News

General News

Maths major at SCU

Southern Cross University now offers a major in Mathematics, as part of a Science degree. This offer is a progression from offering Mathematics retraining for teachers (starting 2012) and from offering Mathematics for Engineering (which began just this year, 2013). The contact person for this is Dr Geoff Woolcott.

Several grants for mathematics and science education have been awarded to SCU this year through the Federal Department of Innovation, the Office of Learning and Teaching or through the Australian Mathematics and Science Partnership Program. One of the aims of such projects is to have mathematicians work more closely with mathematics educators.

Launch of MAXIMA

On 25 September, Monash University launched a new initiative called MAXIMA: the Monash Academy for Cross & Interdisciplinary Mathematical Applications. MAXIMA aims to harness the mathematical talent pool found in various faculties across Monash into a single (virtual) entity, and provide a shop-front for interdisciplinary researchers and industry partners wishing to collaborate with mathematically trained researchers to tackle significant problems with a mathematical underpinning. MAXIMA focuses on supporting collaborative research, facilitating consulting work, providing education and training opportunities for students, as well as outreach activities to showcase the importance of mathematics to school children and teachers. For more details about MAXIMA, please visit monash.edu/maxima or contact the Director of MAXIMA, Professor Kate Smith-Miles (kate.smith-miles@monash.edu).

Magma to become more widely available

The Computational Algebra Group at the University of Sydney (http://magma.maths.usyd.edu.au/group/) has concluded an agreement with the US-based Simons Foundation (http://www.simonsfoundation.org) that will make their computer algebra system Magma more widely available in the United States. The Agreement came into effect on 1 August 2013 and will run for three years.

Mathematics in the media

Stephanie Pradier from AMSI recorded a piece on the importance of mathematics for the Radio National Program Ockham's Razor which was aired on Sunday 20 October. The podcast can be downloaded at the ABC Radio National website (http://www.abc.net.au/radionational/programs/ockhamsrazor/maths-is-everywhere/5028094).

Terry Speed from the Walter and Eliza Hall Institute appeared on the Channel 10 program The Project on Wednesday 30 October (http://tenplay.com.au/channel-ten/the-project/2013/10/30).

Dr Jonathan Keith from Monash gained media attention for his work on tracking the spread of the red imported fire ant which is causing problems in Queensland's Lockyer Valley vegetable growing region (http://www.abc.net.au/pm/content/2013/s3825745.htm).

Professor Paul Cally from Monash wrote a piece for The Conversation on solar flares (http://theconversation.com/a-solar-magnetic-reversal-means-theres-no-need-to-flip-out-yet-17136).

Associate Professor Steven Siems from Monash gained media attention for his collaboration with the University of Southern Queensland and the Bureau of Meteorology to improve forecasting and warning of severe storms (http://www.thesatellite.com.au/news/weather-warning/1962592/).

Conference in honour of Cheryl Praeger

The Second International Conference on Permutation groups and Transitive graphs was held in Kunming China, 3–9 September, in honour of Cheryl Praeger's 65th birthday.

Completed PhDs

La Trobe University

- Dr Amanda Joy Shaker, *Combining dimension reduction methods*, supervisors: Luke Prendergast and Robert Staudte.

Monash University

- Dr Santiago Barrera Acevedo, *Perfect sequences and arrays of unbounded lengths and sizes over the basic quaternions*, supervisor: Thomas Hall.
- Dr Pallavi Devidas Govekar, *Three dimensional cloud and dynamical structure of southern hemisphere extra-tropical cyclones in observations and in a model*, supervisor: Christian Jakob.
- Dr Louise Wilson, *The spatial and temporal characteristics of rainfall in south-eastern Queensland*, supervisors: Michael Manton and Steven Siems.
- Dr Ying Oon Tan, *Option pricing with a natural equivalent martingale measure for log-symmetric Levy price processes*, supervisors: Kais Hamza and Fima Klebaner.

Queensland University of Technology

- Dr Elliot Carr, *Exponential integrators and a dual-scale model for wood drying*, supervisors: Ian Turner, Patrick Perré and Vo Anh. Winner of an Outstanding Doctoral Thesis Award.

