School Outreach Activities

Founder's Day

The School's Founder's Day was held on 13 October with invited guests from the ANU, government organisations, industry and the media, as well as former employees. It is a day of celebration of our Founder, Sir Mark Oliphant. The following members of staff were Founder's Day speakers:

Dr Nail Akhmediev, Optical Sciences Group

The Strange Case of the Dissipative Soliton

Professor Murray Batchelor, Department of Theoretical Physics

Frission, Fermionisation and Fractional Statistics

Dr Robert Dall, Atomic and Molecular Physics Laboratories

Making a High Power Atom Laser from the Coldest and Wimpiest Stuff in the Universe

Dr Alexis Diaz-Torres, Department of Nuclear Physics

Forming New Superheavy Elements: Fusion by Diffusion

Dr Michael Fraser, Department of Electronic Materials Engineering

Trapping the Quantum World in a Crystal

Professor Barry Luther-Davies, Laser Physics Centre

Light in Small Spaces

Dr Vanessa Robins, Department of Applied Mathematics

EPINET: A Tale of Surfaces, Symmetries, Tilings, and Nets

Dr Michael Shats, Plasma Research Laboratory

Ordering Turbulent World

Dr Andrey Sukhorudov, Nonlinear Physics Centre

Mixing Colours on a Photonic Chip

Dr Tim Wetherell

The Cryptic Triptych

Workshops and Conferences

The **Centre for Antimatter-Matter Studies** (CAMS) was officially launched by the Chief Executive Officer of the ARC, Professor Peter Høj, on 7 June, at a function in the foyer of the Research School of Physical Sciences and Engineering, attended by a number of dignitaries, including the Vice-Chancellor, Professor Ian Chubb, representatives of the University community, and members of CAMS from the various member nodes (ANSTO, ANU, Flinders University, Griffith University, Murdoch University, University of Western Australia). CAMS is hosted by the ANU and located within the Atomic and Molecular Physics Laboratories. CAMS held its first Workshop and Advisory Board Meeting at Marcoola on Queensland's Sunshine Coast, 30 November – 2 December. Some 50 participants from Australia and overseas heard presentations and progress reports from representatives of the Centre nodes.

The **Australia New Zealand Climate Forum** was organised by Professor M. Hutchinson, and Drs A. Hogg, J. Kesteven, J. Lindesay and F.P. Mills and was hosted at the ANU, 5 - 7 September 2006. Dr Mills chaired two sessions at the forum which provided a venue for researchers, policy makers, and practitioners involved in all aspects of climate science and its effective application to exchange information on the latest developments in climate science, societal vulnerability to climate variability/change, and needs for and uses of climate information. The forum was part of a continuing series held every one to two years in various locations in Australia and New Zealand.

The **20th** edition of the **Canberra International Physics Summer School** on the topic of **Granular Materials** was organized and chaired by Dr Tomaso Aste. The event was held at the ANU, 4 - 8 December 2006. The school was attended by 67 participants including 28 students or early career researchers. The school constituted in 20 plenary lectures delivered by five senior world-leading scientists which introduced and reviewed important aspects of these complex materials. On the other hand, in a combined workshop, 39 talks and 27 posters contributed to present cutting-edge research topics, exposing the young generations to the current debate in this field.

The annual **Kioloa Workshop on Materials and Complexity IV** was organised and chaired by Dr Christoph Arns. The event was held at the ANU Kioloa campus, 14 - 17 November and attracted funding by the Australian Research Network for Advanced Material, the Australian Research Council Nanotechnology Network, the Australian Research Council Complex Open Systems Research Network, and the CRC Smartprint. The workshop was attended by 60 participants including 26 students or ECRs. Senior world-leading scientists gave overview talks of their respective fields, while ECRs and and students were exposed to feedback from more senior colleagues and guests.

The Department of Nuclear Physics hosted the **Sixth Annual Workshop in Nuclear Techniques,** 25 – 28 September, coordinated by Professor Aidan Byrne. Undergraduate students from the University of Wollongong's Medical Physics Program attended this workshop and got first hand experience in the methods of nuclear measurements and in the use of large accelerators.

The **5th Accelerator Technical Forum** and the **40th Symposium of North Eastern Accelerator Personnel 2006,** 15 - 20 October 2006 was split between Sydney and Canberra. It was organised by David Weisser, Nuclear Physics ANU, David Garton, ANSTO and Roland Szymansky, Physics Department, University of Melbourne. There were 73 participants with 30 from 12 overseas and 43 from Australia and was supported by a grant from the IAEA and eight commercial sponsors. There were 37 talks over four days and visits to the ANSTO laboratory and the Nuclear Physics and Electronics Materials Engineering laboratories.

Professor Boswell was the Organiser and Chair of the **Asia Pacific Conference on Plasma Science and Technology** in July 2006 in Cairns. The SP3 staff and students worked very hard to make this conference the remarkable success that it was.

Colloquium Speakers

Professor A. Blakers, Director, Centre for Sustainable Energy Systems

The Extraordinary Prospects for Sliver Solar Cell Technology

Professor W. Bowen, Otago University, Dunedin, New Zealand

Experiments Towards a Quantum Information Network with Squeezed Light and Entanglement

Professor A. Byrne, Faculty of Science

Nuclear Power: Facts, Fallacies and Fantasies

Professor J. Hall, Nobel Laureate 2005, JILA, University of Colorado, NIST, United States

The Optical Frequency Comb – A Tool of Many Uses

Professor M. Lewenstein, ICFO Barcelona, Spain

Quo Vadis Optica Quantorum?

Professor C. Llewellyn-Smith, Director, UK Atomic Energy Authority, United Kingdom

The Path to Fusion Power

Professor G. Milburn, University of Queensland

Space, Time and Decoherence in a Quantum World

Professor H. Price, University of Sydney

Can the Future Affect the Past? Time-Symmetry in Microphysics

Professor P.A. Robinson, University of Sydney

Quantitative Modelling of Multiscale Brain Activity

Professor B. Schmidt, Research School of Astronomy and Astrophysics

Dark Energy and the Accelerating Universe

Professor J. Tostevin, University of Surrey, United Kingdom

Magic Atomic Nuclei in the Cosmos and on Earth