



# News

## General News

### International Congress of Mathematicians

During 2011 and 2012 the Society's Council explored the possibility of the Australian Academy of Science submitting a bid to host the International Congress of Mathematicians in 2018. Peter Taylor, Arun Ram and Jon Borwein spent a considerable amount of time investigating possibilities, but in the end there was no-one who offered to lead a bid.

Council remains keen to explore ways in which Australia can host a future bid. At its September meeting last year it therefore agreed that it should collaborate with AMSI in supporting the attendance of some early to mid career mathematicians at the 2014 ICM, with the express understanding that this could lead to leadership roles in a future bid to host the Congress. The opportunity to bid for 2018 having passed, the next possibilities are for the 2022 or 2026 congresses, which explains the decision to seek involvement beyond that of senior members of the Society.

The Society and AMSI have committed up to \$6000 each to support the attendance of up to three Society members at the 2014 International Congress and General Assembly of the IMU in Korea. If you are interested in receiving such support (with the implied commitment to a possible leadership role in a future bid for the Congress) please submit an expression of interest to the Society's President, Peter Forrester, at [pjforr@unimelb.edu.au](mailto:pjforr@unimelb.edu.au) by Friday 26 July 2013.

Those receiving support will be expected to submit a short report to the Society after attending the congress.

### Mathematicians in the Media

Dr Rosemary Mardling from Monash received continued media coverage following her Federation Square panel discussion about life on distant planets: <http://www.theage.com.au/technology/sci-tech/the-lone-rangers-20130419-2i4lk.html#ixzz2R92EFTi4> and for other media discussions and various online publications: <http://www.yasstribune.com.au/story/1512298/et-enjoys-the-simple-things-in-life/?cs=24>.

Hamish Ramsay from Monash gave media coverage about tornados: <http://www.theherald.com.au/story/1389432/multimedia-tornados-in-australia/interactive>.

Dr Simon Campbell from Monash was in the media discussing how stars age and die: <http://www.theage.com.au/national/astronomers-rewrite-life-story-of-stars-20130530-2ndeb.html>, <http://www.eso.org/public/news>.

Dr Norman Do from Monash was in the media for his interview with Google Australia on what it is like to explore maths. This interview was used to encourage

students in the Doodle 4 Google competition: <http://www.google.com.au/doodle4google/download.html>. He was also in the media for his participation in the ‘science story-telling evening’ that he took part in recently (<http://thelaborastory.com/stories>).

### **Maths and Science Digital Classroom**

The University of Southern Queensland (USQ) will lead a consortium of Australia’s regional universities to put in place a virtual classroom for teachers and students to upgrade skills in the areas of maths and science. The Regional Universities Network (RUN) has been awarded a federal grant of \$900 000 for the one-year pilot project ‘RUN Maths and Science Digital Classroom: a Connected Model for all of Australia’. The grant under the Federal Government’s Australian Maths and Science Partnership Program (AMSPP) was announced by the then Minister for Higher Education and Skills Sharon Bird on 28 May.

Other members of RUN are Southern Cross University, University of the Sunshine Coast, University of Ballarat, University of New England and Central Queensland University. The grant will lead to them partnering with more than 20 schools, the Australian Mathematical Sciences Institute (AMSI), the Commonwealth Scientific and Industrial Research Organisation (CSIRO), and the Primary Industry Centre for Science Education (PICSE) to encourage the study and teaching of maths and science in regional Australia.

AMSI and PICSE have developed successful professional development and outreach programs for schools, teachers and community groups, especially those teaching mathematics out-of-field. Since 2005, AMSI has been running intensive numeracy programs for primary and secondary teachers in rural and regional Australia, where there are high proportions of disadvantaged students and where the challenges and needs for fostering an interest in maths and the sciences are greatest. This new project will reach up to 30 mathematics teachers and 1200 students. Specialists will work face-to-face with teachers to develop their mathematics teaching practices and content knowledge. Key to the program is a focus on mathematics careers awareness, so that teachers can better prepare students for their post-secondary choices and for entering the workforce.

Using the rollout of the National Broadband Network as its platform the digital classroom project will pilot a teaching and professional development program that will connect students from schools located in rural and regional settings to engage in online teaching activities in mathematics and science. The virtual centre, complemented by in classroom training, will form the basis for the professional development of teachers through engagement with experts.

### **Peter Higgins Wins Peano Prize**

Peter Higgins, a Monash graduate and long time Professor at the University of Essex, has won this year’s Peano Prize for Mathematical Literature.

The Peano Prize has the aim of promoting the public understanding of mathematics. It is awarded annually by the Associazione Subalpina Mathesis for the best

book published in Italy during the previous academic year. Previous winners of the prize have included popular writers such as Marcus du Sautoy, and Ian Stewart.