- Dr Brodie Lawson, *Cell migration and proliferation on homogeneous and nonhomogeneous domains: modelling on the scale of individuals and populations*, supervisors: Graeme Pettet and Daniel Mallet.
- Dr Jacqueline Horne, *Mathematical modelling of soft callus formation in early murine bone repair*, supervisors: Graeme Pettet, Daniel Mallet and Scott McCue.
- Dr Steven Psaltis, *Multicomponent charge transport in electrolyte solutions*, supervisors: Troy Farrell and Geoffrey Will.
- Dr Mike Hou-Ning Hsieh, *Mathematical modelling of controlled drug release from polymer microspheres: incorporating the effects of swelling, diffusion and dissolution via moving boundary problems*, supervisors: Scott McCue, Timothy Moroney and Graeme Pettet.
- Dr Steven Dargaville, *Mathematical modelling of LiFePO4 cathodes*, supervisors: Troy Farrell and Ian Turner.
- Dr Trisilowati, *Mathematical modelling of tumour growth and interaction with host tissue and the immune system*, supervisors: Daniel Mallet and Scott McCue.

University of Ballarat

- Dr Nargiz Sultanova, *Aggregrate subgradient smoothing methods for large scale nonsmooth nonconvex optimization and applications*, supervisors: Adil Bagirov, Andrew Barton and David Yost.

University of New South Wales

- Siti Amirah Abd Rahman has had her PhD recommended, *Freight train scheduling on a single line network*, supervisor: Gary Froyland.
- Andrew Chernih completed his PhD, *Multiscale Wendland radial basis functions and applications to solving partial differential equations*, supervisors: Ian Sloan, Rob Womersley and Q Thong Legia.

University of South Australia

- Dr Jing Huang, *Forecasting wind and solar energy on short time scales*, supervisors: Malgorzata Korolkiewicz and John Boland.
- Dr Saba Majeed, *New duality results for separable optimization problems in infinite dimensions: applications to optimal control theory*, supervisors: Regina Burachik and Yalcin Kaya.
- Dr Mohammed Rizvi, *New optimality conditions for nonlinear multiobjective optimization problems and new scalarization techniques for constructing pathological Pareto fronts*, supervisors: Yalcin Kaya and Regina Burachik.
- Dr Nahid Banihashemi, *Inexact restoration and adaptive mesh refinement for constrained optimal control*, supervisors: Yalcin Kaya and Regina Burachik.
- Dr Timofei Bogomolov, *Trading strategies used by hedge funds*, supervisors: John van der Hoek, Petko Kalev (School of Commerce) and Robert Elliott (U Calgary).

University of Western Australia

- Dr Brian Corr, *Estimation and computation with matrices over finite fields*, supervisors: Cheryl Praeger and Akos Seress. (Brian will be continuing in Perth for a few months on an AustMS Lift-off Fellowship.)

University of Wollongong

- Dr Luke Sciberras, *Propagation of nonlinear optical beams in finite liquid crystal cells*, supervisors Annette Worthy, Noel Smyth (University of Edinburgh, Scotland UK) and Tim Marchant.

Awards and other achievements

Flinders University

The Academy of Sciences of the Czech Republic has awarded Dr Jaroslav (Jerry) Kautsky the 2013 Bernard Bolzano Honorary Medal for Merit in Mathematical Sciences. The medal was presented to Jerry on October 18, 2013 at JK80, an informal seminar to honour his upcoming birthday, at the Institute of Information Theory and Automation (UTIA) in Prague.

The Bernard Bolzano Honorary Medal is named after the Prague mathematician Bernardus Placidus Johann Nepomuk Bolzano (1781–1848), well known for his influence on modern analysis. Since 1995, the Bolzano Medal has been awarded to distinguished mathematicians who have contributed considerably to the development of their research field, and who have fruitfully collaborated with researchers in the Czech Republic. Jerry is now in the distinguished company of such previous winners as Kazimierz Kuratowski, Jaroslav Kurzweil, Czeslaw Olech, Sergei L. Sobolev, Jindrich Necas, Gene H. Golub, Ivo Babuška, David E. Edmunds, Jean Mawhin, Michal Křížek and Gilles Godefroy.

Monash University

Dr Norman Do received a 2013 Young Tall Poppy Science Award, at a ceremony at Bio21 hosted by the Australian Institute of Policy and Science on 3 October. Norm's award acknowledges the outstanding contributions he has made in his career so far, not just as a mathematician, but as a mathematical communicator. He is involved in many outreach activities (IMO training, mentoring talented secondary students, Maths of Planet Earth school resource writing, etc.).

University of Ballarat

Associate Professor Adil Bagirov has won an ARC Discovery grant to continue his research on Global and non-smooth optimisation problems. Fellow investigators are Professor Juan Enrique Martinez Legaz of the Autonomous University of Barcelona and Prof Emilio Carrizosa of the University of Sevilla.

