



## Research School of Physics and Engineering

Weekly newsletter | Volume 40 Number 23 | 7 - 11 July

### FROM THE DIRECTOR'S OFFICE

The Director will be on annual leave from **Thursday 3 - Wednesday 9 July**. Professor Ken Baldwin will be Acting Director during his absence.

### CONGRATULATIONS

To **Professor Yuri Kivshar** who was awarded with A.A. Lebedev Medal, a major award of the Rozhdestvensky Optical Society, a successor of the Russian Optical Society operating in Russia in 1922-1929, to recognize his outstanding contribution to the photonics sciences.



### SCHOOL SEMINAR



## Akhmediev Breathers and Fermi-Pasta-Ulam Paradox

**Professor Nail Akhmediev**

Optical Sciences Group, Department of Theoretical Physics

**4:00pm Thursday 17 July**

Leonard Huxley Lecture Theatre

For further information please see the RSPE website:  
<http://physics.anu.edu.au/events.php?EventID=214>

Drinks and nibbles will be held in the RSPE Tearoom after the Seminar

### PHYSICS PROJECT MARKET DAY

As part of Physics Project Market Day that will be held in Melville Hall on 19th August we request that all projects are updated on the website. If you want to keep current projects it is necessary to click "**Bump 2014**" which can be found through the "**Edit your profile**". If this is not performed then current projects will automatically be removed from the website

### WELCOME

#### **Nonlinear Physics Center**

Welcomes Mr **Aleksei Slobozhanyuk**, who has arrived today to commence his PhD studies with NLPC. He will have a desk in L2.17 and telephone 53063.

### DEPUTY DIRECTOR TECHNOLOGY DEVELOPMENT

#### **Careers in Focus – Google Goggles**

Ever wondered what it was like to work for Google?

Extending on the workshops in Technology Development is a series of short lunchtime presentations from science and engineering graduates who have built impressive careers outside academia. Our first speaker is **Mark Cummins**, a co-developer of Google Goggles.

Mark completed his PhD at the University of Oxford, working in the Mobile Robotics Group of Professor Paul Newman. His PhD work developed the FAB-MAP algorithm for place recognition and loop closure, which was awarded best vision paper at ICRA 2008 and is the most cited publication of the last ten years in IJRR. Most recently Mark was a senior software engineer at Google, working in the Visual Search group. This group works on a number of computer vision systems at Google, notably large-scale particular object retrieval, large-scale category recognition, robust text extraction and many other systems, with applications in products ranging from Street View to Google Goggles. Prior to joining Google, Mark was co-founder of Plink, a visual search engine company acquired by Google in 2010. Mark is now an independent entrepreneur and is a testament to the opportunities a PhD and an agile mind can create. (Background: watch his TEDx talk; <https://www.youtube.com/watch?v=96sWzEckGCw>)

**12:30 Tuesday 8 July**

#### **School Seminar Room**

Bring your lunch. The format is short (18 min) and allows informal discussion with the speaker.

### H1 UPGRADE FACILITY LAUNCH

Australian Plasma Fusion Research Facility Upgrade Opening

The Plasma Research Laboratory is preparing a special ceremony **10.30am Thursday 10 July** to mark the successful completion of the EIF-funded APFRF Upgrade. The formalities will be held in the H-1 control room followed by a tour of the facilities and a light lunch. The School will host Professor Ian Young VC, Professor Margaret Harding DVC-R, Dr Adi Paterson ANSTO CEO, Professor Andrew Roberts Dean of CPMS, Professor John O'Connor (Chair of the board) and a number of other dignitaries who will be in attendance at the event.

## ATTENTION TECHNOLOGY DEVELOPERS!

In conjunction with RSPE the Technology Transfer Office will be holding a series of workshops over the next few months. All staff and students are welcome.

9:30am Tuesday 5 August: **Establishing a Start-Up** (3 hr)  
Link Seminar Room. - basics covered, funding, marketing and stories shared.

9:30am Tuesday 2 September: **Industry Engagement** (3 hr) -  
Link Seminar Room. A guide to presenting your ideas and maintaining relationships with industry.

**For catering purposes please register with Tim Senden two days before each workshop.**

## 3 MINUTE THESIS COMPETITION

The [3MT](#) international research student competition is on again for 2014 and the Australian National University is currently preparing for the school heat, college and ANU finals of the [3 Minute Thesis competition](#).

The school encourages all research students to participate in this exciting and rewarding competition. To ensure you do well the school recommends that you attend as many 3MT preparatory workshops as possible such as:

**8 July - [Three Minute Theatre](#)**

The school's 3MT heat (including a light lunch) will be held on **24 July 2014**, followed by the College final in August ready for the final ANU 3MT competition on Wednesday 17 September 2014. In regard to prizes on offer, for ANU college 3MT winners will receive \$1,000 research support grant and up to \$4,000 on offer for ANU final 3MT winners.

Further information: [rspe.hdr.sa@anu.edu.au](mailto:rspe.hdr.sa@anu.edu.au)

## THE PHYSICS EDUCATION CENTRE

The Physics Education Centre invites interested academic staff to apply for the position of convenor/lecturer for 2nd year Thermal and Statistical Physics (PHYS2020). This position starts in first semester 2015. This is an excellent opportunity for a staff member to become involved in lecturing and to take on a leadership role in the School. The Physics Education Centre is a very supportive environment, and there is a great deal of help and advice available for staff members wishing to take on lecturing as part of their academic activity. Interested staff are encouraged to contact Prof John Close.

**The Education Spring Planning Day** will be held on the **12th of September** this year. We have three working groups who are designing our new physics curriculum and course structure. The findings of these groups will be presented in the morning of the planning day and discussed in the afternoon. This will be an important meeting for the School, and all staff and students are encouraged to put this date in their calendar.

## OHS BULLETIN

### Training courses

Manual handling (OHSG06) **16 July**

Electrical Australian design standards (OHSA24) **21 July**

Ionizing radiation safety - Machines (OHSA19) **22 July**

## DEPARTMENTAL SEMINARS

### **Laser Physics Centre**

**High resolution spectroscopy of rare earth-doped crystals and application to information processing**

**A/Professor Matthew Sellars**

Laser Physics Centre / RSPE

**2:00pm Tuesday 8 July**

RSPE Link Seminar Room

### **Applied Mathematics**

**Analysis of Complex Spatio-Temporal Patterns via Computational Algebraic Topology<sup>2</sup>**

**Professor Konstantin Mischaikow**

Rutgers University

**3:17pm Tuesday 8th July**

Le Couteur Seminar Room 3.17.

### **Nuclear Physics Department**

**Time-dependent Hartree-Fock calculations for multi-nucleon transfer and quasi-fission processes**

**Kazuyuki Sekizawa**

University of Tsukuba, Japan

**11:00am Monday 21st July**

Nuclear Physics Seminar Room

### **Electronic Materials Engineering**

**New epitaxial growth techniques for low- and high-density semiconductor quantum dot materials and their applications in classical and quantum optical communication systems**

**Professor Johann Peter Reithmaier**

Technische Physik, Institute of Nanostructure Technologies and Analytics (INA), CINSA, University of Kassel, Germany

**11:00am Friday 11th July**

RSPE Link Seminar Room

**Atomic scale analysis of semiconductor nanostructures**

**Professor Paul M Koenraad**

Department of Applied Physics, COBRA, Eindhoven University of Technology, the Netherlands

**11:00am Friday 25th July**

RSPE Link Seminar Room