Peter's book, *Nets, Puzzles, and Postmen: An Exploration of Mathematical Connections*, was originally published by Oxford University Press in 2007. It was translated by Domenico Minunni as *La matematica dei social network: Una introduzione alla teoria dei grafi*, and published by Edizioni Dedalo in 2012. It explores how many phenomena in the real world, e.g. railways, mingling at parties, mazes, and the internet, are all networks, and the remarkable insights that this deep mathematical structure leads to.

---

## Completed PhDs

### Monash University

- Dr Kareem Taha Morsi Ali Edgindy, *Gegenbauer collocation integration methods: advances in computational optimal control theory*, supervisor: Kate Smith-Miles.
- Dr Luke Benjamin Hande, *The atmospheric boundary layer over the Southern Ocean*, supervisors: Steven Siems and Michael Manton.
- Dr Yi Huang, *Observations and simulations of cloud thermodynamic phase over the Southern Ocean*, supervisor: Steven Siems.
- Dr Marie Elizabeth Newington, *Solar magneto-atmospheric oscillations*, supervisor: Paul Cally.

### Swinburne University of Technology

- Dr Sridhar Kannam, *Prediction of fluid slip at graphene and carbon nanotube interfaces*, supervisors: Billy Todd (Swinburne U), Peter Daivis (RM-IT) and Jesper Hansen (Roskilde University, Denmark).

### University of Adelaide

- Dr Alexander Hanyasz, *Holomorphic flexibility properties of complements and mapping spaces*, supervisors: Finnur Larusson and Nicholas Buchdahl. Alexander was awarded the Dean's Commendation for Doctoral Thesis Excellence.

### University of Newcastle

- Dr James Wan, *Random walks, elliptic integrals and related constants*, supervisors: Jonathan Borwein and Wadim Zudilin.

### University of Queensland

- Dr Adam Grace, *Markov chain Monte Carlo for rare-event probability estimation*, supervisor: Dirk Kroese.

### University of Sydney

- Dr Hamish Ivey-Law, *Algorithmic aspects of hyperelliptic curves and their Jacobians*, supervisor: David Kohel.
- Dr Roy Nawar, *On pricing and hedging of commodity derivatives and other hybrid products: theories and empirical implementations*, supervisor: David Ivers.

---

## Awards and other achievements

### University of Melbourne

- Professor Peter Hall, UOM, was recently elected as a Foreign Associate of the US National Academy of Sciences.
- Professor Terry Speed, UOM/WEHI, has been elected as a Fellow of the Royal Society.
- Dr Henry Segerman, UOM, has been awarded the Inaugural Award for Excellence in Engagement (Outreach and Science Communication).

### UNSW

- Dr Josef Dick has been announced as the co-winner (with Friedrich Pillichshammer of the University of Salzburg) of the 2013 Prize for Achievement in Information Based Complexity (IBC).

Among other research achievements, Josef Dick and Friedrich Pillichshammer are co-authors of a 600-page monograph published by Cambridge University Press in 2010.

The IBC Prize is in part a recognition of the importance of this book. As of May 2013, it is ranked by MathSciNet in the top 100 of the most cited publications in mathematics of 2010.

Dr Dick is a Senior Lecturer and QEII Fellow in the School. He received the 2012 Christopher Heyde medal, which is a prestigious award of the Academy of Science for distinguished research by a person under the age of 40. He was recognised for his work in numerical integration.

In October, Dr Dick will attend the Workshop on Quasi-Monte Carlo Methods in Austria, where he will be presented with a plaque as part of his IBC Prize.

A very big congratulations to Josef for this impressive achievement.

### University of Sydney

- At the Faculty of Science Awards Night on 15 May, Ivan Guo was awarded a Helen Beh Award for citizenship and William Tong received a Postgraduate Research Prize.

### University of Wollongong

Educational Strategies Development Fund (ESDF) grants:

- ‘Jump into R’  
Recipients: Dr Sandy Burden, Dr Carole Birrell, Dr Thomas Suesse and Associate Professor Anne Porter \$8000.
- ‘Embedded Learning Support: MATH142 & MATH188’  
Associate Professor Anne Porter, Dr Ben Maloney and Dr Maureen Edwards \$6000.
- Faculty of Informatics Early Career Award for Outstanding Contribution to Teaching and Learning (OCTAL) 2013:  
Dr Nathan Brownlowe.

