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NEWSLETTER

OF THE

NEW ZEALAND MATHEMATICAL SOCIETY

Contents

PUBLISHER'S NOTICE

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The newsletter is available at: http://IFS.massey.ac.nz/mathnews/NZMSnews.shtml
Editorial enquiries and items for submission to this journal should be submitted as text or LaTeX files to mark.mcguinness@vuw.ac.nz.

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EDITORIAL

Welcome to the one hundredth edition of the NZMS Newsletter. There are highlights and lowlights, dominated by the calamitous news that the NZIMA has not had its funding renewed — more details are in the President's report below. Obituaries also feature more than usual. On the up-side, Gentle Reader, there is plenty happening locally (ironically, much of it funded by NZIMA programmes), lots of conferences are coming up, there is a fine centrefold on Mick Roberts, and Robert McLachlan (the previous Editor of this Newsletter) is honoured with the Dahlquist Prize.

Mark McGuinness
Editor

PRESIDENT'S COLUMN

It is with great regret that I have to mention, on this centenary edition of the newsletter, the great disaster which has recently befallen mathematics in New Zealand and which most of you are no doubt aware. I speak of course regarding the fact that the New Zealand Institute of Mathematics and its Applications (NZIMA) failed to get refunded in the latest Centres of Research Excellence funding round. I can assure you that Marston Conder and Vaughan Jones, together with others, made fantastic efforts of behalf of Mathematics in this country, and there is no doubt the CoRE rebid was first class (on this score it's worth reading http://www.nzima.org/CoRE-selection.html, and in particular the letter to Dr Cullen). The rebid built on the considerable national and international reputation the NZIMA made for itself over the previous years and the great work it had done up and down the country. Indeed the diversity of activities of the NZIMA is staggering, and the broad spectrum of mathematics has been supported at every institution in the country. However, as is often the case, in the end the selection of Centres of Research Excellence has become not so much about research and excellence but more about "connections with end users", "value propositions" and "relevance to New Zealand's economic/social/environmental priorities". The NZIMA (and I guess mathematics) was not seen to fit the mould - a mould which as far as I can see was never clearly enunciated by TEC. The tragedy of course is that over the last five years the NZIMA has supported nearly half of all the postdocs in mathematics in this country and a good number of the PhD students, using almost half of its CoRE grant in doing so. Thus the youngest and those in most need of support will be hit the hardest and the discipline will suffer as a consequence. I hope that something can be done to sustain, even at a reduced level, the good work of the NZIMA.

Some better news: Many of you will know that a few weeks ago our incoming president, Robert McLachlan, was awarded the Dahlquist Prize, at the SciCADE conference in Saint-Malo. This is awarded every second year in honour of Germund Dahlquist, who was a pioneer of numerical methods for differential equations. The citation for Robert's award was "For his outstanding contributions to geometric integration and composition methods, in particular. His work has found applications in many areas, especially to problems in physics" — congratulations, Robert!

Also, the 2008 visiting lecturer will be joint with the Forder Lecturer who is Peter Cameron (see http://www.maths.qmul.ac.uk/~pjc/) whose research interests are in permutation groups, and the (finite or infinite) structures on which they can act (which may be designs, graphs, codes, geometries, etc.). Peter is looking forward to his visit and it will be great to have him here. A list of potential lectures will be circulated once the timeframe around his visit is finalised.

In this Newsletter you should see an announcement for the new early career awards [*p.38 — Ed*]. This is an initiative to profile the many good young mathematical people in the country. The criteria are roughly the same as that used for the Marsden FastStart. It would be great to see as many applications as possible rolling in - I am sure there is a long backlog!

Finally the NZMS recently received a significant bequest from the estate of Gloria Olive, our gratitude for which I'd like to acknowledge here.

Gaven Martin
President

LOCAL NEWS

AGRESEARCH

We farewell Ken Louie, who recently embarked on a postgraduate diploma in sports and exercise science at the Waikato Institute of Technology. Ken began with AgResearch in 1992 and successfully developed mathematical models in a wide variety of research areas, including animal parasites, grass growth and disease transmission. We wish Ken all the best for the future.

Dr. Tilmann Glimm from the Department of Mathematics, Western Washington University visited the group in July. Tilmann's visit was funded by the Royal Society of New Zealand to work on a mathematical model of Dermal Papillae development in collaboration with Rajiv Chaturvedi & Nick Rufaut from AgResearch. Tilmann also presented a talk on mathematical frameworks for modeling interacting cell systems with applications to skeletal pattern formation in avian limb development.

Ken Louie attended the annual New Zealand Society of Animal Production conference held in Wanaka from 20-22 June 2007 to present a paper on a dynamic model incorporating dietary protein for predicting liveweight gain of parasitised grazing lambs. The conference was a day longer than expected due to a large snowfall in the region.