UNSW Canberra

Jason Sharples and his colleague Rick McRae from the ACT Emergency Services Agency have been short-listed as one of the three finalists for the 2013 Australian Museum Eureka Prize for Environmental Research.

University of South Australia

Dr Peter Pudney won the 2013 Unsung Hero of South Australian Science Communication.

University of Sydney

- Leon Poladian is one of the investigators on an Office of Learning and Teaching grant for Enhancing the Training of Mathematics and Science Teachers for the project 'Inspiring mathematics and science in teacher education'.
- Sheehan Olver received an International Research Collaboration Award to support a visit by Professor Peter Miller (University of Michigan) on a project entitled 'Numerical methods for inverse-scattering and stability of nonlinear waves'.

University of Wollongong

- Awards: National Office for Learning and Teaching (OLT) Citation for Outstanding Contributions to Student Learning for 2013.
- Dr Caz Sandison: For outstanding dedication to developing and implementing innovative curriculum that influences and motivates students of all levels and backgrounds to learn mathematics.
- Dr Caz Sandison was also part of a successful OLT project led by Prof Merrilyn Goos and Prof Joseph Grotowski at the University of Queensland, titled 'Inspiring mathematics and science in teacher education'.

Appointments, departures and promotions

Macquarie University

In view of the strong field of applicants for the Lectureship position in the Mathematics Department, Macquarie University agreed to offer Lectureships to the top two candidates. Both candidates have now accepted.

- Dr Richard Garner (currently in Computing at Macquarie and earlier from St John's College, University of Cambridge) joined the Department on 15 August. Richard holds an ARC Research Fellowship (and is a CI on another grant), and it has been agreed that he will continue in this research-only role until the conclusion of the Fellowship at the end of 2015.
- Dr Ji Li (Sun Yat-sen University, Guangzhou, China) will join the Department on 15 January 2014 in the role of Lecturer with regular allocation of research and teaching duties.

Monash University

- Dr Jussi Toivanen commenced as Research Fellow with the School on 19 August on a fixed-term contract for 10 months. Jussi's research interests are in Fire models, Numerical modelling of physical systems and high-performance computing. Jussi's supervisor is Professor Michael Reeder.
- Dr Huseyin Acan commenced as Research Fellow with the School on 2 September on a two-year fixed-term contract. Huseyin's research interests are in probabilistic combinatorics, random graphs and random combinatorial structures, asymptotic enumeration. Huseyin's supervisor is Professor Nicholas Wormald.
- Dr James Wurster commenced as a Research Fellow with the School on 16 September on a three-year fixed-term contract. His research interests are in computational astrophysics. His research interests also include star formation, and he is running simulations of star formation in molecular clouds. James' supervisor is Dr Daniel Price.
- Dr Jennifer Fletcher commenced as a Research Fellow with the School on 23 September on a two-year fixed-term contract. Jennifer's areas of interest include the physics and modelling of cumulus convection; understanding and modelling cloud feedbacks on climate; tropical meteorology. Jennifer's supervisor is Professor Christian Jakob.

Queensland University of Technology

- Dr Chris Drovandi, Statistical Science, has been appointed as Lecturer.
- Dr Joanne Hall, Decision Science, has been appointed as Lecturer.
- Dr Petrus van Heister, Applied and Computational Mathematics, has been appointed as Lecturer.
- Dr Stephen Sugden, Applied and Computational Mathematics, has been appointed as Lecturer.
- Dr Wouter Koolen, Machine Learning, has been appointed as QUT Vice-Chancellor Research Fellow.
- Associate Professor Matthew Simpson has been appointed as Associate Professor (Level D).
- Dr Douglas Stebila has been appointed as Senior Lecturer (Level C).

Swinburne University of Technology

Dr Ant Edwards has been appointed as a Lecturer, Level B, in Mathematics Education, commencing October 2013. Dr Edwards received his MMath degree in Mathematics from the University of Warwick (UK) in 2007, and a PhD in Mathematics Education from Loughborough University (UK) in 2011. Since 2010, he has managed the University of York's Maths Skills Centre. His research areas include undergraduate mathematical cognition, the role of examples in learning and teaching tertiary mathematics, and students' engagement with online learning resources.

University of Adelaide

- Dr Pedram Hekmati has been promoted to Lecturer (level B).

University of NSW

- Josef Dick has been promoted to Associate Professor with effect from January 2014.
- Catherine Greenhill has been promoted to Associate Professor with effect from January 2014.
- Jake Olivier has been promoted to Associate Professor with effect from January 2014.

