



News

General News

Women & Leadership Australia Grants

In 2016 Women & Leadership Australia is administering a national initiative to support the development of female leaders across all industry sectors. From 10 February 2016 the initiative will provide women in all industry sectors with grants for leadership development.

To ensure equitable distribution of the \$250,000 provisioned for the development of women employed in the All Industry sector, the National Scholarship Grant Committee has invited Australian Mathematical Society, Inc to share details of the initiative with its women members.

More specifically, grant applications are open to women employed in all sectors at two levels. The deadline for expressing your interest for this funding in your sector ends on 31 March.

1. Senior Management and Executive level Women Leaders can apply for \$12,000 Individual Grants to undertake the Advanced Leadership Program.
2. Women Managers can apply for \$5,000 Individual Grants to undertake the Accelerated Leadership Performance Program.

Should you wish to discuss the initiative in more detail please contact Ian Johnson at the office of the National Industry Scholarship Program, Australian School of Applied Management on 03 9270 9016 or via ijohnson@wla.edu.au.

Nalini Joshi: Women of the Year Finalist

Our congratulations to Professor Nalini Joshi, who has been selected as one of Daily Life's Women of the Year Finalists for 2015.

Daily Life's Women of the Year recognises and celebrates women who have taken a bold, public stand on the issues that matter most to Australian women. See <http://m.dailylife.com.au/dl-women-of-the-year-2015/DL-Finalists-2015.html> for more details.

SIAM Membership

As described at <http://www.austms.org.au/Reciprocal+membership>, the Society maintains reciprocity agreements with many mathematical societies. The most recent agreement, in 2011, was with SIAM, the worldwide Society for Industrial and Applied Mathematics.

AustMS membership qualifies you for a 30% discount when you join SIAM. If you live outside the United States, you can join SIAM as a reciprocal member and become part of its international and interdisciplinary community of educators,

practitioners, researchers, and students from more than 100 countries working in industry, laboratories, government, and academia.

SIAM membership offers discounts on SIAM conferences, journals, and books; subscriptions to SIAM News, SIAM Review, and SIAM Unwrapped; access to 21 different activity groups; and career advancement through the SIAM career website and job board.

Go to www.siam.org/joinsiam for full information or to join online as a reciprocal member.

University of New South Wales

UNSW has allocated a million dollars over 2016–2017 to start a Statistical Consulting Unit ('Stats Central'), charged with providing a consulting service for UNSW students and staff, developing a program of regular professional development workshops, statistical review of grants, and serving as an on-campus hub for consulting statisticians (currently fragmented in different units and campuses). We are currently in the process of hiring four full time equivalent staff to form the core of the unit. Its development will be overseen by David Warton (School of Mathematics and Statistics) and Andrew Hayen (School of Public Health and Community Medicine). The unit represents an exciting opportunity to improve the analytical capacity of researchers, and strengthen research links between statisticians and applied researchers.

Completed PhDs

Australian National University

- Dr Lance Gurney, *Elliptic curves with complex multiplication and lambda structures*, supervisor: James Borger.
- Dr Christopher Bourne, *Topological states of matter and noncommutative geometry*, supervisor: Alan Carey.

Federation University

- Dr Alia al Nuaimat, *Hyperbolic smoothing in nonsmooth optimization and applications*, principal supervisor: Adil Bagirov.
- Dr Ehsan Mohebi, *Nonsmooth optimization models and algorithms for data clustering and visualization*, principal supervisor: Adil Bagirov.
- Dr Jing Tian, *Global optimality conditions and optimization methods for polynomial programming problems and their applications*, principal supervisor: Zhiyou Wu.
- Dr Hieu Thao Nguyen, *About regularity properties in variational analysis and application in optimization*, principal supervisor: Alex Kruger.
- Dr Yi Chen, *Canonical duality theory for global optimization problems and applications*, principal supervisor: David Y. Gao.

- Dr Xiaojun Zhou, *Canonical dual algorithms for global optimization with applications*, principal supervisor: David Y. Gao.
- Dr Qiang Long, *Nonsmooth and derivative-free optimization based hybrid methods and their applications*, principal supervisor: Adil Bagirov.

Macquarie University

- Dr Rémy Tuyéras, *Sketches in higher category theory*, supervisors: Michael Batanin and Stephen Lack.
- Dr Matthew Burke, *Synthetic Lie theory*, supervisors: Richard Garner and Dominic Verity.

RMIT University

- Dr Reza Roozbahani, *Use of advanced operation research method for optimal water allocation modelling*, supervisors: Sergei Schreider and Babak Abbasi.
- Dr William Woodgate, *Accuracy and uncertainty in Leaf Area Index retrieval in Australian forested ecosystems*, supervisors: Simon Jones, Lola Suarez Barranco and Michael Hill.
- Dr Pritheega Magalingam, *Using complex network tools to enable an investigator to identify money laundering criminals' community in the Enron Email Dataset*, supervisors: Asha Rao and Stephen Davis .
- Dr Michelle Viney, *Prediction of in-play tennis*, supervisors: James Baglin and Anthony Bedford.

Swinburne University of Technology

- Dr Md Habibur Rahman, *Analysis of thermomagnetic convection in a vertical layer of magnetic fluid with arbitrary orientation of the magnetic field*, supervisors: Sergey Suslov and Tonghua Zhang.

University of Adelaide

- Dr Tyman Stanford, *Statistical analysis of proteomic mass spectrometry data for the identification of biomarkers and disease diagnosis*, supervisors: Patricia Solomon and Christopher Bagley.
- Dr Stephen Wade, *Very steep solitary waves in two-dimensional free surface flow*, supervisors: Ben Binder, Jim Denier and Trent Mattner.
- Dr Patrick Korbel, *Students' experiences of mathematics and how they affect further engagement with mathematics*, supervisors: Nicholas Buchdahl and Sivakumar Alagumalai.

University of Melbourne

- Dr Jeffrey Bailes, *Orbispaces, configurations and quasi-fibrations*, supervisors: Craig Westerland and Arun Ram.