Paul Shorten

THE UNIVERSITY OF AUCKLAND

Since the previous Newsletter, Les Woods, John Kalman and Jennifer Lennon have died. And in April 2007 I learned that Frank Haight had died a year previously.

Obituary articles about them are printed separately in this Newsletter.

Department of Computer Science

Dr Jennifer Anne Lennon died on July 14. An obituary article is published in this Newsletter.

A $1.7 million endowment to the Department of Computer Science was formalized at a ceremony on April 4, 2007, where the Vice-Chancellor and the Bedogni family signed agreements to establish a fellowship and prize in perpetuity for Open Systems Research. The Bedogni family established this gift to commemorate their son Clinton Bedogni, who had recently been killed in a tragic traffic accident. Clinton had developed an intense interest and capability in the Linux system. This endowment provides for a Fellowship in open systems research as well as a biennial prize in open systems research, in perpetuity. Many in the Department had the opportunity to meet with the Bedogni family at our morning tea visit, and we expect them to visit the Department at least yearly as these two initiatives get established. Our plan is to advertise the Fellowship in 2007, and have the first Fellow in position towards the end of this year.

Dr Bruce Hutton has been a member of this Department since 1981, and he has been largely responsible for organizing courses. He retired from the University on July 15, and at his request there was no public farewell ceremony. However, many members of the Department took Bruce to dinner, and expressed to him their appreciation of his services to the Department.

Dr Kevin Novins has been a key member of our graphics group, and passionately concerned about the wellbeing and direction of the Department. But in view of his family circumstances in the USA, he has decided not to return to NZ. We will sorely miss his input and contributions. We are even cheated of the opportunity to properly farewell Kevin from our ranks, but we hope that Kevin will pass our way in the future, to allow for some farewell.

Abraham Alawi joined the Department on April 16 from Massey University, in the Unix/Linux systems administrator role.

The Department has agreed to host the OLPC project (One Laptop Per Child) in NZ, in some spare space in our lab area. There will be about 7 or 8 laptops as well as development PCs in that room. As an open source project we are providing access for up to 25 developers to that space, and we expect that some of the developers and projects that come from the OLPC initiative will involve our students.

The Accelerating Auckland initiative, to enhance the interest in ICT by students in the Auckland region (which groups all Tertiary Educational Organizations in the Auckland Region), has formed itself into an incorporated society. This will help them to bid as an independent entity for funding. Currently, they have a $1 million contract from TEC to take forward a large range of initiatives, targeting students from secondary school through to the universities. This includes the ICT Academy initiative, which is currently run from CSI. Our involvement with this initiative helps to bring the University (and our Department) to the notice of many more secondary school students than we are currently able to access.

PhD orals have been coming through at a rate of more than 1 per month. Congratulations to: Fajie Li, Jas Nagra, Diana Kirk and Jiang Liu for gaining their doctorates.

Radu Nicolescu hosted the NZ.NET User Group's Architecture camp 2007 at Tamaki, and he has gained a lot of favourable comment from those involved in the camp.

Andrew Luxton-Reilly is the proud father of Luca Luxton-Reilly.

Seminars

Mark Moir , "Hybrid transactional memory".

Marius Zimand , "Extractors via constructions of cryptographic pseudo-random generators".

Rick Thomas , "Finite automata and algebraic structures".

Mike Usmar , "It's an education project, not a laptop project". - Nicholas Negroponte.

Jiamou Liu , "On complexity of Ehrenfeucht-Fraisse games".

Henning Koehler , "Domination normal form - decomposing relational database schemas".

Montalban Antonio , "Well-quasi-orderings and computability theory".

Jasvir Nagra , "Is obfuscation really impossible?".

Jorn Christensen , "Monotonic heuristic evaluation function learning effect upon A* performance".

Sasha Rubin , "Automatic structures and injective presentations".

Fuad Tabba , "Introduction to transactional memory", and "NZTM: Nonblocking zero-indirection transactional memory".

Garry J. Tee

Department of Mathematics

Emeritus Professor John Arnold Kalman died on June 11. An obituary article appears elsewhere in this Newsletter.

Vaughan Jones was awarded the Prix Mondial Nessim Habif at a special ceremony at the 'Dies Academicus' of the University of Geneva on June 5, for his achievements in mathematics. That is an annual prize, awarded to researchers in all disciplines.

Colin Fox was farewelled on July 26. After 17 years in our Department, he has become an Associate Professor in the Department of Physics at the University of Otago.

Dr Steven Galbraith (at Royal Holloway University of London), has accepted an appointment with us, to fill the Algebra/Combinatorics vacancy created by Jozef Siran's departure. Steven's existing commitments mean that he will be with us for a period in the second Semester in 2008, but will not take up his appointment until mid-2009. In the meantime, we expect to make a temporary appointment.

