

# Weekly Bulletin

Research School of Physics and Engineering



**Volume 35 Number 18**  
**15 – 21 May 2009**

## **FROM THE DIRECTOR'S OFFICE**

### **The good news in the budget for the School**

First, there were 3 research infrastructure announcements in the budget that will have a welcome impact on our major facilities in the School: the School's suite of micro and nanofabrication facilities; the H1 plasma facility; and the School's ion accelerators. In particular, the Australian National Fabrication Facility (of which the School is a major partner, having received \$10 million as part of the former NCRIS round) received \$50 million to continue the current NCRIS program for another 4-5 years beyond 2011. The H-1 National Plasma Fusion Facility in the School received \$5 million, which will allow upgrades and operational support for an Australian involvement (in the plasma diagnostics area) in the major international ITER fusion project. The School's ion accelerators, along with complementary facilities at Melbourne University, that were part of the NCRIS roadmap for future funding, were also highlighted in the budget with an allocation of \$10 million, again to support upgrades and operations of these major national facilities over a 4-5 year period. These budget allocations will have a flow on effect across the School as they take a huge pressure off our recurrent budget that has partly (or largely) supported these facility operations, including technical staff, in the past.

The other Commonwealth budget allocations that will have a fairly direct impact on our recurrent budget are i) the moves towards full cost of research that will be achieved through ramping up the RIBG returns over the next several years; ii) the indexation of grants to universities that will work its way through to recurrent increases over time; and iii) increases to HDR scholarships and the stipend. It is not clear how much will come to RSPE from such sources but we should more than

be able to arrest the negative trends of the past several years.

### **Sad News**

Sadly, we report the death of Fred Barker, Visiting Fellow in the Dept of Theoretical Physics, who died on Monday 11 May in John James Hospital. Fred's funeral will be held on Friday 15 May at 10.00am, Bluegum Chapel of William Coles Funerals, Belconnen. Fred was the longest standing member of the School, having started as a Junior Fellow in 1949.

## **SCHOOL SEMINARS**

### **Nonlinear Physics Centre Seminar** **Friday 15 May 2009**

11.00am

“Optimisation in the design of nonlinear left-handed transmission lines”  
by Dr Greg Milford, School of Information Technology and Electrical Engineering, UNSW, ADFA.

Link Building Seminar Room, Oliphant Building  
All welcome

### **Plasma Research Bites Seminar Series**

A new seminar series “Plasma Research Bites” has been launched by Plasma Research Laboratory. The format of the series is two 10 minute talks once a fortnight, one from PRL-Space and one from PRL-Toro (including Plasma Fluids and Theory). The purpose of this series is to provide a forum for the dissemination and brief discussion of physics results or problems in the general field of plasma physics. The 10 minute time limit, which includes question time, will be ruthlessly enforced by the Chair. Talks will start on Monday at 10:45am and will generally be held in the Conference Room in the Oliphant building, unless otherwise advised. A volunteer cake roster has also been set up. The seminar series schedule can be found at

[http://www.rsphysse.anu.edu.au/~hol105/Plasma\\_Bites/plasma\\_bites\\_schedule.html](http://www.rsphysse.anu.edu.au/~hol105/Plasma_Bites/plasma_bites_schedule.html)

# Weekly Bulletin

Research School of Physics and Engineering



The next research bite is scheduled for Monday 18 May at 10:45am in the Conference Room, Oliphant Building. Speakers are Trevor Lafleur on "Performance Optimization of Plasma Thrusters", and Jason Bertram on "A simple model for Alfvén gap modes in toroidal magnetic confinement" All welcome.

## **Mid-year Honours seminars**

**Monday 1 June 2009**

**9am - 4pm**

The Inaugural Conference of Advanced Physics  
The conference program will span a broad range of cutting edge physics from across the Research School of Physics and Engineering and beyond.  
Huxley Lecture Theatre, RSPE

## **Nonlinear Physics Centre Seminar**

**Wednesday 3 June 2009**

**2.00pm**

"Optics on the nanoscale: A new realm for surface physics, signal processing, and sensing"  
by Dr Dmitri K Gramotnev Applied Optics and Nanotechnology Program School of Physical and Chemical Sciences Queensland University of Technology.