UNSW Canberra

- Jason Sharples was promoted to Senior Lecturer from 1 July 2013.
- Dr Colin Simpson has joined the School of Physical, Environmental and Mathematical Sciences (UNSW Canberra) as a Postdoctoral Fellow. Colin will work as part of an ARC funded project involving coupled fire-atmosphere modelling of extreme bushfire dynamics.

University of Sunshine Coast

- Dr Robert McDougall has been appointed as Lecturer in Mathematics in the School of Science, Education and Engineering.

University of Sydney

- Anne Thomas left on 31 August to take up an appointment at the University of Glasgow.
- Brendan Creutz, John Enyang, Ivan Guo, Justin Koonin, and Takuya Matsumoto have completed their research positions.

University of WA

- Dr Neil Gillespie finished in his position as a Research Associate on 13 September 2013 and will be taking up a position at the University of Glasgow.
- In September, Joanna Fawcett started a two-year position as Research Associate, funded by an Australian Research Council Discovery Project grant awarded to John Bamberg, Alice Devillers, and Cheryl Praeger.

Conferences and Courses

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

ARC Centre of Excellence for Climate System Science Annual Workshop

Date: 10–13 November 2013
Venue: Cumberland Resort, Lorne, Victoria
Web: http://www.climatescience.org.au/2013-annual-workshop

DELTA 2013

Date: 24–29 November 2013
Venue: The Pavillion, Kiama, NSW
Web: www.delta2013.net

For more information, please see the conference website, or *Gazette* 40(1), p. 74.

Recent Developments of Nonlinear Partial Differential Equations

Date: 25–29 November 2013
Venue: Australian National University
Web: http://maths.anu.edu.au/events/recent-developments-nonlinear-pdes

For more information, please see the conference website, or *Gazette* 40(4), p. 285.

NSW–ACT 2013 ANZIAM meeting

Date: 27–28 November
Venue: University of Sydney
Web: http://www.maths.usyd.edu.au/u/olver/conferences/ANZIAM/

The plenary speakers are

- Nalini Joshi (The University of Sydney),
- Stephen Roberts (Australian National University),
- Ngamta Thamwattana (The University of Wollongong).

Contact the organiser (Sheehan Olver, sheehan.olver@gmail.com) or visit the website for further information.

2nd Annual Meeting of the Australian and New Zealand Association of Mathematical Physics (ANZAMP)

Date: November 27–29 2013
Venue: Mooloolaba on the Sunshine Coast
Web: http://www.anzamp.austms.org.au/meetings/current/abstract

We are delighted that the following Keynote Speakers will be attending:

- Peter Forrester (The University of Melbourne),
- Vladimir B. Matveev (Université de Bourgogne, France),
- John Roberts (The University of New South Wales),
- Robert Thompson (The University of Otago, New Zealand).

We now call for participating delegates to submit abstracts for their presentations. The online submission form is available at the website.

For anyone who has not yet registered and would still like to do so, please see www.maths.uq.edu.au/cmp/Workshops/ANZAMP2013/ANZAMP_2013.html for details. Delegates are encouraged to finalise bookings for their accommodation and travel as soon as possible.

ACWO2013: The 6th Australia-China Workshop on Optimization: Theory, Methods and Applications

Date: 28–30 November 2013
Venue: University of Ballarat
Web: http://www.ballarat.edu.au/schools/school-of-science-and-technology/research/conferences-and-workshops/the-6th-australia-china-workshop-on-optimization-theory,-methods-and-applications

For more information, please see the conference website, or *Gazette* 40(4), p. 286.

EMAC 2013: 16th Engineering Mathematics and Applications Conference

Date: 1–4 December 2013
Venue: Queensland University of Technology, Brisbane
Web: www.emac2013.com.au

Update: EMAC2013 will be held at the Science and Engineering Centre, QUT. We are very keen to make this a truly cross-disciplinary experience and want as many engineers to attend as possible. We would welcome staff and students who use mathematics in their engineering and scientific research to consider attending and presenting work at EMAC2013.

The conference features talks on any kind of mathematics/statistics applied in engineering, but we often see mathematics and statistics applied in biomedical engineering, electrical engineering, robotics, chemical engineering, computational fluid dynamics, environmental engineering, financial engineering, production planning, biology. Topics such as non-linear systems, operations research, optimisation, stochastic and statistical modelling, differential equations, dynamical systems, engineering mathematics education, and integer programming, quality control, regularly arise in EMAC talks and papers. As with other recent EMAC conferences, presenters will again be able to submit papers (following the conference conclusion) for refereeing and possible inclusion in the electronic supplement of the ANZIAM Journal.