Congratulations to the 5 staff who gained awards from the February University of Auckland Research Fund initial round, for departmental money from the Public Benefit Research Fund. Sina Greenwood, Vivian Kirk, Boris Pavlov, Arkadii Slinko and Mike Thomas each got $5000.

David Bryant has been awarded an Alexander von Humboldt research fellowship. He will be based in Dusseldorf, working with the noted molecular biologist Prof. William Martin.

John Butcher's granddaughter has written a very complimentary article about him, which was published in the College Herald (2007-7-31). John attended the SCADE Conference at St Malo in France, where the second Butcher Prize was awarded for the best paper by a student

Eamonn O'Brien has been awarded a MacLaurin Fellowship for 2008. That is further evidence (as if any were needed) that Eamonn has a distinguished reputation for his research.

Arkadii Slinko has been invited to present a paper at a conference on Computational Issues in Social Choice, to be held at Schloss Dagstuhl (Germany), in October.

Shayne Waldron was an invited speaker at the conference on "Multivariate Approximation: Theory and Applications", held at Cancun (Mexico) on April 26 - May 1, 2007.

Barbara Kensington-Miller and Judy Paterson have had their PhD theses approved (subject to the usual constraints).

Congratulations to Matthew Auger on winning a "Top Achiever" Doctoral Scholarship from the Tertiary Education Commission, for his PhD thesis on "Methods for proving that certain groups are infinite".

Recent visitors include: Prof. Karoline Amfasaga-Fuati (University of New England), Dr Markus Biegert (University of Ulm), Prof. Bill

Higginson (Queen's University Kingston, Ontario), Prof. Charles Leedham-Green (Queen Mary University of London), Dr Erick Matsen (Harvard/Canterbury), Dr Aisling McCluskey (National University of Ireland - Galway), Paul Meyer (National University of Samoa), Dr Helmut Podhaisky (University of Halle - Wittenberg), A-Prof. Marzita Puteh (University Pendidikan Sultan Idris), Dr Josef Silhan (Masaryk University, Prague).

Seminars

Prof. Nira Dyn (Tel-Aviv University), "Subdivision schemes for the refinement of geometric objects".

Dr J. Gwinner (Universitaet der Bundeswehr Munchen), "Variational inequalities, or how to treat inequality-constrained problems in operations research and mechanics".

Professor Mamoru Kaneko (University of Tsukuba), "Some paradoxes in game theory".

Dr Susan McKay (Queen Mary, University of London), "Presenting the Nottingham Group – a finite presentation?".

Dr Jeff Kline (Bond University, Australia) "Information protocols and extensive games in inductive game theory".

Matthew Auger , "Investigating finitely-presented groups using 'pictures' ".

Prof. Charles R. Leedham-Green (Queen Mary, University of London), "Newton's Principia" (public lecture at Auckland Museum).

Prof. Aziz Abdollahi (Shiraz University and Auckland University), "Self-commutators of automorphic composition operators on the Dirichlet spaces".

Prof. Wieslaw Zelazko (Polish Academy of Sciences), "Some properties of the space (s)", and "On hyperinvariant subspaces for linear maps".

Dr Mark Wilson (Department of Computer Science), "Polytope computations in social choice theory".

Prof. Wojciech Sulisz (Polish Academy of Sciences) "Prediction of nonlinear wave propagation and transformation in a wave train results of EU maxwave project".

Dr Rick Thomas (University of Leicester), "Groups and formal languages".

Doojin Hong (Seoul National University), "Eigenvalue generating technique for inter-twinors".

Dr Rod Gover , "Non-local operators on conformally Einstein manifolds", and "Conformal Laplacian operators and Q-curvature on Einstein manifolds".

Dr. Alastair McNaughton , "Using adjacency branches to optimize forest harvesting".

Dominic Searles , "Comparative probability orderings and the flip relation".

Prof. Rod Downey (VUW), "Ideals in computable commutative rings".

Tara Bonda , "Lie algebras of Cartan type in characteristic 2".

Prof. Marston Conder , "Short presentations for symmetric and classical groups".

Dr Arkadii Slinko , "Additive representability of finite measurement structures".

Prof. Estate Khmaladze (VUW), "New approach to differentiation of set-valued functions: connections with problems in probability theory and statistics".

A-Prof. Gordon Royle (Univ. of Western Australia), "Chromatic roots of graphs".

A-Prof. Peter Brooksbank (Bucknell University), "Computing with simple groups".

Dr John Bamberg (Ghent University), "Symmetric configurations in finite geometry".

Dr Steven Galbraith (Royal Holloway University of London), "Elliptic curves, pairings and secure communication".

Jan Moellers . "Pseudodifferential operators", and "The de Rham theorem".