University of South Australia

- Dr Karl Friedrich Mina, *Hedge portfolios for options on several assets under jump-diffusion processes*, supervisors: Gerald Cheang, John van der Hoek and Malgorzata Korolkiewicz.
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Awards and other achievements**Federation University**

- Alex Kruger has obtained a grant from the Jacques Hadamard Mathematics Foundation (FMJH), France, as part of an international team headed by Professor Michel Thera, University of Limoges, who is an Adjunct Professor of FedUni and a long time collaborator with Alex. The other participants are Dr Claudia Sagastizabal, National Institute for Pure and Applied Mathematics, Rio de Janeiro, Dr Rene Henrion, Weierstrass Institute for Applied Analysis and Stochastics, Berlin, Dr Wim van Ackooij, Electricite de France and Dr Wellington de Oliveira, Rio de Janeiro State University. The research over three years will focus on the unit commitment problem in energy management which aims to find the optimal productions schedule of a set of generation units while meeting various system-wide constraints.

Monash University

- Ron Steinfeld (Faculty of IT) was a joint winner of a Best Paper prize at ASIACRYPT 2015 (Auckland, 29 November to 3 December 2015). The paper is entitled ‘Improved security proofs in lattice-based cryptography: using the Rényi divergence rather than the statistical distance’ by Shi Bai, Adeline Langlois, Tancrede Lepoint, Damien Stehlé and Ron Steinfeld.

University of Adelaide

- Dr Luke Bennetts won the Christopher Heyde Medal from the Australian Academy of Science.
- Dr David Baraglia (Pure Mathematics) was awarded a DECRA in 2016.
- Dr Hang Wang (Pure Mathematics) was awarded a DECRA in 2016.

University of Melbourne

- Andrew Robinson was awarded one of the three inaugural awards for Excellence in Engagement by the University. The award was for Public Value and pertains to Andrew’s work in Biosecurity Risk Analysis.

University of New South Wales

- Thomas Britz received a Vice-Chancellor’s Award for Outstanding Contributions to Student Learning.
- Gary Froyland received a Vice-Chancellor’s Award for Teaching Excellence (Postgraduate Research Supervision).

- Chris Tisdell was awarded a UNSW 2015 Staff Excellence Award for Excellence in Diversity and Inclusion. This celebrates the valuable work that Chris has done in taking mathematics education to the masses through YouTube Videos and e-books.

University of South Australia

- Raymond Choo received the Best Research Paper Award, 20th European Symposium on Research in Computer Security held 21–25 September, Vienna, Austria.

University of Southern Queensland

- Dr Ravinesh Deo from School of Agricultural, Computational and Environmental Sciences has been awarded a competitive grant (\$19,245) under CAS Presidential International Fellowship for research with Cold and Arid Regions Environmental and Engineering Research Institute at Chinese Academy of Sciences. The project on ‘Evolutionary Frameworks for Feature Selection in Natural System’s Prediction Problems: A Blueprint for Drought, Flood, Heatwave and Energy Forecasting using Coral Reef Optimization and Extreme Learning Machines’ will develop computationally-efficient predictive models for climate risk and areas in computational mathematics and renewable energy.

University of the Sunshine Coast

- USC has graduated its first Honours student in abstract mathematics: Lauren Thornton, supervised by Dr Robert McDougall, with the title *On base radical and semisimple classes for associative rings*.

University of Sydney

- Nalini Joshi was named one of the 30 most influential people in Higher Education by The Australian in recognition of her unflinching commitment to gender equity and her part in the introduction of the SAGE program.
- Gus Lehrer has been awarded an AM in the Australia Day Honours list for significant service to tertiary mathematics education as an academic and researcher, and to professional and community groups.
- Andrew Papanicolau was awarded a DECRA for Solving non-Markov optimisation problems using forward-backward stochastic differential equations.
- Peter Kim and Kristen Hawkes were awarded a Discovery Grant for the project ‘Human longevity: Modelling social changes that propelled its evolution’. This plans to simulate behavioural and social changes that could have driven the evolution of human longevity past the end of female menopause, to develop a mathematical framework for modelling complex organisation in a population in terms of fundamental social units, and to qualitatively evaluate the relative importance of these social units in potentially driving human evolution from the ancestral state. Such models may enable us to compare two prominent and opposing hypotheses of the

evolution of human longevity: the Grandmother Hypothesis and the Hunting Hypothesis.

- Jean Yang was awarded a Career Development Fellowship by the NHMRC for Statistical bioinformatics for network based prognostic and precision therapy in complex disease
- Zhou Zhang was awarded a Future Fellowship for the project ‘Comprehensive Study of Kahler–Ricci Flows’. The project focuses on the complex version of Ricci flow, Kahler–Ricci flow, which it plans to explore in the closed and complete non-compact settings and the corresponding versions of Geometric Minimal Model Program; and the Kahler–Ricci flow in the Fano manifold setting and stability conditions.

University of Wollongong

- The 1993 book, *Statistics for Spatial Data*, rev. edn by Noel Cressie, was inducted into the Wiley Classics Library in 2015.
- Distinguished Professor Noel Cressie was awarded (with co-authors) the 2015 Wilcoxon Award for best practical applications paper appearing in the 2014 issues of *Technometrics*: Nguyen, H., Katzfuss, M., Cressie, N., and Braverman, A. (2014). Spatio-temporal data fusion for very large remote sensing datasets. *Technometrics*, 56, 174–185.
- A/Prof Michael McCrae has been awarded a Fellowship of the Certified Practising Accountants Society, to recognise ‘his role in the contribution of mathematical analysis to the area of inter-generational accounting’.

Appointments, departures and promotions

Australian National University

Staff departures:

- Mr Christopher Bourne
- Professor Bohui Chen
- Mr Jan Vysoky
- Dr Jun Zhang

Staff promotions:

- Both Bryan Wang and Scott Morrison have been promoted from Senior Lecturer to Associate Professor.

James Cook University

- Dr Shaun Belward has been promoted from level C to level D.
- Dr Yvette Everingham has been promoted from level C to level D.

La Trobe University

- Yuri Nikolayevsky has been promoted to level C (Senior Lecturer).