### Appointments, departures and promotions

#### La Trobe University

- Professor Brian A. Davey retired on 28 June 2013 after 38 years of service. The 2013 General Algebra and Its Applications Conference (GAIA2013), announced in the last issue, was held on 15–19 July in celebration of his retirement and 65th birthday. About 70 mathematicians attended, most from overseas. The *Gazette* editors would also like to thank Brian for several years of service as local correspondent.

#### Swinburne University of Technology

- Dr Federico Frascoli has been appointed as a Lecturer, Level B, in Applied Mathematics, commencing in July 2013. Dr Frascoli obtained his ‘Laurea’ in Mathematical Physics at the Università Degli Studi di Parma in Italy in 2001 and PhD in Computational Science at Swinburne in 2007. Most recently he was appointed as a postdoctoral research fellow at the University of Melbourne, Department of Mathematics and Statistics, working with Professor Kerry Landman on mathematical modeling of biological cellular systems. His research interests are in mathematical biology, dynamical systems and statistical mechanics.
- Dr Andrey Pototsky has been appointed as a Lecturer, Level B, in Applied Mathematics, commencing in September 2013. Dr Pototsky is currently a Lecturer in Applied Mathematics at the University of Cape Town, South Africa. He did his bachelor degree in the Ukraine at Dnepropetrovsk State University, followed by MSc and PhD degrees at Brandenburg University of Technology, Cottbus, Germany, completing in 2005. His research expertise spans complex systems, dynamical systems and stability analysis, numerical methods, and statistical mechanics applied to soft condensed matter and biological systems.

#### University of Ballarat

- David Gillam is leaving the University of Ballarat after five and a half years of outstanding service. We wish him all the best with his new role at Swinburne University.

- Dr Savin Chand has commenced as a Lecturer in Statistics. He completed his PhD at the University of Melbourne in 2011 and since then has been working with the Bureau of Meteorology. He has been working on environmental and climatic systems and applying statistical models in these areas.
- Emeritus Professor Sid Morris has prepared seven short videos on pure mathematics, infinite set theory, sequences and nets, and writing proofs in mathematics. These are published on YouTube and the Chinese website, Youku, and have had about 2000 views. These supplement his free online topology book available in English, Arabic, Chinese, Greek, Persian, Russian and Spanish. The website [www.topologywithouttears.net](http://www.topologywithouttears.net) links to the book and videos.

#### University of Melbourne

- Dr Guangjun Xu has joined the university.
- Dr Xiang Fu has joined the university.
- Dr Enlong Liu (Research Fellow) has left the university.

#### University of Newcastle

- Dr Thomas Kalinowski has been appointed as a Lecturer starting in July 2013.
- Professor Mirka Miller has joined the School of Mathematical and Physical Sciences.

#### University of Sydney

- Nicola Armstrong, Martina Chirilus-Bruckner, Andrew Papanicolaou and Oded Yacobi have accepted fixed-term lectureships and will be commencing in July.
- Anne Thomas will be leaving at the end of August to take up a position in the UK.

#### University of Technology, Sydney

- Professor Raymond Carroll (Texas A&M University, USA) is joining the School of Mathematical Sciences on a fractional basis. He will initially be in the School 18 June to 16 July 2013.

#### University of Wollongong

- Marijka Batterham and James McCoy have been promoted to Level D.

---

### New Books

#### Monash University

- Engel, E.J., Schad, M. and Lausch, H. (2012). *Moses Mendelssohn: Schriften und Materialien*, Band 2: Philosophica, Judaica, Mathematica. Edition Roerich Gesellschaft Deutschland, Göttingen.

### University of Newcastle

- Borwein, J.M., Glasser, M.L., McPhedran, R.C., Wan, J.G. and Zucker, I.J. (2013). *Lattice Sums Then and Now*. Encyclopedia of Mathematics and its Applications, **150**, Cambridge University Press.
- Borwein, J.M., Shparlinski, I. and Zudilin, W. (eds) (2013). *Number Theory and Related Fields: In Memory of Alf van der Poorten*. Springer Proceedings in Mathematics & Statistics, **43**.

---

### Conferences and Courses

Conferences and courses are listed in order of the first day.

#### **First International Conference on Creative Mathematical Sciences Communication 2013 Theme: Computer Maths-Curiosity, Art, Story**

Date: 2–5 August and 6–10 August 2013

Venue: Charles Darwin University

Web: [www.cdu.edu.au/conference/csmaths](http://www.cdu.edu.au/conference/csmaths)

For more information see the website, or see *Gazette* 40(1), p. 73.