Dr Paul-Andi Nagy , "Formal curvature tensors and Berger algebras", "Prolongations of Lie algebras and applications", and "Classification of Berger algebras".

Dr Maciej Dunajski (University of Cambridge), "Topology and dynamics of time-dependent Unitons".

Dr Bill Higginson (Queens University, Ontario), "Human Beings are Naturally Mathematical and other possibly provocative propositions".

Dr Josef Silhan (Masaryk University), "Commuting linear operators and decompositions".

Merilyn Taylor & Bronwen Cowie (Univ. of Waikato), "Maths in the frame: Children's views of mathematics in their environment".

Dr Markus Biegert (University of Ulm), "The Laplacian with non-linear generalized Robin boundary conditions on spaces of continuous functions".

Dr. Alexandre Morenko , "Mathematical model for the dynamics of subterranean constructions".

A-Prof. Mike Thomas , "Teacher use of computers in the mathematics classroom".

A-Prof. Simon Marshall (Princeton University), "On the perpetuation of stereotypes applied to New Zealand mathematicians".

Garry J. Tee

Department of Statistics

Ross Ihaka has been promoted to Associate Professor.

Dr Stephane Guindon, a bioinformatics specialist from CRNS in Montpellier, has been appointed as Lecturer.

Dr Ivan Kodanjanovic, an OR specialist from University of Nantes, has arrived here as Lecturer.

James Russell is one of the two winners of the Understanding Planet Earth category of the 2007 MacDiarmid Young Scientist of the Year awards. His study of colonization by rats has gained worldwide attention, and now he has appeared on TV One News, TV One Breakfast Programme, and the National Radio Nine to Noon programme.

Richard Umstaetter's recently examined PhD thesis has been awarded a University of Auckland Best Doctoral Thesis Award.

Seminars

Dr Wayne Stewart , "Local sensitivity analysis using differentiation".

Prof. Jim Berger (Duke University), "Objective Bayesian estimation".

Prof. Estate Khlamadze (VUW), "Goodness of fit problem for errors in non-parametric regression: a new approach".

Prof. Bill Reed (University of Victoria, BC), "Normal-Laplace distributions and their applications".

Prof. Jack Vowles (Political Studies), "Does globalization affect public perceptions of who in power can make a difference? Evidence from 37 countries, 1996-2005".

Prof. Jean-Claude Masse (Universite Laval, Canada), "Multivariate trimmed means based on in-depth functions".

Prof. Jeff J. Hunter (Massey University - Albany), "Coupling and mixing times in Markov chains".

Prof. Stephen Fienberg (Carnegie–Mellon University), "Bayesian mixed membership models for soft clustering".

Prof. Bruce Weir (University of Washington), "The Birthday Problem and DNA profiles".

Dr Linda Green (Columbia Business School), "Using stationary queuing models to set staffing levels in nonstationary service systems".

Dr Christian Roever , "Bayesian inference on gravitational waves - The maths, the computation, and examples".

Garry J. Tee

UNIVERSITY OF CANTERBURY

Department of Mathematics and Statistics

The New Zealand Statistical Association annual conference was held at Canterbury in July. It was followed by a two-day meeting in honour of Professor John Deely, former Chair of Statistics — for twenty-eight years — and Emeritus Professor of the university. John is now a member of the Department of Statistics at Purdue University in Indiana. Also held in Christchurch was the annual Evolution meeting, in June. This conference has become the main international event for researchers and students interested in evolution. It was organised by the Allan Wilson Centre — the first time it has ever been held outside North America. The meeting was a big success, with nearly 900 people attending. Two satellite workshops were held at the university's field station in Kaikoura.

In July we bade farewell to long-serving colleague Easaw Chacko. Easaw has been in charge of our departmental budget for a long time — probably for more years than he cares to remember! We wish

him all the best for his retirement. We also farewell postdoctoral fellow Erick Matsen, who has taken up another postdoctoral fellowship at UC Berkeley. We welcome new staff members Clemency Montelle and Raazesh (Raaz) Sainudiin. Clemency is a familiar face in the department, having taught here for a couple of years. Her research is on the history and philosophy of mathematics. Raaz, who did his PhD at Cornell, moved here from a postdoctoral position in Oxford; he works on the statistical inference of stochastic processes. Bhalchandra Thatte has also joined us as a postdoctoral fellow, supported by the Allan Wilson Centre.

Douglas Bridges has now returned from his three-month Erskine Fellowship leave in the US, Germany, Scotland, France, Italy, and Romania. He spoke at several universities and conferences during the trip, the highlight of the conferences being the "Cent Ans de l'Intuitionnisme" meeting in a XVIIth-century chateau in Normandy, celebrating the centenary of the publication of L.E.J. Brouwer's Amsterdam PhD thesis. While in Scotland, Douglas was admitted to the Royal Society of Edinburgh as a Corresponding Fellow.