Monash University

- David Wood has been promoted to Professor.
- Tim Garoni has been promoted to Associate Professor.
- Todd Oliynyk has been promoted to Associate Professor.
- Heiko Dietrich has been promoted to Senior Lecturer.
- Tim Garoni was recently appointed to Chair of ANZAMP (therefore a Vice President of AustMS)

University of Adelaide

- Ray Vozzo appointed as Scholarly Teaching Fellow, commencing on 1 January 2016.

University of Melbourne

New staff:

- Dr Yao-ban Chan (Lecturer)
- Dr Duy Vu (Research Fellow)
- Paul Zinn-Justin, currently Directeur de recherche (CNRS) at LPTHE, (Universite Pierre et Marie Curie, Jussieu), has been awarded a Future Fellowship by the Australian Research Council, to be taken up in the School of Mathematics and Statistics.

Departed staff:

- Dr Andrea Bedini.

Promotions:

- Antoinette Tordesillas and Aihua Xia have been promoted to Professor effective 1 January 2016
- Deb King has been promoted to Associate Professor effective 1 January 2016.

University of New England

- Dr Timothy Schaerf appointed Lecturer in Applied Mathematics.

University of New South Wales

- Maike Massierer has just started a two-year post-doc with David Harvey, working mainly in computational number theory and mathematical cryptography. She was most recently a postdoctoral researcher at INRIA in Nancy, France.
- Davor Dragicevic joined the school as a Research Fellow to work with Gary Froyland (coming from the University of Rijeka).
- Justin Wishart left the School to take up a lectureship at Macquarie University.
- Professor Pierre Del Moral has left and will return to France, where he will take up a Research position.

University of South Australia

- Dr Amie Albrecht and Dr Robbie McKilliam have been promoted to Senior Lecturer.
- Dr Peter Pudney has been promoted to Associate Research Professor.
- Dr Hamid Laga has left the School of ITMS to take up an associate professor position at Murdoch University.

University of Sydney

- Oded Yacobi and Sasha Fish were promoted to Senior Lecturer.

University of Technology Sydney

- Professor Tony Dooley, previously at the University of Bath, has taken up the position of Head of School, Mathematical and Physical Sciences.

University of Wollongong*Departures:*

- Dr Wenting Chen and Dr David Robertson have left the university.

The following long-serving staff members have taken up honorary positions in the school:

- Professor Rod Nilsen
- Associate Professor Anne Porter
- Associate Professor Annette Worthy
- Dr Chandra Gulati

Appointments:

- Professor Alan Carey has been appointed part time as a Senior Professor.
- Dr Adam Sierakowski has been appointed as a Postdoctoral Fellow, working with Aidan Sims.
- Dr Valentina Wheeler has been appointed as a Research Fellow, working with James McCoy, Glen Wheeler and Ben Andrews (ANU).
- Dr Tran Vu Khahn has been awarded a DECRA fellowship of the Australian Research Council. The title of his project is ‘Partial differential equations in several complex variables’.

Promotions:

- Aidan Sims has been promoted to Senior Professor.
- Joanna Goard and Caz Sandison have been promoted to Associate Professor.
- Carole Birrell and Jiakun Liu have been promoted to Senior Lecturer.

Other news:

- Senior Professor Song-Ping Zhu has been reappointed Head of School for a period of two years.

New Books

University of Adelaide

Mazumdar, J. (in collaboration with S. Sircar, A. Saha and K. Wong) (2016). *Biofluid Mechanics*, 2nd edn. World Scientific.

The second edition of this book will look at important applications of biofluid mechanics from an engineering perspective, including the two new emerging interdisciplinary fields of tissue engineering, and cellular and molecular bioengineering.

Cohen, S.N. and Elliott, R.J. (2015). *Stochastic Calculus and Applications*, 2nd edn. Springer, New York. <http://www.springer.com/jp/book/9781493928668>

Completely revised and greatly expanded second edition.

Conferences and Courses

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

Capital Number Theory

Dates: 8–9 April 2016

Venue: The Australian National University

Web: <http://amsi.org.au/events/event/capital-number-theory-2/>

This conference, which has a heavy emphasis on student talks, will be an autumn meeting for the Australian number theory community. Building on the success of other conferences (Number Theory Down Under in September, and the Special Sessions at the AustMS in December), Capital Number Theory will bring together number theorists in Australia and two international experts: Roger Heath-Brown and Olivier Ramaré.

The focus of this conference is the intersection of number theory with computation. Often a problem can be attacked in (at least) two different ways using different methods: for example, analytic methods for ‘large’ cases and sophisticated computation for ‘small’ cases. This enables a wide class of mathematicians to contribute to the problem and often requires pushing theoretical arguments, and computations, to their limits.

Invited speakers:

- Richard Brent,* University of Newcastle
- Kirsty Chalker, Australian National University
- Amy Glen, Murdoch University
- David Harvey, UNSW
- Roger Heath-Brown, University of Oxford
- Morgan Hunter, Australian National University
- Shahrina Ismail, University of Queensland
- Judy-anne Osborne,* University of Newcastle
- Olivier Ramaré, Université Lille I

- Paul Vrbik, University of Newcastle
- Ole Warnaar, University of Queensland
- Wadim Zudilin, University of Newcastle

*To be confirmed

Organising committee:

- Tim Trudgian, ANU
- Mumtaz Hussain, Newcastle

NSF/CBMS Regional Research Conference on Discrete Painlevé Equations

Dates: 16–20 May 2016

Venue: The University of Texas Rio Grande Valley, Edinburg, Texas, USA

Web: <https://sites.google.com/site/nsfcbms2016utrgv/>

Principal speaker: Professor Nalini Joshi, University of Sydney.

Applications close on 20 March for travel support.

MATRIX: Higher structures in geometry and physics

Dates: 5–18 June 2016

Venue: University of Melbourne, Water Street, Creswick, Victoria

Web: <http://www.matrixatmelbourne.org.au/events/higher-structures-in-geometry-and-physics/>

Associated Workshop: Higher categories, higher operads and properads, 6–10 June 2016.

Registration deadline: 5 May 2016.

Organisers: Philip Hackney (Stockholm University, Sweden) and Marcy Robertson (University of Melbourne).