The conference organising committee thank the following sponsors for their support:

- QUT Mathematical Sciences School,
- The Australian Mathematical Sciences Learning and Teaching Network (AMSLaTNet),
- Australian Scientific & Engineering Solutions (ASES),
- QUT Applied & Computational Mathematics Discipline,
- UQ Mathematics and Physics,
- Merlo Coffee.

For details, please see the conference website, or *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, please see the website, or *Gazette* 40(2), p. 149.

Complex Analysis and Differential Geometry

Date: 2–5 December 2013
Venue: University of New England, Armidale, NSW
Web: http://turing.une.edu.au/~ssii/

Registration is available at the website; further details may be found there, and also at *Gazette* 40(4), p. 287.

BioInfoSummer: AMSI Summer Symposium in Bioinformatics

Date: 2–6 December 2013
Venue: University of Adelaide
Web: http://www.maths.adelaide.edu.au/biosummer2013/

Further details may be found at the website, and also at *Gazette* 40(4), p. 287. Note the correction to the venue here.

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

Date: 9–13 December 2013
Venue: University of Western Australia
Web: http://37accmcc.wordpress.com
Contact: Director: Professor Gordon Royle (37accmcc at uwa.edu.au)

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

Mathematical Modelling and Numerical Solutions

Date: 9 or 16 December 2013
Venue: Wagga Wagga, NSW
Web: http://www.amsi.org.au/index.php/events-mainmenu/forthcoming-events/

This event will be advertised on the website soon.

Limits to Growth

Date: 11–12 December 2013
Venue: University of New South Wales
Web: http://mathsofplanetearth.org.au/events/limits-to-growth-beyond-the-point-of-inflexion/

The School of Mathematics and Statistics at UNSW is hosting a full-day symposium on Limits to Growth on 11 December 2013 at Parade Theatre, NIDA, Sydney. This will be followed by a Question and Answer session on the evening of

the 12 December 2013 at UNSW. The event is part of this year's Mathematics of Planet Earth. The focus of the event will be to address key questions: Is economic growth forever sustainable? What impact would a stagnant or declining population have on GDP? Can mathematical models guide policy makers in answering these questions? What is the strategic plan for planet Earth?

A little over forty years ago, an international team led by Donella Meadows, Dennis Meadows, Jørgen Randers, and William Behrens III carried out a major study of growth in five key areas: population, agricultural production, natural resources, industrial production, and pollution. The team concluded that, if current trends continued, limits to growth would be realised within one hundred years with a sudden and uncontrollable decline in population and industrial capacity. Many of the projections on resources and pollution proved to be incorrect, with technological advances reversing trends. However the central (mathematical) result, that continued exponential growth is not sustainable indefinitely, is indisputable, and we have now entered an era, beyond the point of inflexion, where the rate of population growth is slowing.

The Limits to Growth symposium on Wednesday 11 December will feature a range of prominent keynote speakers, including:

- Professor Graciela Chichilnisky, Professor of Economics, Columbia University, architect of the carbon credit emissions trading market underlying the Kyoto Protocol;
- Graeme Maxton, Economist, Fellow of the International Club of Rome, author of The End of Progress;
- Professor Jørgen Randers, Professor of Climate Strategy, BI Norwegian Business School, co-author of *Limits to Growth* and author of *2052*;
- Professor Peter Victor, Professor in Environmental Studies, York University, author of *Managing without Growth*;
- Ross Gittins AM, Economics Editor, *Sydney Morning Herald*;
- Professor Clive Hamilton AM FRSA, Professor of Public Ethics, Centre for Applied Philosophy and Public Ethics, author of *Growth Fetish*;
- Ken Henry AC, Economist, Former Secretary of the Department of Treasury;
- Brian Pink, The Australian Statistician, Head of the Australian Bureau of Statistics.

Several of the speakers will participate in a public panel discussion and Q&A event on Thursday 12 December in UNSW's Leighton Hall, facilitated by Ticky Fullerton (journalist for the ABC and presenter of The Business). Info and bookings: http://mpel2g.net/.

2014 AMSI Summer School

Date: 6 January to 31 January 2014
Venue: Mathematical Sciences Institute at the Australian National University
Web: http://maths.anu.edu.au/events/2014-amsi-summer-school-mathematical-sciences

Online registration is now open. The first round of registration closed on 2 November. Registrations will still be accepted, subject to availability of places and financial support. Registration closes on 30 November. Please try to register as early as possible.

We will be presenting the following courses:

- Finite element method;
- Statistical inference;
- Bioinformatics;
- Differential geometry;
- K theory;
- Introduction to conformal field theory and string theory for mathematicians;
- Hydrodynamic stabilitiy;
- High dimensinal data.