In August Mike Steel and Charles Semple depart for a four-month programme in phylogenetics being held at the Isaac Newton Institute for Mathematical Sciences in Cambridge, UK. Five of their PhD students will also visit during some of the three week-long workshops. The programme brings together mathematicians and evolutionary biologists who spend anywhere from one week to four months working together. It is being organised by Professors Moulton (UEA), Huson (Tuebingen) and Steel. The biomathematics group also has a joint EPSRC-funded two-year postdoc with Jotun Hein's statistical genetics group at Oxford University. The postdoc will spend six months in New Zealand and the remainder at Oxford. Applications for the position are now being sought; the closing date is September 3rd.

Rick Beatson was overseas on study leave for ten weeks from mid-May. He spent a month at the GSF National Research Center for Environment and Health in Munich working with Dr Wolfgang zu Castell. Then it was on to Leicester and Strathclyde to work with Prof Jeremy Levesley and Dr Oleg Davydov. The outcome is some drafts on kernel-based methods for projective spaces and enhanced understanding of the weather patterns in Britain. Ben Martin spent two weeks at Oberwolfach in June as part of the Research in Pairs programme. He was doing research on algebraic groups with collaborators from the UK. PhD student Klaas Hartman has obtained funding from Google for a three-month project writing code for phylogenetic diversity analysis, as part of Google's "Summer of Code" initiative. Daniel Lond, another PhD student, attended the conference in Sydney and Canberra in honour of Prof Gus Lehrer's 60th birthday. Ronald Begg has been awarded his PhD.

Mike Plank provided this conference report and the accompanying photo:

Part of the organising committee Mike Plank, Britta Basse, David Wall and Jennifer Brown conducting further fieldwork on Mt Isobel.

"The NZIMA programme on modelling invasive species and weed impact held its main workshop at the Heritage Hotel in Hanmer Springs on 16-20 April. The workshop brought together mathematicians, statisticians and ecologists from across the country (plus a few from over the ditch), as well as invited speakers from the UK, the US and Canada. There was a total of 51 participants, including from UC Maths and Stats David Wall, Alex James, Jennifer Brown, Mike Plank, Britta Basse, Meghan Williams, Dawn Lemke and Scott Graybill. As well as university departments, there were representatives from Crown Research Institutes, the Department of Conservation, New Zealand Regional Councils and the US Environment Protection Agency.

"The week was a mixture of plenary talks and discussion groups, which were held in such diverse venues as the hotel bar, the hot springs, Conical Hill mountain bike tracks and Mt Isobel. The workshop also included a field trip, kindly led by Colin Meurk from Landcare Research, in which the mathematicians and statisticians were made to get their hands dirty and learn about factors affecting weed spread in New Zealand. In return, the ecologists were subjected to talks about Euler-Lotka equations, fractional calculus and resource probability functions. One speaker summarised what the two sides thought of each other, with mathematicians viewing the average ecologist as a 'tree-hugging drugged out hippie who spends days alone in the

middle of nowhere watching porcupines hibernate', whilst the typical mathematician was described as a 'sandal-wearing geek who doesn't get out much and is easily distracted from the real problem.' But the workshop was highly successful in helping to overcome barriers to collaboration between mathematicians, statisticians and ecologists and some exciting future research projects are expected to follow."

What is a weed? Field trip leader Colin Meurk answers dumb questions from the mathematicians, whilst the ecologists rustle around in the bushes.

Recent visitors include: Dr Vincent Berry (Montpellier II), Prof Willy Hereman (Colorado School of Mines), Dr Kamila Larripa (UC Davis), Prof Lyman MacDonald (Wyoming/Western Ecosystems Technology Inc.), Professor Jane McDougall (Colorado College), Professor Tony Olsen (US Environmental Protection Agency), Prof James Oxley (Louisiana State), Will Pyman (Wentworth College, UK), Tobias Thierer (Auckland), Prof Geoff Whittle (Victoria)

Seminars

Dr Carlo Laing (Massey University, Albany), "Dimension reduction in complex models"

Prof Hsiao-Fan Wang (National Tsing Hua University), "Data analysis of extreme cases: some extensions of classical theory"

Prof Lyman McDonald (Wyoming/Western Ecosystems Technology Inc.), "The past, present and future of resource selection functions"

Prof Lyman McDonald (Wyoming/Western Ecosystems Technology Inc.), "Corrections for radio-tracking detection bias in estimation of resource selection functions"

Ronald Begg (Canterbury), "Cell-population growth modelling and non-local differential equations"

Prof Jane McDougall (Colorado College), "Harmonic maps with finite Blaschke product dilatation"

Ben Martin

MASSEY UNIVERSITY

Institute of Fundamental Sciences (Palmerston North)

In late June Barbara Holland attended the Dumont D'Urville Workshop on Applied Evolutionary Bioinformatics. The meeting was held in Kaikoura and had about 30 participants with a large contingent from France. It was a great opportunity to hear the phylogenetics research that is going on in France, many exciting results were presented particularly in the area of supertrees. The meeting and a follow up meeting next year were jointly funded by the New Zealand Ministry of Research, Science and Technology and the French funding agency EGIDE. The second meeting will be held in Montpellier, France in June next year.