Probabilistic and Extremal Combinatorics Downunder

Dates: 13–17 June 2016

Venue: Monash University, Melbourne

Web: <http://users.monash.edu.au/~davidwo/Downunder/>

Keynote speakers:

- Noga Alon (Tel Aviv University, Israel)
- János Pach (EPFL Lausanne, Switzerland)

Confirmed invited speakers:

- Amin Coja-Oghlan (Goethe University, Germany)
- David Conlon (Oxford University, UK)
- Michael Drmota (Technische Universität Wien, Austria)
- Penny Haxel (University of Waterloo, Canada)
- Tomasz Łuczak (Adam Mickiewicz University, Poland)
- Mihyun Kang (Graz University of Technology, Austria)

- Alexandr Kostochka (University of Illinois at Urbana-Champaign, USA)
- Michael Krivelevich (Tel Aviv University, Israel)
- Dhruv Mubayi (University of Illinois at Chicago, USA)
- Sang-il Oum (KAIST, Korea)
- Prasad Tetali (Georgia Institute of Technology)
- Lutz Warnke (University of Cambridge, UK)
- Catherine Greenhill (University of New South Wales)
- Jim Fill (Johns Hopkins University)
- Colin McDiarmid (Oxford University)

Organisers:

- Jane Gao (Monash University)
- Brendan McKay (Australian National University)
- David Wood (Monash University)
- Nick Wormald (Monash University)

The workshop is supported by:

- School of Mathematical Sciences at Monash University
- Faculty of Science at Monash University
- Australian Mathematical Sciences Institute (AMSI)
- Australian Mathematical Society (AustMS)

Registration fees:

- \$300 for non-AustMS non-ANZIAM non-AMSI members
- \$200 for AustMS or ANZIAM or AMSI members
- \$150 for students, and AustMS or ANZIAM members that are retired or not in fulltime employment

MATRIX: Winter of disconnectedness

Dates: 27 June–8 July 2016

Venue: University of Melbourne, Creswick campus, Water Street, Creswick, Victoria

Web: <http://www.matrixatmelbourne.org.au/events/winter-of-disconnectedness/>

Associated event: Disconnected Groups, 27–30 June 2016.

Organisers:

- Pierre-Emmanuel Caprace (Université Catholique de Louvain, Belgium)
- Murray Elder (University of Newcastle)
- Jacqui Ramagge (University of Sydney)
- Colin Reid (University of Newcastle)
- Anne Thomas (University of Sydney)
- George Willis (University of Newcastle)

BAM 2016: 4th Biarri Applied Mathematics Conference

Dates: 28–29 June 2016

Venue: QUT, Brisbane

Web: <http://bamconf.com/>

The world is changing around us. Optimisation — which used to be hidden behind closed doors — is now at our fingertips shaping the way in which we live our lives, move our goods, and make our decisions. From healthcare, marketing, transport and manufacturing through to the deployment of next generation fibre networks, optimisation is core to working in the 21st century.

The Biarri Applied Mathematics Conference is a free two-day forum that provides insight into how organisations apply optimisation and mathematical techniques to solve problems in the real world.

The goal of the conference is to bring together researchers, practitioners, and students and facilitate discussion on new methods, tools and techniques that are applicable to real-world problems and deliver real-world results.

The theme this year is: Optimisation. For Real.

For BAM 2016 we invite presentations on the application of Operations Research, Statistics, Optimisation, Machine Learning and related fields across the domains of, but not limited to: Utilities, Energy and Communications networks, Healthcare, Algorithmic Finance, Transportation, Logistics, Bioinformatics.

Presentations should be no longer than 25 minutes, to be followed by at least 5 minutes of questions.

Sponsored by

- Biarri (<http://biarri.com/biarri-group/>)
- QUT (<https://www.qut.edu.au/>)
- AMSI (<http://amsi.org.au/>)

Conference registration open: 4 April 2016.

Organisers:

- Noon Silk (primary contact)
- Suzanne Hutchinson
- Ellie Foxcroft
- Andrew Grenfell
- Luke Josh

Further information can be found on the website, or by enquiring through bam@biarri.com.

Mathematics-in-Industry for New Zealand-Study Group: 2016

Dates: 4–8 July 2016

Venue: Victoria University of Wellington, Wellington, New Zealand

Web: <http://www/minz.org.nz>

The second annual workshop in this series will be co-chaired by Professor Emeritus Graeme Wake (Massey University, Auckland) and Professor Mark McGuinness (Victoria University of Wellington). It will be organised in partnership with KiwiNet, which is a consortium of Universities and Crown Research Institutes in New Zealand focused on transforming clever science into commercial value. All members, and especially students and teachers, are invited to attend, and there are no fees. It is expected there will be six industrial problem challenges to explore and there will be grants available on application to student participants from outside of the Wellington region. Interested persons are invited to visit the MINZ-website and to register their interest at admin@minz.org.nz.

Winter School on Health and Environmental Modelling

Dates: 4–15 July 2016

Venue: The University of Queensland

Web: <http://ws.amsi.org.au/>

Travel grants applications open 1 March.

Registration closing date is 19 June.

The 13th Australasian Conference on Mathematics and Computers in Sport

Dates: 11–13 July 2016

Venue: City Conference Centre of Victoria University, Flinders Street, Melbourne

Web: <http://www.anziam.org.au/The+13th+Australasian+Conference+on+Mathematics+and+Computers+in+Sport>

Change of Venue

We have quickly organized a team to move the lucky 13th meeting to Melbourne as we announced in February. Your organizing team is

- Ray Stefani (California State University, Long Beach, USA)
- Sam Robertson (Sports Performance Analytics, Victoria University and the Western Bulldogs)
- Stephanie Kovalchik (Tennis Australia and Victoria University)
- Denny Meyer (Swinburne)

The City Conference Center is on Flinders Street across from Flinders Station and diagonally across from Federation Square. That is a superb location for a sports conference (in addition to hotels, pubs and shopping) since the MCG and Melbourne Park are within easy walking distance. On 10 July, the day before we start, there is a footy match between Carlton and Adelaide at the MCG. We will try to find a way for you to buy tickets seated together.

