

ANZIAM 2008

The 44th Applied Mathematics Conference

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The 2008 conference was held at the Carrington Hotel in Katoomba in the Blue Mountains, NSW, from Sunday 3 to Thursday 7 February. The Blue Mountains are a World Heritage listed area with many outstanding bushwalks, but access was limited because of the rain throughout most of the week. This meant that the Carrington Hotel was a welcome refuge from the weather, despite the presence of a few carefully placed buckets catching errant rainwater. Even the welcoming barbecue on Sunday evening had to be moved inside.

The conference was opened on Monday morning by Professor Peter Taylor from the University of Melbourne, the outgoing ANZIAM chair. A broad range of applications was represented over the week, including financial mathematics, fluid mechanics, industrial mathematics, mathematical biology, nonlinear dynamics, operations research and stochastic modelling, with many exciting and interesting problems discussed. There were 135 delegates and 107 contributed talks, 33 of which were presented by students. Talks were of 25 minutes duration and so four parallel sessions were required.

The strong state of current applied mathematics research was evident in the nine invited presentations given over the four days of the conference, all of which were outstanding:

- Dr Sanjeeva Balasuriya (Connecticut College) (J.H. Michell medallist, 2006), Movers and shakers in dynamical systems: enhancing and quantifying fluid flux
- Professor Sir Michael Berry (University of Bristol), Tsunami asymptotics
- Professor Matthew England (University of New South Wales), The ocean's role in climate variability and climate change
- Professor Ben Leimkuhler (University of Edinburgh), Averages from dynamics
- Professor Linda Petzold (University of California, Santa Barbara), Multiscale simulation of biochemical systems



Terry Tao just before
the start of his talk.

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- Professor Andrew Pullan (University of Auckland), Modelling activity of human muscles
- Professor Mick Roberts (Massey University), The evolution and transmission of a virus
- Dr Yvonne Stokes (University of Adelaide) (J.H. Michell medallist, 2007), A mathematical perspective on dripping honey
- Professor Terence Tao (University of California, Los Angeles), Compressed sensing.



Jim Hill,
the ANZIAM 2008 medallist.

Professor Linda Petzold is the 2008 AMSI Lecturer with her expenses at the conference supported by AMSI. Professor Sir Michael Berry was supported by COSNet and the ARC. In addition to his presentation at ANZIAM 2008, he gave a number of talks at the University of New South Wales and the University of Sydney prior to the conference. Additional sponsorship was provided by the University of Sydney. The support of all these organisations is gratefully acknowledged.

The traditional Tuesday afternoon break coincided with a slight improvement in the weather, so that many people were able to see the Three Sisters and in some cases descend down into the Jamison valley. (We believe that everyone returned.) The conference dinner on Wednesday evening was very well attended. There were several notable presentations and announcements.

Professor Jim Hill, from the University of Wollongong, was presented with the ANZIAM medal for 2008 by Professor Ernie Tuck. This is the premier ANZIAM award and the announcement was made to unanimous approval.

Dr Carlo Laing, from Massey University, was awarded the 2008 J.H. Michell medal for Outstanding New Researchers. The presentation was made by Professor Larry Forbes. This is the first time that the medal has been given to an applied mathematician from New Zealand. It was also announced that Dr Bill Summerfield would be standing down as Secretary of ANZIAM, a position he has held since 1984. Bill has been the driving force behind the ANZIAM conference for many years. His address, touching on some of the early history of ANZIAM, and its predecessor, the Division of Applied Mathematics of the Australian Mathematical Society, was met by a standing ovation.

Two further awards were made. The award for the best student talk at the conference, the Cherry Prize, was shared by Eleanor Button (University of Melbourne) who spoke on 'Dynamics of water bells formed on the underside of a horizontal plate', and Michael Haythorpe (University of South Australia) whose title was 'Interior-point and other algorithms for solving the Hamiltonian cycle problem based on controlled Markov chains'. Honourable mentions were given to Vivien

Challis (University of Queensland), Sharleen Harper (Massey University, winner in 2007), Lewis Mitchell (University of Wollongong), Anna Ougrinovskaia (University of Sydney) and Abbey Trewenack (University of Melbourne, her 3rd honourable mention!). The announcement was made by Professor Graeme Wake, the chair of the Cherry Prize committee. The other members were Steve Barry, Shaun Hendy, Frank de Hoog, Phil Howlett, Kerry Landman, Mark Nelson, Graeme Pettet, Paul Smith and Song-Ping Zhu. The Cherry Ripe prize, awarded by student vote every year since 1995, was given to Neville de Mestre who spoke on ‘45 years of Maths lecturing’. He thus becomes the only person to have won this award twice. Runners-up were Graeme Pettet and Peter Taylor. The student committee was organised by Georgina Bignell.

Finally I would like to take the opportunity to thank all those who made the conference possible. The invited speaker committee, chaired by Nalini Joshi, combined extremely well to bring an outstanding group of national and international speakers to the conference. The members of the local organising committee were a pleasure to work with: Dave Galloway (secretary), Mary Myerscough (treasurer) and Martin Wechselberger (timetable) at the University of Sydney and Bruce Henry and Peter Blennerhassett from the University of New South Wales did all the things from day to day and week to week that were needed to make the conference run smoothly and effectively. Students from Sydney University helped with all facets of organisation while the conference was on, particularly Robert Landsberger who kept the computers and overhead projectors running through thick and thin. And finally Bill Summerfield cajoled and checked, helped with detail and organisation, and generally just ‘knew what to do’.



Bill Summerfield describes some of the highlights of his 25-year term as ANZIAM Secretary.



Charlie Macaskill is an applied mathematician at the University of Sydney. His PhD was supervised by Professor Ernie Tuck at the University of Adelaide and was followed by postdoctoral work at the (then) Cranfield Institute of Technology and at the University of Cambridge. His current research interests are in geophysical fluid dynamics, particularly vortex dynamics, and in medical applications of acoustics in complex and random environments, typically using numerical or asymptotic methods.