Igor and Sophie (joint with me) presented talks at Engineering Mathematics & Applications Conference (EMAC'07) which held 1-4 July at University of Tasmania, Hobart, Australia. Igor was supposed to catch the 6:00am flight to Melbourne but the airport was closed due to fog. Consequently he missed all the connections. However he managed to get a flight at 11:00 to Sydney and from there to Wellington where he arrived in the early hours of the morning. Just as well that Wellington did not have any sea fog at that time!

Charles writes: "Marcelo de Carvalho, of the Federal University of Mato Grosso do Sul, Campo Grande, Brazil, visited me for a month, from late in June until late in July. During these weeks we spent a productive time together working on two papers concerning join covered graphs. On the weekends my wife and I showed Marcelo and his wife some of the attractions in the southern part of the North Island. They seemed duly impressed."

Chris Tuffley had an essay "Popping Bubbles" published in the Notices of the AMS. It can be found online at http://www.ams.org/notices/200706/tx070600746p.pdf

Robert McLachlan has returned from a 4 month sabbatical at the Isaac Newton Institute, as a Visiting Fellow at their programme on "Highly Oscillatory Problems". He writes: "Many of you will

know what a delightful place to work the Newton Institute is. Everything is taken care of, everything is a short walk away, you are guaranteed interesting and diverse company at lunch, and from time to time a bell rings indicating that a seminar is imminent. What surprised me a bit on this visit, though, was the prosperous state of mathematics in general in the UK. Everywhere I went (Surrey, Imperial, Bath, and Edinburgh) departments were booming with big influxes of students (200+ mathematics majors per year at many places) and new staff arriving from all over the world. In addition, the mathematicians seem to have convinced the funding agencies of the distinctive nature of mathematics, and money is plentiful. There are 200 5-year fellowships for junior staff, and 200 for senior staff, across the sciences, per year. Unfortunately for those of us trying to copy their success, the reasons are not altogether clear. Some commented that the financial industry recommends a maths degree to school leavers, so that both employers and students have the idea that maths is a good thing. (And surely this connection is good for the UK in the long run.) Others said that there was a belief that maths was still seriously taught to a high standard, and had not been watered down like other subjects. The competitive entry system at university helps too.

In Edinburgh I co-organized a workshop on "Applying Geometric Integrators" at the International Centre for the Mathematical Sciences. This is housed in the childhood home of James Clerk Maxwell, a beautiful 18th century townhouse. Unfortunately the house is now considered to be too small and the ICMS will be moving out soon.

The weather was a bit rubbish, although I am still convinced that they don't know what proper rain is in Cambridge. There was one hot sunny day which we used to punt up the river to Grantchester. After that I went to SciCADE (Scientific Computation and Differential Equations) 2007 in St Malo. At first St Malo in July seemed a bit like Wellington in January, i.e. 12 degrees with a gale blowing in off the ocean, but it later improved enough to try swimming in the cold Atlantic. It is quite incredible how the field of geometric integration has grown. At least 50 of the 230 talks were on GI, even if many were not quite in the direction I have wanted to push the field. So I decided to give a survey talk on "Geometric Integration of ODEs and PDEs" in the hope of gaining at least one or two converts to my point of view. Just before this I was awarded the Germund Dahlquist Prize – not a moment too soon as it has a 45 year age limit – which came with a huge framed certificate that I carefully transported around France and then back to New Zealand."

Our congratulations to Robert for having been awarded the Dahlquist prize.

Robert's PhD students Philip Zhang, Brett Ryland, and Dion O'Neale also spoke at SciCADE 07, with Philip and Dion also attending part of the Newton Institute programme in Cambridge. Brett was under strict instructions not to leave the country until his thesis was submitted, which he managed with just hours to spare. He had several postdoc opportunities in Europe and he has now accepted one in Norway, jointly at NTNU Trondheim and the University of Bergen.

Dion reports: "I left the summer weather of Palmerston North in late March with fears that I would arrive in Cambridge to a chilly English spring. Fears that were ill-founded with temperatures in the low twenties the week I arrived. Most of my time in Europe was spent in Cambridge as a participant in the Isaac Newton Institute or INI programme "Highly Oscillatory Problems: Computation, Theory and Application". This six month programme attracted over a hundred participants with experts on all aspects of high oscillation.