Keynote Speakers

We have tentative plans for:

- Ken Quarrie (Sports Analyst and The All Blacks)
- Sam Robertson (Sports Performance Analytics, Victoria University and the Western Bulldogs)
- Third speaker to be announced

Mathsport Activity

After our first day of talks on 11 July, your conference fee will include a visit to the National Sports Museum at the MCG. That museum has the best coverage of sports that you will experience anywhere. It will seem that Shane Warne is there to reminisce on his career. You can try your hand (or foot) at shooting a netball goal, kicking for a soccer goal and experiencing a cricket crease.

Conference Dinner

Your fee will include a conference dinner on 12 July, planned as of now at the Chloe room of the Young and Jackson pub at Flinders and Swanston.

Conference Fees

We plan on the same fees (in AUD) as when we met in Melbourne in 2012. The fees below are good until 1 June, 2016. After that date add, \$50.

- ANZIAM Members: \$375
- Non-members: \$425
- Students: \$325

Pay your fees online at Trybooking.com using <http://www.trybooking.com/KRXH>.

Topics for the Conference

The conference will cover, but is not limited to, the following topics of interest to sports scientists, mathematicians, statisticians, coaches and athletes. The term ‘sport’ is interpreted liberally here and includes games and pastimes, gambling, and general fitness and health-related activities Analysis of rules, adjudication, and referee decision-making

- Application of gambling methodology
- Competitive strategy and methods for in-game strategy
- Computational analysis in sport
- Econometrics in sport
- Identification, analysis and mitigation of sports injuries
- Mathematical modeling in sport
- Optimal tournament design and scheduling
- Quantitative approaches to improve coaching and optimize individual performance
- Statistical and machine learning methods applied to motion capture and wearable technologies
- Statistics and statistical modeling in sport
- Teaching of mathematics and computers in sport
- The statistics of performance measurement

Proceedings

The template for your (maximum) six-page paper is available at the webpage. Please transmit your abstract by 1 May to Raystefani@aol.com. All papers will be reviewed. We plan to complete the Proceedings by 15 June.

MATRIX: Approximation and optimisation

Dates: 11–22 July 2016

Venue: University of Melbourne, Creswick campus

Web: <http://www.matrixatmelbourne.org.au/events/approximation-and-optimisation-3/>

Organisers:

- Aris Daniilidis (University of Chile)
- Andrew Eberhard (RMIT University)
- Alex Kruger (Federation University)
- Vera Roshchina (RMIT University)
- Nadezda Sukhorukova (Swinburne University)
- Julien Ugon (Federation University)

Associated event: Mathematical Optimisation Down Under (MODU2016).

Dates: 18–22 July 2016.

See details below.

Mathematical Optimisation Down Under (MODU2016)

Dates: 18–22 July 2016

Venue: Radisson Hotel, 380 William Street, Melbourne, Victoria

Web: <http://www.modu2016.org/>

The workshop is organised by RMIT and funded by AMSI, AustMS, CARMA, RMIT, MATRIX and Federation University Australia.

Main organisers are:

- Jonathan Borwein, University of Newcastle
- Regina Burachik, University of South Australia
- Andrew Eberhard, RMIT University
- Vera Roshchina, RMIT University (main contact)

Local Organisers:

- Rachel James, RMIT University
- Juliane Turner, University of Newcastle

Further details of the workshop details will be posted on the website.

Please direct all enquiries to: modu2016@rmit.edu.au.

The workshop will be held at the Radisson Hotel, opposite the Flagstaff Gardens (<http://www.radisson.com/melbourne-hotel-vi-3000/ausmelb>).

The workshop is designed to bring together researchers working in various areas of modern mathematical optimisation, to prompt an exchange of ideas between Australian and overseas researchers. The workshop is focussed on the modern aspects of optimisation that involve deep interplay between computational problems and pure mathematical questions.

Keynotes:

- Professor Heinz Bauschke, University of British Columbia
- Professor Jonathan Borwein, University of Newcastle
- Professor Patrick Combettes, Université Pierre et Marie Curie, Paris 6
- Professor Aris Daniilidis, University of Chile
- Professor Gabriele Eichfelder, TU Ilmenau
- Professor Jeya Jeyakumar, University of New South Wales
- Dr Guoyin Li, University of New South Wales
- Professor Jeff Linderoth, University of Wisconsin-Madison
- Professor Jie Sun, Curtin University

For registration and payment please follow this link:

<https://rmit.onestopsecure.com/OneStopWeb/Modu2016>.

Full conference fee: \$250

Reduced fee for AMSI/AustMS members: \$200

Student fee: \$100

Please note that domestic attendees from AMSI Member organisations have access to funding via the AMSI Travel Fund.

This workshop is embedded in the MATRIX research program ‘Approximation and optimisation’, with main activities taking place in Creswick, Victoria from 11 to 15 July 2016 (<http://www.matrixatmelbourne.org.au/events/approximation-and-optimisation-3/>). Please also let us know if you are planning to participate, so we keep you updated.

Ergodic Theory and its Applications

Dates: 18–22 July 2016

Venue: School of Mathematics and Statistics, The University of Sydney

Web: <http://www.maths.usyd.edu.au/ET2016/>

The aim of this focussed conference is to bring together Australians and distinguished overseas researchers having interests in Ergodic Theory and its applications to share ideas and to discuss current work. This conference will cover far ranging areas of Ergodic Theory and provide opportunities for both established and emerging Australian researchers to interact with top international experts in Ergodic Theory. The focus of this conference is to explore the interactions between Ergodic Theory and Number Theory, Ramsey Theory, Diophantine Approximation, Fractal Geometry and Random Walks.

The conference spans five days consisting of 16 talks each 1 hour long and few half-an-hour contributory talks. There will be sufficient time in-between the talks for questions and informal discussions. The confirmed speakers are (in alphabetical order)

- Faustin Adiceam (York)
- Michael Bjorklund (Gothenburg)
- Vitaly Bergelson (Columbus)
- Michael Cowling (Sydney)

- Anthony Dooley (Sydney)
- Murray Elder (Newcastle)
- Nikos Frantzikinakis (Hiraklion)
- Alexander Gorodnik (Bristol)
- Alina Ostafe (Sydney)
- James Parkinson (Sydney)
- Anke Pohl (Bonn)
- Jacqui Ramagge (Sydney)
- Lawrence Reeves (Melbourne)
- Riddhi Shah (New Delhi)
- David Simmons (York)
- George Willis (Newcastle)

There will be coffee/tea breaks between the talks and a light lunch will also be provided for all participants. There will also be a conference dinner, venue to be decided, on Wednesday (20 July).