For more information, including detailed course descriptions, see the website.

Sydney Random Matrix Theory Workshop

Date: 13–16 January 2014
Venue: The University of Sydney
Web: http://www.maths.usyd.edu.au/u/olver/conferences/RMT.html

This workshop is on recent and future advances in the analysis, computation and application of random matrices. Random matrix theory is an active and vibrant field with exciting recent theoretical developments in universality, and deep connections with many different areas of mathematics: free probability, integrable systems, orthogonal polynomials and stochastic differential equations.

In the last few years, powerful computational tools have been developed, allowing for a deeper understanding of random matrices. Random matrices are also becoming increasingly important in applications, including statistics and wireless. The workshop will provide a valuable forum for interaction between the many subareas of random matrices.

The workshop aims to bring together experts on a huge variety of random matrc theory topics — computational methods, free probability, Riemann–Hilbert problems and applications.

Confirmed speakers include:

- Professor Pavel Bleher (IUPUI);
- Professor Dr Folkmar Bornemann (TU Munich);
- Dr Tom Claeys (UC Louvain);
- Associate Professor Ioana Dumitriu (U Washington);
- Professor Alan Edelman (MIT);
- Professor Alexander Its (IUPUI);
- Professor Arno Kuijlaars (KU Leuven);
- Professor Kenneth McLaughlin (University of Arizona);
- Professor Peter Miller (University of Michigan);

- Dr Tom Trogdon (NYU);
- Assist. Professor Raj Rao Nadakuditi (University of Michigan);
- Dr Nicholas Witte (University of Melbourne).

The workshop will be open to all, with student attendance strongly encouraged, and will provide a valuable opportunity for world-class researchers in random matrix theory to interact with Australian academics. It will also help to establish Australia as a major hub for research in this exciting field.

NZMRI Summer School on Operator Algebra

Venue: Te Anau, New Zealand
Date: 13–17 January 2014
Web: http://www.maths.otago.ac.nz/nzmri14/

The School will start with talks by Vaughan Jones (Vanderbilt University, Berkeley) and Aidan Sims (University of Wollongong) titled 'What is a von Neumann algebra' and 'What is a C*-algebra'. The main speakers will be Ruy Exel (Universidade Federal de Santa Catarina), Jesse Peterson (Vanderbilt University), Sorin Popa (University of California at Los Angeles) and Aidan Sims.

Please see the website for more information.

ANZAMP Symposium on probability in statistical mechanics

Date: Friday 17 January 2014
Venue: AMSI Access Grid Room, The University of Melbourne
Web: http://www.ms.unimelb.edu.au/~degier/index.php?page_ref_id=361

Program
• 10–11am: Rick Kenyon (Brown University), 'Limit shapes for random surfaces'
• 11:30am–12:30pm: Wendelin Werner (ETH Zurich), 'Phase transitions and conformal invariance within planar fractal carpets'

Participation is free. If you plan to attend please register by sending an email to jdgier@unimelb.edu.au. Note that this event will also be broadcast over AGR as part of the AMSI/ANZAMP National Seminar Series. Further details will follow.

From Random Walks to Lévy Processes conference

Date: 25–30 January 2014
Venue: Australian National University (Kioloa Coastal Campus)
Web: http://maths.anu.edu.au/events/kioloa-conference-random-walks-l%C3%A9vy-processes/

This five-day conference aims to provide a unique opportunity for Australian researchers, practitioners and students to hear, meet and mingle with some of the most prominent international and Australian researchers currently working in Lévy processes or closely related areas.

Lévy processes are stochastic processes on the Euclidean space, stochastically continuous and with stationary independent increments. They were introduced by

Paul Lévy in the 1930s as a generalisation of both Brownian motion and random walks, and vigorous theoretical development involving some of the most prominent mathematicians and probabilists to this day. Most recently, a need for modelling jumps, extremes and in general heavy-tailed behaviour of naturally occurring distributions has led to a redoubled effort in the theory, and extensive development of practical applications of Lévy processes.

Confirmed speakers include:

- Professor Jean Bertoin (University of Zurich, Switzerland);
- Professor Andreas Kyprianou (Bath, UK);
- Professor Ron Doney (Manchester, UK);
- Professor Philip Griffin (Syracuse, USA);
- Professor Alex Novikov (UTS, Sydney);
- Professor Fima Klebaner (Monash University, Melbourne);
- Dr Victor Rivero (CIMAT, Mexico).

