchelor lectured half the mathematics third-year course MATH3322 *Mathematical Methods*.

Professor R.L. Dewar taught PHYS3001 *Classical Mechanics* (12 lectures) in the Department of Physics and Theoretical Physics.

Dr M. Gulacsi taught the *Statistical Physics* course in the Department of Physics and Theoretical Physics.

Dr A.S. Kheifets gave a lecture course on *Atomic Collision Processes* which was delivered to honours students in physics in March–May.

Dr S. Kuyucak gave the honours course *Classical Electrodynamics* in the Faculty of Science.

Dr R.E. Robson gave a lecture course on *Life Physics* which was delivered to students in physics in the second semester.

Membership of regular School Committees is given in section 6.

Applied Mathematics

Professor S. Hyde

Member, Selection Committee for Director, Information Infrastructure Services, ANU

Mr A. Hyde

Member, ANU Parking Reference Group

Dr T.J. Senden

Member, Advisory Committee, Centre for the Science and Engineering of Materials

Member, Advisory Committee, Electron Microscopy Unit

Dr A. Stewart

Member, Graduate Degrees Committee

Atomic and Molecular Physics Laboratories

Professor S.J. Buckman

Member, Committee, Review of the Research Services Office

Dr S.T. Gibson

Member, Board of Studies, Graduate Program in Physical Sciences

Local IT Contact Representative, RSPHysSE

Professor B.R. Lewis

Member, Faculty, Research School of Astronomy and Astrophysics

Member, Scholarly Information Services Committee

Member, Information Strategy Committee

Member, Board, Institute of Advanced Studies

Member, Science Library Advisory Committee

IAS Representative, Board of Faculties (from December)

Professor E. Weigold

Member, Academic Board

Member, Board, Institute of Advanced Studies (until October)

Member, Board, Major National Research Facilities H-1

Member, Board, Centre for Complex Systems

Member, ANU Deans & Directors (until October)

Member, Advisory Committee, Innovation Management and Policy Program

Member, Research Committee (until October)

Electronic Materials Engineering

Professor R.G. Elliman

Member, Board, Institute of Advanced Study

Member, Physical Sciences Library Committee

Member, Major Equipment Committee (MEC)

Professor N. Fletcher

Chair, Review, Centre for Sustainable Energy Systems



Member, Board, Centre for Complex Systems

Professor C. Jagadish

Member, Management Board, National Institute of Engineering and Information Science

Dr M.C. Ridgway

Convenor, Graduate Program in the Science and Engineering of Materials

Member, Board of Studies, Graduate Program in Physical Sciences

Chair, Cross-Campus Activities Committee, National Institute of Physical Sciences

Member, Steering Committee, Centre for the Science and Engineering of Materials

Dr H.H. Tan

Member, Board of Studies, Graduate Program in Engineering

Professor J.S. Williams

Convenor, National Institute for Physical Sciences

Chair, Board, Science ANU

Member, Board, Institute of Advanced Studies (from October)

Member, ANU Deans & Directors (from October)

Member, Research Committee (from October)

Member, Research Policy Option Working Group

Member, University Insurance User Group

Member, ANU Innovations Working Party

Member, Appointments Committee, RSAA

Member, Appointments Committee, ANU Public Affairs

Laser Physics Centre

Ms A. Smith

Member, School Liaison Committee for Selection of Director

Nuclear Physics

Dr A.P. Byrne

Member, Staff selection Panel, Level C position, Department of Physics, Faculty of Science

Member, Staff selection Panel, Level D position, Department of Physics, Faculty of Science

Member, Board of Studies, Graduate Program in Physical Sciences

Member, National Institute of Physical Sciences Management Committee (from October)

Convenor, Workshop in Nuclear Techniques

Co-Convenor, ACT Teachers Summer School

Professor G.D. Dracoulis

Member, Research School of Earth Sciences; Renewable Fixed Term/Tenure Review Committee

Member (IAS Representative), Promotions Committee, Board of the Faculties

Member (IAS Representative), Institute Planning Committee

Dr L.K. Fifield

Chair, Radiation Safety Sub-committee, ANU Occupational Health and Safety Policy Committee (from November)

Mr R.B. Turkentine

Member, Tender Evaluation Committee for the supply of Liquid Nitrogen and Compressed Gases

Plasma Research Laboratory

Mr G.C.J. Davies

Member, Radiation Committee

Professor J.H. Harris

Member, ANU Research Committee

Member, Board, Institute of Advanced Studies

Referee, IAS Performance and Planning Fund

IAS Representative, Review of the Faculties

Dr J. Howard

School Honours Coordinator

Theory Cluster

Applied Photonics Group & Nonlinear Physics Group

Professor J.D. Love

Member, ANU Sub-Committee on Major Equipment Expenditure

Member, ANU Postgraduate Research Scholarships Committee

Dr A. Ankiewicz

Member, Physical Sciences Library Committee

Theoretical Physics

Dr R. Ball

Convenor, 15th Physics Summer School

Member, School Liaison Committee for Selection of Director

Professor M.T. Batchelor

Deputy Coordinator, Centre for Complex Systems

Coordinator, Mathematical Physics Program, Mathematical Science Institute

Member, Promotions Committee, Mathematical Science Institute

Member, Board, Mathematical Science Institute

Member, Board of Studies, Graduate Program in Mathematical Sciences

Professor R.L. Dewar

Coordinator, Centre for Complex Systems

Member, Education Committee

Member, School Liaison Committee for Selection of Director

Dr B.A. Robson

RSPHysSE Advisor on Integrity in Research

Convenor, Working Party, Jagadishwar Mahanty Prize