Registration for this conference is AUD200 for regular participants and AUD100 for students. The registration link is on the conference website. Since it is an AMSI supported event, all Australian participants can apply for financial support from AMSI; follow the link <http://research.amsi.org.au/travel-funding/> for more information.

Please contact the organisers, Alexander Fish (alexander.fish@sydney.edu.au) or Mumtaz Hussain (mumtaz.hussain@newcastle.edu.au), if you have any questions.

MATRIX: Refining C*-algebraic invariants for dynamics using KK-theory

Dates: 18–29 July 2016

Venue: University of Melbourne, Creswick campus

Web: <http://www.matrixatmelbourne.org.au/events/refining-c-algebraic-invariants-for-dynamics-using-kk-theory/>

Associated event: KK Theory and Dynamics
25–29 July 2016

Organisers:

- Magnus Goffeng (U. Copenhagen, Denmark)
- Adam Rennie (University of Wollongong)
- Aidan Sims (University of Wollongong)

Geometry at ANU

Venue: The Australian National University

Dates: 15–26 August 2016

Web: <http://research.amsi.org.au/events/event/geometry-at-anu/>

This event will feature a graduate student winter school from 15–19 August with four eminent international lecturers followed by a large conference from 22–26 August with around 80 world experts in algebraic geometry and related fields.

Topological Matter, Strings, and K-theory

Dates: 5–9 September 2016

Venue: The University of Adelaide

Web: <http://research.amsi.org.au/events/event/topological-matter-strings-and-k-theory/>

There has been huge surge of interest in topological aspects of condensed matter physics in the last 10 years. More recently, it has started to transpire that the mathematics underlying this field has much in common with that used in and stimulated by string theory. This interdisciplinary confluence of ideas provides a rich source of new research directions, in both pure mathematics as well as mathematical physics, which this workshop aims to identify and develop. We specially target researchers with an interest in K-theory, noncommutative geometry, topology, and index theory, as well as their rigorous applications to string theory and topological matter in physics.

Animal, Vegetal, Mineral? Emergence and Function of Complex Shapes in Self-Assembly and Biological Cells

Dates: 18–23 September 2016

Venue: Cave House Hotel, Yallingup, Western Australia

Web: <http://research.amsi.org.au/events/event/animal-vegetal-mineral-emergence-and-function-of-complex-shapes-in-self-assembly-and-biological-cells/>

‘Animal Vegetal Mineral’ will be an interdisciplinary discussion meeting on structure and pattern formation in biological and synthetic systems. The particular focus will be on geometrically complex nanostructures, in particular those based on triply-periodic minimal surface geometries. While these geometries are found ubiquitously both in biological systems and synthetic self-assembly, it is becoming increasingly clear that fundamental differences in the formation mechanisms of the biotic and abiotic systems exist. These formation processes hinges on geometric concepts—from differential and hyperbolic geometry to computational and stochastic geometry, hence the importance of engaging the Australian Applied Maths community in this interdisciplinary event.

Topological Matter, Strings, K-theory and related areas

Dates: 26–30 September 2016

Venue: Adelaide

Web: <http://www.iga.adelaide.edu.au/workshops/WorkshopSep2016/>

This IGA/AMSI Workshop is on topological aspects of Condensed Matter physics, whose mathematics has much in common with that used in and stimulated by String Theory.

Featured speakers include:

- Ugo Bruzzo (SISSA, Trieste)
- Krzysztof Gawedzki (École normale supérieure de Lyon),

- Gian Michele Graf (ETH, Zurich)
- Motoko Kotani (Tohoku University, Sendai)

For further details, please take a look at the workshop webpage.

Mathematical Methods for Applications

Date: 11–14 November 2016

Venue: Hangzhou, China

Web: <http://www.anziam.org.au/ZPAMS>

The historic first ANZIAM conference in China, a joint meeting of ANZIAM and ZAPA, the Zhejiang Applied Mathematics Association, will forge collaboration between two associations of similar size. Whereas in many Chinese institutions, the disciplines of mathematics and computer science occupy a single unit, with research interests in areas such as machine learning, our applications tend to be more in biological and environmental science. However, methods of numerical analysis and approximation theory are common to the two disciplines. This will be used to build a bridge between the two areas, each expanding its range of interests.

Invited speakers include:

- Professor Ian Sloan, University of NSW
- Academician Professor Zongben Xu, X'ian Jiao Tong University
- Dr Alona Ben-Tal, Massey University
- Professor Jin Cheng, Fudan University

This region is a popular domestic tourist destination on the shore of the famous West Lake, and it contains many strong universities with students who are interested in our region. China is the nation of highest recent growth in higher education. This will be an opportunity for you to become acquainted with Zhejiang Province, along with your ANZIAM friends, in a well-organised scientific and cultural event.

The conference web page has further information, along with a link to the registration page.

International Conference on Nonlinear Partial Differential Equations

Dates: 21–25 November 2016

Venue: University of New England, School of Science and Technology

Web: <http://sydney.edu.au/science/math/su/PDESeminar/nlpde2016/>

Taking advantage of Professor Norm Dancer's 70th birthday, this conference will bring together leading international researchers on nonlinear partial differential equations, as well as Australian researchers, in particular junior researchers, to report and discuss recent developments, exchange ideas and foster/strengthen collaborations. The conference will focus on new developments in several themes of nonlinear partial differential equations, and their applications, especially those on which Prof Dancer has made significant contributions. They include nonlinear elliptic and parabolic equations, the calculus of variations, and applications in physics, biology and geometry.

BioInfoSummer 2016

Dates: 28 November to 2 December 2016

Venue: The University of Adelaide

More information to come.