Link Building Seminar Room, Oliphant Building

\*All welcome\*

## **STAFF MOVEMENTS**

Professor Peter Bouwknecht, Department of Theoretical Physics, will be in the USA from 14-24 May. He will be visiting the University of Southern California for research collaborations and presenting an invited lecture at the NSF/ CBMS Regional Conference in the Mathematical Sciences: "Topology, C\*- algebras, and String Duality", at Texas Christian University, Fort Worth.

Dr David Weisser, Department of Nuclear Physics, will be overseas from 21 May - 27 June and will deliver an invited talk at the 11th Heavy Ion Accelerator Technology conference in Venice, 7 - 12 June.

Dr Tibor Kibédi, Department of Nuclear Physics,

will be overseas from 17 May - 6 July. During this time he will be presenting an invited talk at the Workshop on Atomic Effects in Nuclear Excitation and Decay, Trento, Italy, presenting a poster at the Gordon Research Conference on Nuclear Chemistry, New-Hampshire, US, and also be visiting the University of Yale, and the National Nuclear Data Centre, Brookhaven National Laboratory, for collaborative work.

Dr Mark Ridgway and Mr David Sprouster will be at the Photon Factory in Tsukuba, Japan from 16-23 May 2009.

Dr Hoe Tan will be overseas, at the Fudan University, China from 16-31 May 2009.

## **NEW PHD STUDENT**

AMPL/CAMS would like to extend a warm welcome to new PhD student Prasanga Palihawadana who joins us this week. He will undertake his doctorate studies under the guidance of Professor Buckman in the Centre for Antimatter-Matter Studies.

## **VISITORS**

The Department of Electronic Materials Engineering welcomes Dr Kaushal Vora, a staff member working with Dr Fouad Karouta, Ms Sinn-Sothia Toch, a Departmental Visitor working with Dr Lan Fu (until August 2009) and Mr Samin Majdi, a Departmental Visitor working with Professor Rob Elliman (until June 2009).

## **WELCOME**

The Nonlinear Physics Centre would like to welcome a new staff member, Dr Mikhail Lapin. Dr Lapin is from Faculty of Physics, University of Seville, and he will be working with Dr I.V. Shadrivov and Dr A.D. Powell on tunable metamaterials.

## **GRANTS & AWARDS**

**Australian Research Council**

Program Number: 22848

# Weekly Bulletin



Research School of Physics and Engineering

Title: Linkage Infrastructure Equipment & Facilities (LIEF) Program

E-mail: [ncgp@arc.gov.au](mailto:ncgp@arc.gov.au)

Web Site: [http://www.arc.gov.au/ncgp/lief/lief\\_default.htm](http://www.arc.gov.au/ncgp/lief/lief_default.htm)

Program URL:

[http://www.arc.gov.au/pdf/LIEF10\\_FundingRules\\_Apr09.pdf](http://www.arc.gov.au/pdf/LIEF10_FundingRules_Apr09.pdf)

LIEF provides funding to Eligible Organisations for research infrastructure, equipment and facilities that will be used to support high-quality research projects. The minimum level of funding which will be provided by the ARC for a LIEF project is \$100,000 per calendar year.

**Deadline(s): 27/05/2009**

Link to full program description:

[http://australia.infoed.org/spin/spin\\_prog.asp?22848](http://australia.infoed.org/spin/spin_prog.asp?22848)

## Monash University

Program Number: 93337

Title: Margaret Clayton--Women in Research Postdoctoral Fellowship

E-mail: [tom.keegan@sci.monash.edu.au](mailto:tom.keegan@sci.monash.edu.au)

Program URL:

<http://www.sci.monash.edu.au/research/clayton-fellowship.html>

The Faculty of Science has established the Margaret Clayton – Women in Research Postdoctoral Fellowship to attract female early career researchers with outstanding potential to undertake research in areas of identified faculty research strength or emerging research potential, and to redress the dearth of women academics in the faculty. The fellowship is tenable only in the Faculty of Science at Monash University and it is expected that most of the time will be spent in the relevant school or centre.