KOZWaves: The first international Australasian conference on wave science

Date: 27–29 January 2014
Venue: Newcastle City Hall, NSW
Web: http://carma.newcastle.edu.au/meetings/kozwaves/

KOZWaves will be the first international Australasian conference on wave science. It will provide a forum for contemporary research on wave science to be disseminated between the different branches of wave theory and its applications.

It will promote interdisciplinary collaborations between Australasian wave scientists, and also with leading international researchers.

The overarching aim of KOZWaves is to accelerate research progress in the various application areas of wave science conducted in Australasia, by sharing recent research advances and exploiting the mathematical connection between the different types of wave phenomena.

KOZWaves will focus, in particular, on development of theoretical and numerical tools to analyse waves. This will result in more accurate predictions of wave behaviours, and understanding how to control the unique properties of waves for our benefit.

Confirmed speakers include:

- Professor Alex Babanin (Swinburne University of Technology, Australia);
- Professor Kenneth Golden (University of Utah, USA);
- Dr Paul Martin (Colorado School of Mines, USA);
- Professor Graeme Milton (University of Utah, USA);
- Professor Alexander Movchan (Liverpool University, UK);
- Dr Vincent Pagneux (University of Le Mans, France.);
- Dr Richard Porter (University of Bristol, UK);
- Dr Anne-Sophie Bonnet (ENSTAParistech, France);
- Professor Vernon Squire (University of Otago, New Zealand);
- Professor Peter Wadhams (University of Cambridge, UK).

Mathematics in Industry Study Group

Date: 28 January – 1 February 2014
Venue: Queensland University of Technology
Web: http://mathsinindustry.com/

Please see the website for more information.

Call for abstracts: Fluids in New Zealand 2014

Date: 29–31 January 2014
Venue: University of Auckland, New Zealand
Web: homepages.engineering.auckland.ac.nz/~jden259/FiNZ2014

For more information, please see the conference website, or *Gazette* 40(4), p. 288.

ANZIAM 2014

Date: 2–6 February 2014
Venue: Millennium Hotel, Rotorua, New Zealand
Web: http://anziam2014.auckland.ac.nz

Early-bird registration is available until 15 December 2013.

The annual conference of ANZIAM is an established gathering of applied mathematicians, scientists and engineers, which will be hosted by the New Zealand Branch in 2014. Rotorua's lakes, geothermal activity, forests and adventure activities make it an attractive location for a conference. Just a 2.5-hour drive from Auckland, and with its own airport, Rotorua is easily accessible.

Invited speakers:

- Alison Etheridge (Oxford): Modelling evolution of different genetic types in spatially structured populations;
- Lisa Fauci (Tulane): Modeling the bio-fluid dynamics of reproduction: successes and challenges;
- Douglas Heggie (Edinburgh): Mathematics, astronomy and physics — a three-body problem;
- Shane Henderson (Cornell): Real-time control of ambulance fleets through statistics, simulation and optimization;
- Shaun Hendy (Victoria University of Wellington, Tuck Medalist): Slippery issues in micro and nanoscale flows;
- Bernd Krauskopf (Auckland): Discovering the geometry of chaos;
- Geoff Mercer (ANU, Michell Medalist): Disease modelling and its impact on policy decisions;
- Terry O'Kane (CSIRO, Tuck Medalist): The statistical dynamics of geophysical flows with application to ensemble prediction and data assimilation.

Student attendance is supported through the CSIRO-ANZIAM student support scheme: http://www.anziam.org.au/The+CSIRO-ANZIAM+Student+Support+Scheme.

Early Career Workshop

Date: 7 February 2014
Venue: Rotorua, New Zealand
Web: http://www.math.canterbury.ac.nz/ANZIAM_ECW_2014/

ANZIAM and AustMS are organising a free workshop for early career academics to be held straight after the ANZIAM meeting in Rotorua on 7 February 2014. Please encourage your PhD students, postdocs and early career colleagues to come along. For details see the webpage.

Registration is through the usual ANZIAM conference registration process. Contact Roslyn Hickson (Roslyn.Hickson@newcastle.edu.au) if you would like more information.

ECW organising committee: Richard Brown, Roslyn Hickson and Alex James.

Geometric Invariance and Nonlinear Partial Differential Equations

Date: 9–14 February 2014
Venue: Coastal Campus of the ANU (Edith and Joy London Estate), Kioloa, NSW
Web: http://maths.anu.edu.au/events/geometric-invariance-and-nonlinear-partial-differential-equations

Under the sponsorship of ANU and AMSI, this conference is the second major event in the ANU Mathematical Sciences Institute 2013 Special Year on Nonlinear Partial Diferential Equations. The aim of the meeting is to bring together Australian and international researchers in geometric aspects of nonlinear PDE with particular emphasis on: geometric flows and their applications; affine, conformal,complex and convex geometric structures as well as problems arising from Lie group invariances.