The Isaac Newton Institute is amazing both as a building and as an institution: The building is arranged in such a way that, outside of your office, it is almost impossible not to be drawn into a discussion with someone else. Blackboards are everywhere to make sure that these opportunities aren't wasted, even in the elevator the toilets.

I arrived at the institute in time for the start of the first conference of the programme, "The Theory of Highly Oscillatory Problems". Three underlying themes of the conference seemed to be asymptotic expansions, dynamical systems and numerical integration, and homogenization. All the talks given at the INI are recorded, either in full video or with a sound recording matched to the slides from the talk. This makes an excellent resource, not just for people who were unable to attend a programme or a talk but also to refer back to afterwards. Several times I found myself going back to presentations I had seen earlier to check details.

I had expected a break in the seminars at the INI immediately after the conference but even during the "normal" time there were talks on most days, in addition to the many informal meetings and discussions. I was able to speak with Reinout Quispel (La Trobe), Brynjulf Owren (Trondheim) and Ernst Hairer (Geneva), amongst others, directly as a result of morning tea encounters.

My accommodation in Cambridge was on the far side of town, seven miles from the INI, a fact which initially worried me. However, cycling though the ancient stone buildings of the town and along the

cycle ways set amongst fields (with the occasional cow) never wore off during my stay, though I did have to buy a sprung bicycle seat to deal with the effects of the cobble stones.

In June I attended a satellite meeting of the INI programme, a two day meeting "Multi-resolution and High Oscillation for Evolutionary Problems: Blow-up and Hamiltonian Systems" at the University of Bath. I also presented a talk at the INI entitled "Reconsidering Trigonometric Integrators", this was some new work that developed during my time at the INI. Being able to discus this work directly with the authors of many of the papers I was using for it was particularly stimulating, not to mention, productive.

Straight after presenting my talk I travelled to Dundee, about an hour north of Edinburgh for the 22nd (and also the last) Dundee Biennial Conference on Numerical Analysis. This conference has been running almost as long as people have been using computers for mathematics and attracts a list of speakers amazing for its breadth and depth. Also amazing was the fact that some of the people at the conference had attended every conference since the first, 44 years earlier. In two years' time the conference will move to a new home in Glasgow but I still felt like I was witnessing the end an era.

The following week it was back to Cambridge for the closing conference of the Highly Oscillatory Problems programme and another week of talks before travelling, along with many of the other visitors at the INI, to St Malo on the French Atlantic coast for SciCADE07. People made awkward jokes about what would happen to the world if the plane full of mathematicians travelling between the two conferences was to crash. The attempted bombing of Glasgow airport two weeks earlier meant that the jokes lacked some of the enthusiasm they might have otherwise had.

The walled fortress/town of St Malo was the perfect location for SciCADE. A historic town with plenty of interesting things to see, but small enough that you could see them all between talks and not feel that you had missed out on too many things at the end of the week. The talks themselves were numerous and wide ranging. I felt at a slight advantage when it came to choosing which parallel sessions to listen to, since I had heard some of the speakers the previous week in Cambridge. The conference dinner included the now customary national singing contest, instigated by John Butcher. The New Zealand team were numerous but couldn't really compete with the solo performances of traditional Breton songs from one of the conference organisers, Erwan Faou from INRIA in Rennes. The following day I was rather surprised that people had sufficiently recovered from the 2am finish of the dinner to attend my talk first thing in the morning.

Philip Zhang, Brett Ryland, Willa & Robert McLachlan and Dion at the SciCADE07 conference dinner in St Malo.

My return to Palmerston North after SciCADE took two weeks but involved, amongst other things, a brief trip to Düsseldorf in Germany where I visited the maths department where I had studied three or so years ago."

Allan Wilson Centre news

The AWC was announced as one of the seven Centres of Research Excellence (CoREs) in the 2006/07 selection round. The AWC will receive a significant increase in its operational funding over the next 6 years (subject to mid-term review) providing the opportunity to increase the number of investigators supported.

Recently the AWC purchased an exciting new piece of equipment a Solexa High-Throughput Sequencer. It will arrive in August and is expected to be operational in October. This machine is one of the new wave of sequencing technologies to come on the market. In a single run it can read 100 million base pairs (bp). New generation high throughput sequencing provides challenges and opportunities for the mathematical, statistical and computing communities to manage the extraordinary increase in volume of sequence data to be analysed. Unlike traditional sequencing with a small number of longer reads, the Solexa reads are of short length, only about 35bp, so there will be new challenges in sequence assembly.