Maths Fest Australia 2016

Dates: 28 November to 16 December 2016

Venue: Canberra

Incorporating

- Advances in Ergodic Theory, Hyperbolic Dynamics, and Statistical Laws
Dates: 28 November to 2 December 2016
- 60th Annual Meeting of the Australian Mathematical Society
Dates: 5–8 December 2016
Venue: The Australian National University
- Nonlinear and Geometric Partial Differential Equations
Dates: 9–13 December 2016

For further details, see AMSI director's report in this issue.

MATRIX: Interactions between topological recursion, modularity, quantum invariants and low-dimensional topology

Dates: 28 November to 23 December 2016

Venue: University of Melbourne, Water Street, Creswick, Victoria

Associated events:

- Quantum Invariants and Low-dimensional Topology
14–17 December 2016
- Topological Recursion and Modularity
19–23 December 2016
Web: <http://www.matrixatmelbourne.org.au/events/interactions-between-topological-recursion-modularity-quantum-invariants-and-low-dimensional-topology/>

This conference will give us a better understanding of the underlying geometry of the universe. This basic research will uncover integrable structure at the scale where string theory effects occur using moduli spaces which are fundamental to the 21st century understanding of mathematical physics.

Organisers:

- Motohico Mulase (University of California, Davis)
- Craig Hodgson (The University of Melbourne)
- Paul Norbury (The University of Melbourne)
- Norman Do (Monash University)
- Neil Hoffman (The University of Melbourne)

23rd Australian Statistical Conference 2016

Dates: 5–9 December 2016

Venue: Hotel Realm, Canberra

Website: www.asc2016.com.au

On behalf of the Statistical Society of Australia (SSAI), the Organising Committee invites you to attend the 23rd Australian Statistical Conference which is to be held in conjunction with the **Australasian Data Mining Conference (AusDM) and the 9th Australian Conference on Teaching Statistics (OZCOTS)**. This conference will provide unique insight into statistics, data mining and statistics teaching.

The major focus of the conference will be Big Data: Mining, Analysing and Teaching. It aims to bring together the statistical approaches to data analysis with the techniques of data mining and their use in teaching statistics. Application to Big Data will be of particular interest.

The SSAI Program of the conference will cover a wide range of classical and Bayesian methods in mathematical statistics, their application to environmental, social, biological and official statistics and international engagement. The programs for AusDM and OZCOTS can be found on their respective host pages and the program outline is on the Program Page.

Attending the ASC 2016 will give each delegate a unique opportunity to meet, discuss and learn with meet like-minded individuals.

On behalf of the Organising Committee we look forward to welcoming you to Canberra in 2016 and encourage you to attend this amazing occasion!

ANZAMP 5th annual meeting

Dates: 1–3 February 2017

Venue: University of NSW

Web: <http://www.anzamp.austms.org.au/events/>

More information to come.

ANZIAM 2017

Dates: 5–9 February 2017

Venue: Hahndorf Resort, South Australia

This conference is the premier annual meeting in Australia and New Zealand, where leading and young applied mathematicians gather to exchange ideas to promote and advance the application of mathematics to science, engineering and industry.

More information to come.

**Applied Probability at the Rock: An international workshop
in celebration of Phil Pollett's 60th birthday**

Dates: 17–21 April 2017
Venue: Ayers Rock Resort

More information to come.

AustMS 2017

Dates: 11–14 December 2017
Venue: Macquarie University

More information to come.

Vale**Peter Gavin Hall**

With immense sadness we report that Professor Peter Gavin Hall AO FAA FASSA FRS FAustMS CorrFRSE, Foreign Associate of the NAS, Australian Laureate Fellow and Director of ACEMS, passed away on 9 January 2016. Peter will always be remembered not only for his profound academic contributions, but also for his gentleness, kindness and generosity. He will be deeply missed by all who knew him.

An obituary appears in this issue.

Mirka Miller

It is with sadness that colleagues from the University of Newcastle announce the passing of Professor Mirka Miller on Saturday 2 January 2016 after a short illness. During her career, Mirka held positions at the Universities of New England, Newcastle and Ballarat and conjoint positions at King's College, London and University of West Bohemia, Pilsen. She is fondly remembered by her many colleagues and students in computer science and mathematics.

Josef 'Phil' Silberstein

With regret we inform members that Emeritus Professor Josef 'Phil' Silberstein died on 28 February 2016, aged 95, after a short illness. Professor Silberstein was one of the few remaining foundation members of the Society.

In his history of mathematics in Australia, *Counting Australia In*, Graeme Cohen records

Josef Philipp Otto (Phil) Silberstein was born in Vienna on 5 July 1920. His first substantive job in Australia, in 1939 after leaving Austria with his twin brother and having spent just nine months in London, was with the newly formed CSIR Division of Aeronautics as a junior laboratory assistant. At the same time, he studied engineering in the evenings at 'Melbourne Tech', now RMIT, but after two years transferred to the University for a BA with mathematics honours, still studying part-time.

The degree was completed in 1944. Silberstein took three years absence in the late 1940s to obtain a Cambridge PhD and, back at the ARL, attained the position of principal scientific officer in 1955. Five years later, Silberstein embarked on an academic career and in 1966 was appointed professor of mathematics in the University of Western Australia.

His son Richard, on behalf of Judith, Katherine and Rodney Silberstein comments that ‘He was a real contributor to life and enjoyment of all around him. He loved mathematics, music and life in general. He will be sorely missed.’

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.