**Deadline(s): 03/07/2009**

Link to full program description:

[http://australia.infoed.org/spin/spin\\_prog.asp?93337](http://australia.infoed.org/spin/spin_prog.asp?93337)

## National Institute of Biomedical Imaging and Bioengineering/NIH/DHHS

Program Number: 00711

Title: Innovation in Molecular Imaging Probes (R01)

E-mail: [y Zhang@mail.nih.gov](mailto:y Zhang@mail.nih.gov)

Program URL: <http://grants1.nih.gov/grants/guide/pa-files/PAR-09-016.html>

The sponsors provide support for the development of novel molecular imaging approaches that can detect and image specific molecular activities in vivo, and have the potential for clinical applications. Novel molecular imaging approaches developed through this initiative can focus on one (or both) of the following long-term translational goals: (1) imaging the characteristic markers, and function, of normal cells in control human subjects and patients, and (2) imaging the characteristic markers, and biochemical or physiological abnormalities, of disease cells in patients. Potential abnormalities that could provide early markers for disease include (but are not restricted to): inflammation, fibrosis, immune cell activation, altered signal transduction pathways, altered gene expression pathways, and altered post-translational modification of proteins. This initiative solicits applications that explore innovative high-impact approaches, rather than incremental technology development that is already supported by current NIH programs. This FOA will use the NIH Research Project (R01) award mechanism. <S2S>  
**DEADLINE NOTE**

Applications may be submitted to Grants.gov in response to this announcement on or after December 22, 2008.

The deadlines for receipt of optional letters of intent are: April 21, 2009 (passed); August 21, 2009; December 21, 2009; April 21, 2010; August 21, 2010; December 21, 2010; April 20, 2011; August 21, 2011.

The corresponding deadlines for receipt of full applications are:

May 21, 2009; September 21, 2009; January 21, 2010; May 21, 2010; September 21, 2010; January 21, 2011; May 20, 2011; September 21, 2011.

This program will expire on September 22, 2011.

Link to full program description:

[http://australia.infoed.org/spin/spin\\_prog.asp?00711](http://australia.infoed.org/spin/spin_prog.asp?00711)

**The Inaugural Conference of Advanced Physics  
Mid-year Honours seminars  
Huxley Lecture Theatre, RSPE  
Australian National University**

# Weekly Bulletin

Research School of Physics and Engineering



The conference program will span a broad range of cutting edge physics from across the Research School of Physics and Engineering and beyond.

## **9am - 4pm, 1 June 2009**

**9:20** - Jennifer Zhu - Electronic Materials Engineering

**9:40** - Andrew Wade - Department of Quantum Science

**10:00** - Lachlan Nicholls - Department of Quantum Science

**10:20** - Robert Evans - Atomic and Molecular Physics

**10:40** - *Tea and Coffee Break*

**11:00** - Sam Dixon - Plasma Research Laboratory

**11:20** - Victoria Hudepohl - Physical and Theoretical Chemistry, RSC

**11:40** - Andrew Manning - Atomic and Molecular Physics

**12:00** - Bill Noble - Atomic and Molecular Physics

**12:20** - *Lunch Break*

**2:20** - Mathew Creese - Plasma Physics Laboratory

**2:40** - Kirsty Hannam - Atomic and Molecular Physics

**3:00** - Justin Bewsher - Department of Quantum Science

**3:20** - Gordon McDonald - Department of Quantum Science

**3:40** - Prabha Thanarajan - Biophysics Group, RSBS