#### **Australian-Japanese Workshop on Real and Complex Singularities**

Date: 9–13 September 2013

Venue: University of Sydney

Web: [www.maths.usyd.edu.au/u/laurent/RCSW](http://www.maths.usyd.edu.au/u/laurent/RCSW)

#### **AMSI workshop on Infectious Disease Modelling**

Date: 25–27 September 2013

Venue: Newcastle, Australia

Web: <http://carma.newcastle.edu.au/meetings/indimo/>

This workshop is organised by the mathematical biology special interest group of the Australian and New Zealand Industrial and Applied Mathematics subdivision of AustMS.

This workshop is aimed at applied mathematicians and computer scientists. The main themes are the interface between model-based data and scenario analysis, and the relationship between micro-simulation and modelling. There is space in the programme for contributed talks, and there will be a prize for the best poster by an early career researcher.

Confirmed keynote speakers include

- Professor Matt Keeling, University of Warwick
- Associate Professor Jane Heffernan, York University

- Dr Steven Riley, Imperial College London
- Associate Professor Alex Cook, National University of Singapore

Abstract submission and registration are now open.

For more information, please see the conference website.

### **Annual Conference of the Australian Mathematical Society**

Date: 30 September – 3 October 2013

Venue: University of Sydney

Web: [www.maths.usyd.edu.au/u/austms2013](http://www.maths.usyd.edu.au/u/austms2013)

Registration is now open. Please visit the website. Please note that Early Bird registration rate for this meeting is only available until 16 July.

### **DELTA 2013**

Date: 24–29 November 2013

Venue: The Pavillion, Kiama, NSW

Web: [www.delta2013.net](http://www.delta2013.net)

For further details visit the website, or see *Gazette* 40(1), p. 74.

### **EMAC 2013: 16th Engineering Mathematics and Applications Conference**

Date: 1–4 December 2013

Venue: Queensland University of Technology, Brisbane

Web: [www.emac2013.com.au](http://www.emac2013.com.au)

For more information see the website, or see *Gazette* 40(2), p. 148–149.

### **MODSIM2013: International Congress on Modelling and Simulation**

Date: 1–6 December 2013

Venue: Adelaide Convention Centre, South Australia

Web: <http://mssanz.org.au/modsim2013>

For more information see the website, or see *Gazette* 40(2), p. 149.

### **37ACCMCC: 37th Australasian Conference on Combinatorial Mathematics and Combinatorial Computing**

Date: 9–13 December 2013

Venue: University of Western Australia

Web: <http://37acmcc.wordpress.com>

Contact: Director: Professor Gordon Royle (37acmcc at uwa.edu.au)

For more information see the website, or see *Gazette* 40(2), p. 149.



**ANZIAM 2014**

Date: 2–6 February 2014

Venue: Millennium Hotel, Rotorua, New Zealand

Web: <http://anziam2014.auckland.ac.nz>

The 50th Annual Conference of Australian and New Zealand Industrial & Applied Mathematics is being hosted by the ANZIAM New Zealand Branch in 2014. The host city is Rotorua which is only two-and-a-half hours south of Auckland, and the venue is the Millennium Hotel, centrally located close to all the attractions of this unique tourist city.

The details are progressively being posted on the website.

---

**Visiting mathematicians**

Visitors are listed in alphabetical order and details of each visitor are presented in the following format: name of visitor; home institution; dates of visit; principal field of interest; principal host institution; contact for enquiries.

Marzieh Akbari; K.N. Toosi University of Technology, Iran; 1 March to 1 October 2013; –; UWA; Cheryl Praeger

Dr Tarje Bagheer; University of Copenhagen, Denmark; 14 February 2012 to 13 February 2014; –; UMB; Craig Westerland

Dr Mark Blyth; University of East Anglia; 4–22 August 2013; –; UWA; Andrew Bassom

Toralf Burghoff; University of Jena, Germany; 2 April 2013 to 31 March 2014; –; UOM; Kostya Borovkov

Dr Lingzhou; Yangzhou University, China; 26 March to 25 September 2013; non-linear PDE; UNE; Yihong Du

Xiaoran Sun; Harbin Institute of Technology; October 2012 to September 2013; –; UWA; Michael Small

Sara Taskinen; University of Jyväskylä, Finland; January to December 2013; robust multivariate analysis and applications in ecology; UNSW; David Warton

Mr Jonas Teuwen; TU Delft; 4 February 2013 to 31 August 2013; analysis and geometry; ANU; Pierre Portal

Binzhou Xia; Peking University; 1 September 2012 to 20 March 2014; –; UWA; Cai Heng Li

Ms Ting Zhang; University of Science and Technology, China; 1 September to 31 August 2013; applied and nonlinear analysis program; ANU; Xu-Jia Wang

Assoc Prof Jin-Xin Zhou; Beijing Jiaotong University; 16 November 2013 to 16 November 2014; UWA; Cai Heng Li

---