All members of the Australian Mathematical Society are invited to participate. For further details together with accommodation and registration arrangements, see the webpage.

Big Day In for Vacation Scholars

Date: 11–12 February 2014
Venue: Law building, University of NSW
Web: http://www.amsi.org.au/index.php/events-mainmenu/forthcoming-events/165-events/science-events-2013/1078-amsi-vacation-research-scholarships-summer-2013-14

GAGTA8: Geometric and Asymptotic Group Theory with Applications

Date: 21–25 July 2014
Venue: Newcastle, Australia
Web: https://sites.google.com/site/gagta8/

This 2014 edition of the highly successful conference series, GAGTA (Geometric and Asymptotic Group Theory with Applications) will take place in Newcastle Australia.

GAGTA is a series of conferences organised periodically, since 2005, by researchers in Group Theory all over the world.

This five-day conference will bring together the world's leading researchers in geometric and asymptotic group theory. The program will include informal discussions, networking and collaboration, and opportunities for younger researchers to present their work.

GAGTA conferences are devoted to the study of a variety of areas in Geometric and Combinatorial Group Theory, including asymptotic and probabilistic methods, as well as algorithmic and computational topics involving groups.

In particular, areas of interest include group actions, isoperimetric functions, growth, asymptotic invariants, random walks, algebraic geometry over groups, algorithmic problems and their complexity, generic properties and generic complexity, and applications to non-commutative cryptography.

Speakers include:

- Kate Juschenko (Northwestern, USA);
- Olga Kharlampovich (Hunter College, USA);
- Alexei Miasnikov (Stevens Institute of Technology, USA);
- Sarah Rees (Newcastle Upon Tyne, UK).

Workshop in Harmonic Analysis and its Applications

Date: 21–25 July 2014
Venue: Macquarie University

This workshop will bring together leading international and Australian researchers as well as early-career researchers and PhD students, in Harmonic Analysis and related areas, for the dissemination of the most recent developments in the field, and for discussions on future directions.

The main themes of the workshop will include:

- Dyadic and multiparameter harmonic analysis;
- Analysis on manifolds;
- Function spaces;
- Singular integrals;
- Weighted inequalities;
- Applications of harmonic analysis and related topics such as wavelets.

Registration details and website to be released shortly.

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.

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

Dr Cathryn Birch; University of Leeds, UK; 5 November 2013 to 20 December 2013; deep tropical convection; MNU; Michael Reeder

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

Dr Pavel Chigansky; The Hebrew University, Israel; 1 October 2013 to 30 September 2014; probability, stochastic processes, nonlinear filtering, control and stability; MNU; Kais Hamza

Prof Arjeh Cohen; Eindhoven University of Technology; 1–13 November 2013; MAGMA; USN; John Cannon

Prof Robert Coquereaux; Centre de Physique Theorique; 4–17 November 2013; Pure; USN; Ruibin Zhang

Prof Jean Pierre Crouzeix; University Blaise Pascal, France; optimization; 3–23 February 2014; UBR; Julien Ugon

Prof Aris Daniilidis; University of Chile, Santiago; optimization; 28 November to 9 December 2013; UBR; Alex Kruger

A/Prof Oleg Lisovyi; Laboratoire de Mathematiqes et Physique Theorique; 13 November to 18 December 2013; Painleve theory; USN; Nalini Joshi

Prof Marco Lopez; University of Alicante; optimization; 30 October to 21 November 2013; UBR; Alex Kruger

Mr Fazli Rabbi; 31 January to 31 July 2014; stats; USN; Samuel Mueller

Sergey Semin ; Nizhny Novgorod State Technical University, Russia; 21 September 2013 to 10 July 2014; ocean wave dynamics in the coastal zone; USQ; Yury Stepanyants

Prof Hu Shao; China University of Mining and Technology; optimization; 15 November to 15 December 2013; UBR; Zhiyou Wu

Prof Meir Shillor; University of Oakland, USA; optimization; 6–26 January 2014; UBR; David Gao

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

Prof Michel Thera; University of Limoges, France; optimization; 11–20 November 2013; UBR; Alex Kruger

Mr Wei Wu; UNSW; 30 July 2012 to 30 June 2015; financial maths; USN; Ben Goldys

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

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