Prof David Allen; Edith Cowan; 1 August 2015 to 31 July 2016; statistics; USN; Shelton Peiris

Mr Sigiswald Barbier; Ghent University; 17–25 March 2016; pure maths; USN; Kevin Coulembier

Dr Elizabeth Beazley; Haverford College, USA; 1 August 2015 to 31 January 2016; UMB; Arun Ram

A/Prof Michael Bjorklund; Chalmers University; 25 March 16 to 22 April 2016; pure maths; USN; Alexander Fish

A/Prof Yixiong Cao; University of Science and Technology of China; 1 November 2015 to 30 April 2016; UMB; Guoqi Qian

Dr Emma Carberry; University of Sydney; 23 November 2015 to 29 February 2016; UMB; Paul Norbury

A/Prof Eric Chesebro; University of Texas at Austin; 1 March 2016 to 28 May 2016; pure maths; USN; Stephan Tillmann

A/Prof Igor Cialenco; Illinois Institute of Technology; 6–20 March 2016; financial maths; USN; Marek Rutkowski

Mr Sayed Ahmadreza Raeisi Dehkordi; University of Isfahan, Iran; 16 January to 15 July 2016; optimisation; FDU; Adil Bagirov

Dr Wei Deng; Shanghai Maritime University, China; 15 December 2015 to 14 December 2016; optimisation; FDU; David Gao

Ms Soodabeh Asada Dezaki; Shahrekord University, Iran; 20 January to 20 July 2016; optimisation; FDU; Adil Bagirov

Prof Reimier Díaz Millán; Federal Institute of Goias, Goiania, Brazil; 1 January 2016 to 31 December 2016; optimization, variational inequality problem, inclusion problem, splitting methods; USA; Regina S. Burachik

Prof Alexandru Dimca; 28 March to 12 April 2016; pure; USN; Laurentiu Paunescu

Dr Anton Evseev; Shanghai Jiaotong University; 29 February to 18 March 2016; pure; USN; Andrew Mathas

Prof Jan Govaerts; Université catholique de Louvain; 20 January to 19 February 2016; category theory, quantum physics; MQU; Ross Street

- A/Prof Jianyu Han; Anhui University, PRC; 1 August 2015 to 31 July 2016; UMB; Dr Guoqi Qian
- Dr Cecile Hardouin; University of Paris at Nanterre; 25 January to 30 June 2016; spatial statistics; UOW; Noel Cressie
- Ms Tatiana Hessab; URFJ, Brazil; 1 March to 10 August 2016; UOM; David Balding
- Mr Cheng Hu; Shandong University; 20 November 2015 to 19 May 2016; statistics; Qiying Wang
- Dr Genggeng Huang; Shanghai Jiao Tong University; 10 October 2015 to 9 October 2016; ANU; Xu-Jia Wang
- Mr He Huang; Peking University; 1 September 2015 to 31 August 2016; UMB; Sanming Zhou
- Prof Masahiko Ito; Tokyo Denki University, Japan; 19–28 March 2016; UMB; Peter Forrester
- Dr Napsu Karmita; Turku University, Finland; 2 January to 24 December 2016; optimisation; FDU; Adil Bagirov
- Zhe Liu; Zhejiang University; 1 April 2015 to 31 March 2016; UWA; Cai Heng Li
- Prof Feng Luo; Rutgers University; 1–31 May 2016; pure; USN; Stephan Tillmann
- A/Prof Kelly McKinnie; University of Montana; 1 March to 28 May 2016; pure; USN; Stephan Tillmann
- A/Prof Martin Olsen; Aarhus University, Denmark; 1–6 May 2016; combinatorial optimisation; RMIT; Marc Demange
- Dr Jiangyan Peng; University of Electronic Science and Technology of China; 15 October 2015 to 14 October 2016; stats; USN; Qiying Wang
- Mr James Reoch; Adelaide; 3 August 2015 to 31 December 2017; applied; USN; Peter Sehoon Kim
- Prof Steve Rosenberg; Boston University; August 2015 to June 2016; differential geometry in finite and infinite dimensions, particularly with applications to/from mathematical physics; UAD; srmathbu@gmail.com
- Mr Landir Saviniec; University of Sao Paulo, Brazil; 1 November 2015 to 31 October 2016; UMB; Alysson Costa
- Prof Peter Scott; University of Michigan, USA; 15 January to 15 March 2016; UMB; Hyam Rubinstein
- A/Prof Ilya Shvartsman; Penn State Harrisburg; 5 January to 30 June 2016; optimal control theory, nonlinear and nonsmooth analysis; MQU; Vladimir Gaitsgory
- Miss Maria Simonsen; Aarhus University, Denmark; 1 February to 30 April 2016; UMB; David Balding
- A/Prof Kaibiao Sun; Dalian University of Technology, P.R. China; August 2015 to August 2016; biological system modeling, biological cybernetics, optimization theory; SUT; Tonghua Zhang
- Ms Ying-Ying Sun; Shanghai University; 9 September 2015 to 1 September 2016; applied; Nalini Joshi
- A/Prof Yuan Tian; Dalian University of Technology, P.R. China; August 2015 to August 2016; mathematical biology; SUT; Tonghua Zhang
- Dr Daniele Valeri; Yau Mathematical Sciences Center; 29 April to 29 May 2016; pure; USN; Alexander Molev

- Ms Jun Wang; University of Science and Technology of China; 1 October 2015 to 1 March 2017; ANU; Ben Andrews
- Mr Marcus Webb; Cambridge; 11 January to 9 April 2016; applied; USN; Sheehan Olver
- Dr Jeroen Wouters; 25 February 2015 to 24 February 2017; applied; USN; Georg Gottwald
- Mr Wei Wu; UNSW; 30 July 2012 to 31 May 2016; financial maths; USN; Ben Goldys
- Dr Ying Xu; Hefei University of Technology; 1 September 2015 to 31 August 2017; pure; USN; Ruibin Zhang
- Dr Dongyong Yang; University of Xiamen, Xiamen, China; July 2015 to June 2016; harmonic analysis; MQU; Xuan Duong
- A/Prof Hengyun Yang; Shanghai Maritime University; 16 January 2016 to 15 January 2017; pure; USN; Ruibin Zhang
- Dr Enki Yoo; State University of New York at Buffalo; 18 January to 30 June 2016; geographic information science; UOW; Noel Cressie
- Dr Junyong Zhang; Beijing Institute of Technology; 1 September 2015 to 31 August 2016; ANU; Andrew Hassell
- Mr Yang Zhang; Uni of Science and Technology, China; 1 October 2015 to 30 September 2017; pure; USN; Ruibin Zhang
- Prof Jiandong Zhao; Ludong University, China; 1 June to 30 November 2016; differential equations and mathematical biology; SUT; Tonghua Zhang
- Hui Zhou; Peking University, PRC; September 2015 to March 2017; UWA; Cheryl Praeger, Alice Devillers and Michael Giudici
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