

DIRECTOR'S REPORT



*Professor Jim Williams
Director until March 2012*



*Professor Stephen Buckman
Director from April 2012*

The Research School of Physics and Engineering (RSPE) is the leading institution in the country for physics research and its applications. It is the largest physics-based research activity in Australia by some measure, with over 160 academic staff and a similar number of PhD students during 2012. We are also supported by more than 110 outstanding professional staff. The School has an excellent track record in innovative research and development and we support these activities through a large number of research grants from the Australian Research Council, other government agencies, and industry.

RSPE also pursues and achieves excellence in research-led education, and we strive to maintain the highest training standards and ensure a quality educational experience for all our students.

We continue to develop our staff to their full potential whilst ensuring that staff skills are matched to priority directions, and implement appropriate succession planning to replace key late career staff. It is the ability of the School to launch appropriately resourced research efforts built around outstanding staff in a number of important areas of national significance, the unique and integrated research infrastructure and the interdisciplinary collaboration with colleagues across the ANU, nationally and internationally, that distinguish the School's research effort and capacity in the national and international landscape.

Grant successes were again strong in 2012 and these are detailed in the report from the Deputy Director Research (Professor Ken Baldwin). We maintain a strong presence in three ARC Centres of Excellence, continue to host significant national research infrastructure in Nuclear, Plasma and Materials science, as well as a number of other facilities of national importance.

During 2012 the School continued to ramp up its development program in both commercial and philanthropic directions. We have appointed a new Deputy Director, Technology Development (Professor Tim Senden) to oversee the commercial development activities in the School. Our new Development Manager, Ms Kavitha Robinson, continues to focus on the growth of non-conventional funding through individual donors and alumni. She has been instrumental in the growth and consolidation of School endowments, the encouragement of workplace giving, and a stronger engagement with Alumni and friends of the School.

The Deputy Director Education (Dr Anna Wilson) left the School during 2012 and Professor John Close was appointed to this important role. John has been deeply involved in education in the School for more than 15 years and brings a wealth of experience and dynamism to the role.

A significant event for the School in 2012 was the retirement of long-serving Director, Professor Jim Williams. Jim led the School through a significant period of change for the ANU, with the entry to the ARC in 2001 and the advent of the College structure in 2009. His term as Director saw the School almost double in personnel, and almost triple in budget, and his leadership during these somewhat turbulent times was truly outstanding.

STAFF ACCOMPLISHMENTS

External Honours & Awards



2012 Eureka Prize for Innovation in Commercialisation, supported by Rio Tinto (jointly awarded to the research teams at UNSW and ANU, and the staff of Digitalcore).

Professor Jim Williams elected as a council member for Physical Sciences at the Australian Academy of Sciences

Prof. Barry Luther-Davies: Australian Optical Society W.H. Beattie Steel Award

Dr Marcus Doherty: Visiting Fellowship of the Network for Functional Nanostructures, Baden-Wuerttemberg (granted in 2012 to be used in 2013)

Professor Craig Savage - The American Physical Society, Outstanding Referee, January 2012

Prof Boswell Elected Member of the Order of Australia; Awarded Doctorate Honouris Causa, University of Orleans.

Professor Chennupati Jagadish (Secretary A, Physical Sciences) was appointed as Vice-President, at the Australian Academy of Science, until the conclusion of 2013 Annual General Meeting.

Prof Jagadish was selected as the 2012 winner of the Electronics and Photonics Division Award of the Electronics and Photonics Division of the Electrochemical Society.

Left to right: Dr Andrew Kingston (ANU), A/Prof Christoph Arns (UNSW), Dr Victor Pantano (Digitalcore), John McGagh (Rio Tinto head of Technology and Innovation), Prof Tim Senden (ANU), Professor Val Pinczewski (UNSW), Mr Tim Sawkins (ANU).



Professor Rod Boswell receiving a Doctorate Honouris Causa, University of Orleans

STAFF AWARDS AND ACHIEVEMENTS

Prof Jagadish was conferred with an Honorary Professorship at Nanjing University during their 110th anniversary celebrations.

Dr Thomas Symul – Finalist of Australian Innovation Challenge ICT Division

Professor Ping Koy Lam - Finalist of Australian Innovation Challenge ICT Division

Dr Syed Assad - Finalist of Australian Innovation Challenge ICT Division

Prof. John Howard: Finalist in the Australian Innovation Challenge (Energy category)

Dr Elizabeth Williams - Australian Institute of Policy & Science (AIPS) ACT Young Tall Poppy Science Award.



Professor Chennupati Jagadish

Promotions

Level B

Dr Yana Izdebskaya, Nonlinear Physics

Dr John Miller, Quantum Science

Level C

Dr Michael Gao, Electronic Materials Engineering

Level D

Dr Greg Lane, Nuclear Physics

Dr Andrey Sukhorukov, Nonlinear Physics



Professor Mandy Thomas and Dr Elizabeth Williams

Internal Honours & Awards

Professor Aidan Byrne was awarded the Peter Baume Award. Named after former ANU Chancellor, Professor the Hon. Peter Baume AC, this is the University's most prestigious award. It recognises eminent achievement and merit of the highest order.

Professor Neil Manson was awarded Emeritus Professor of the School

Mr Rana Ganguly was awarded a Vice-Chancellor's Award for Career Advancement



Rana Ganguly and Professor Ian Young

Mr Owen Kershaw was awarded a 30 year pin for service to the School.

Mr Michael Aggett was awarded the 25 year service medal of the University

Mr Craig MacLeod was awarded the 25 year service medal of the University

Mr Andrew Papworth was awarded the 25 year service medal of the University

Director's Awards

Anna Wilson

For exceptional contributions to the teaching of physics at ANU through undergraduate teaching, peer-mentoring and discipline leadership

Team award: Peter Alexander, Stephen Holgate, Dennis Gibson and John Wach

For combining their talents toward supporting students and staff inside and outside RSPE.

Goran Radovanovic

For exceptional and cheerful support to RSPE

Gillian Harman

For her sustained commitment, passion for excellence and dedicated service to the School community in her role as HR Officer

Alistair Muirhead

For his outstanding innovations and leadership in



Professor Stephen Buckman presenting Mr Owen Kershaw with the 30 year award.



Winners of the Directors' Awards 2012 from left to right: back row: Professor Stephen Buckman, Stephen Holgate, Dennis Gibson, Peter Alexander, John Wach and Nikolai Lobanov (on behalf of Alistair Muirhead). Front row: Gillian Harman, Goran Radovanovic and Anna Wilson.

FELLOWSHIPS OF LEARNED SOCIETIES

American Association for Advancement of Science

Professor Chennupati Jagadish (since 2007)

American Physical Society

Professor Ken Baldwin (since 2008)

Professor Murray Batchelor (since 1993)

Professor Rod Boswell (since 1998)

Professor Peter Bouwknecht (since 2000)

Professor Stephen Buckman (since 1998)

Emeritus Professor Robert Crompton (since 1995)*

Professor Mukunda Das (2003)*

Professor Robert Dewar (since 1980)

Emeritus Professor George Dracoulis (since 1993)*

Professor David J. Hinde (since 2011)

Professor Chennupati Jagadish (since 2003)

Professor Anatoli Kheifets (since 2004)

Professor Yuri Kivshar (since 2006)

Professor Brenton Lewis (since 2001)*

Professor David McClelland (since 2010)

Adjunct Professor Robert Robson (since 1994)

Emeritus Professor Erich Weigold (since 1990)*

Professor Jim Williams (since 2006)

American Vacuum Society

Professor Chennupati Jagadish (since 2008)

Astronomical Society of Australia

Professor David McClelland (since 2006)

Australian Academy of Science

Professor Vladimir Bazhanov (since 2010)

Professor Rod Boswell (since 2008)

Emeritus Professor Robert Crompton (since 1979)*

Professor Mahananda Dasgupta (since 2011)

Professor Robert Dewar (since 1992)

Emeritus Professor George Dracoulis (since 1997)*

Emeritus Professor Neville Fletcher (since 1976)*

Professor David Hinde (since 2006)

Professor Stephen Hyde (since 2005)

Professor Chennupati Jagadish (since 2005)

Professor Yuri Kivshar (since 2002)

Professor Stjepan Marcelja (since 1991)*

Emeritus Professor Barry Ninham (since 1978)*

Emeritus Professor Erich Weigold (since 1986)*

Professor Jim Williams (since 2003)

Australian Academy of Technological Sciences and Engineering

Professor Rod Boswell (since 1999)

Emeritus Professor Neville Fletcher (since 1987)*

Professor Chennupati Jagadish (since 2002)

Professor Mark Knackstedt (since 2011)

Professor Barry Luther-Davies (since 2005)

Emeritus Professor Erich Weigold (since 1996)*

Professor Jim Williams (since 1992)

Australian Institute of Physics

Professor Hans Bachor (since 1987)

Professor Ken Baldwin (since 1995)

Professor Stephen Buckman (since 1992)

Professor Mahananda Dasgupta (since 2004)

Emeritus Professor George D. Dracoulis (since 1990)*

Professor Rob Elliman (since 1994)

Professor L. Keith Fifield (since 1997)

Emeritus Professor Neville Fletcher (since 1960)*

Professor David J. Hinde (since 1996)

Professor Chennupati Jagadish (since 1993)

Professor Yuri Kivshar (since 2000)

Professor David McClelland (since 2000)

Professor Susan Scott (since 2004)

Professor Andrew Stuchbery (since 1992)

Dr David C. Weissner (since 1992)

Professor Jim Williams (since 1988)

Australian Mathematical Society

Professor Murray Batchelor (since 2001)

Professor Peter Bouwknegt FAustMS (since 2001)

Electrochemical Society

Professor Chennupati Jagadish (since 2006)

European Academy of Sciences

Professor Susan Scott (since 2002)

Higher Education Academy

Professor John Close (Senior Fellow since 2014)

A/Prof Paul Francis (Senior Fellow since 2014)

Dr Joe Hope (Senior Fellow since 2014)

Professor Craig Savage (Senior Fellow since 2013)

Institute of Electrical and Electronics Engineers

Professor Chennupati Jagadish (since 2002)

Institute of Physics (UK)

Professor Hans Bachor (since 1999)

Professor Ken Baldwin (since 2006)

Professor Murray Batchelor (since 2004)

Professor Stephen Buckman (since 2004)

Professor Rob Elliman (since 2003)

Emeritus Professor Neville Fletcher (since 1961)

Professor David J. Hinde (since 2005)

Professor John Howard (since 2005)

Professor Chennupati Jagadish (since 1998)

Professor Yuri Kivshar (since 2012)

Professor Susan Scott (since 1999)

FELLOWSHIPS OF LEARNED SOCIETIES

International Society for Optical Engineering

Professor Chennupati Jagadish (since 2006)

Institution of Engineering and Technology

Professor Chennupati Jagadish (since 2007)

Institute of Nanotechnology

Professor Chennupati Jagadish (since 2001)

Materials Research Society

Professor Jim Williams (since 2008)

Professor Chennupati Jagadish (since 2010)

Optical Society of America

Professor Nail Akhmediev (since 1996)

Professor Hans Bachor (since 2009)

Professor Ken Baldwin (since 2000)

Professor Chennupati Jagadish (since 2005)

Professor Yuri Kivshar (since 2001)

Professor Wieslaw Krolikowski (since 2007)

Professor Brenton Lewis (since 2003)*

Professor Barry Luther-Davies (since 2006)

Royal Meteorological Society

Adjunct Professor Robert Robson (since 1977)

Royal Society of New Zealand

Emeritus Professor George D. Dracoulis (Hon)* (since 1997)

The Acoustical Society of America

Emeritus Professor Neville Fletcher (since 1975)*

The Australian Acoustical Society

Emeritus Professor Neville Fletcher (since 1980)*

* *retired*

STAFF OUTREACH ACTIVITIES

Staff in RSPE contribute to a wide range of outreach activities. In the year 2012 these activities included:

National Youth Science Forum

Mr Andrew Papworth, David Powell, Dr Khu Vu and Dr Gregory Lane who presented the closing address for the NYSF in January 2012.

ACT Science Experience

Dr Gregory Lane was the Local Director for the ACT Science Experience that was held from 3rd to 5th of October. In the 2012 program, 45 year 9 and 10 students from across the ACT and NSW visited a number of scientific laboratories at both the Australian National University and Geoscience Australia.

Old Bones, New Insights Exhibition

Old Bones, New Insights Exhibition – Canberra Museum and Art Gallery, November 2011 to February 2012. Curated by Dr Gavin Young (RSES) and Prof Tim Senden this was hugely successful public display of leading ANU palaeontological research married with advanced micro-CT and 3D printing from the Department.

Heavy Ion Accelerator Symposia on Fundamental and Applied Science (HIAS).

In 2012 the Department of Nuclear Physics instituted the Heavy Ion Accelerator Symposia on Fundamental and Applied Science (HIAS). The first meeting was held from 11 – 13 April 2012. The symposium was attended by a total of 65 instrumentation and accelerator experts, national and international researchers, students and potential user communities. The meeting was successful in providing a forum to bring together researchers to develop applications of Australian Heavy Ion Accelerators

Workshop on Nuclear Measurement Techniques

In the week of September 24th to the 27th, the Department of Nuclear Physics hosted 30 undergraduate students from the University of Wollongong for the annual "Workshop on Nuclear Measurement Techniques". The students produced long-lived radioisotopes using the 14UD accelerator and then characterised the decay by measuring changes in the emitted gamma-rays over the course of the week.

The 7th Digicore Consortium

12 multinational oil/gas companies met at the Finkel Lecture Theatre for a 2 day workshop on progress the Department has made during the past year in the field of digital core analysis. They were 21 company participants and 24 from the ANU and UNSW groups. 18 talks were presented, together with a poster session.