Once the sequences are assembled there will be further challenging computational and statistical problems in interpreting the data. Already we are seeing sequencing moving towards analysing whole communities, such as the bacteria in your intestines

or lungs, to not just find out what is there, but to look at the levels of the different organisms, and to compare the communities in healthy and unhealthy people.

The newest member of the AWC bioinformatician Patrick Biggs, formally of the Wellcome Trust Sanger Institute at Cambridge in the UK, has taken on the job of getting the most out of this new machine.

From September to December the Isaac Newton Institute for Mathematical Sciences in Cambridge will be hosting a workshop on Phylogenetics. Several members and associates of the AWC from Palmerston North, Auckland and Canterbury will be attending.

Seminars

Henning Koehler (Department of Information Systems, Massey University), "A simple method for hypergraph decomposion."

Professor Marcelo de Carvalho (Department of Computing and Statistics, Federal University of Mato Grosso do Sul, Brazil), "Join covered graphs and applications."

A/Prof Sven Hartmann (Department of Information Systems, Massey University), "Pan-Orientable-Designs."

Marijcke Vlieg-Hulstman

Institute of Information and Mathematical Sciences (Albany)

Mick Roberts participated in the NZIMA Workshop on weeds and invasive species that took place in Hanmer Springs, April 16-20, and gave the talk: "Why is a weed like a virus?". He then travelled overseas in May to visit Angela McLean's Group at the University of Oxford where he stayed for a week. His next stop was at Edinburgh where he presented the paper "R_0 for networks and other structured populations" in the DIMACS Workshop on Spatio-temporal and network modelling of diseases, at the International Centre for Mathematical Sciences. Before returning home, Mick visited Hans Heesterbeek's Group at Utrecht University.

Carlo Laing attended the SIAM Conference on Applications of Dynamical Systems in Snowbird, Utah, between May 28 and June 1 and gave two talks: "Dimension Reduction for Complex Neural Models" and "Uncertainty Quantification Methods in Modeling Heterogenous Interacting Populations".

Jeff Hunter delivered invited talks at both the 16th International Workshop in Matrices and Statistics at Windsor, Ontario, Canada (June 1 - 3) and the 35th Annual Meeting of the Statistical Society of Canada at St Johns, Newfoundland, Canada (June 10 - 13).

Paul Cowpertwait visited A/Prof Martin Lambert, Mr Michael Leonard and Dr Andrew Metcalfe at the University of Adelaide in June 2007 and gave a seminar entitled "Developments of fine-scale structure for point process models of rainfall". Paul is a partner investigator on a grant funded by Australian Research Council to study a large scale spatial modelling of rainfall across Australia.

Beatrix Jones attended the meeting of the Western North American Region of the International Biometric Society, June 24-27, University of California, Irvine. She gave an invited talk entitled "Using paths through graphical models to dissect pairwise relationships".

Alona Ben-Tal attended and presented a talk at the SIAM conference on Control & its Applications in San Francisco (June 29 July 1) and then visited Dr Jeffrey Smith at NIH, Bethesda, for a week.

Graeme Wake returned at the end of July from an extended period of travel. He has been visiting the Oxford Centre of Industrial and Applied Mathematics, UK, for 3 weeks as part of his Maclaurin Fellowship programme. He then travelled to the University of Limerick as a guest of MACSI - the all Ireland "Consortium for Mathematics-in-Industry". While there he spoke on the ANZIAM MISGs and gave a seminar on cell-growth modelling. Graeme also attended the International Congress for Industrial and Applied Mathematics in Zurich where he contributed to the mini-symposium on Industrial Mathematics Initiatives and gave a talk on functional differential equations. On his way back to NZ Graeme stopped at Fudan University, Shanghai, where he participated in a round-table workshop on Industrial Mathematics Initiatives. Fudan University is the host of the organising group for the very successful Chinese Mathematics in Industry Study Group. They warmly invite us to participate in their Study Group in China. The next workshop is on 22-26 October in Nanking. Local costs are likely to be covered.

Howard Edwards attended the GECCO 2007 conference in London July 7-11 and presented two papers. He then attended the 2007 Royal Statitsical Society 2007 meeting in York the following week.

Mick Roberts, Beatrix Jones and Danny Walsh gave talks at the Auckland Math Association teachers' workshop. Beatrix and Danny described

"What to do when the mean is meaningless" and Mick explained "How mathematics can save lives".

Congratulations

Claire Jordan and Marie Fitch received the IIMS Teaching Award for 2007. They both received a certificate from the Institute and $1000 each to acknowledge exceptional standards of lecturing and teaching achieved on an on-going basis.

Jeff Hunter has been awarded Professor Emeritus status in recognition of his outstanding contributions to the University.

Graeme Wake is a recipient of a Fulbright Travel Award under which he will travel to two Universities in Massachusetts in November. He is to speak at MIT and the University of Lowell.

Ronald Begg (currently a Research Fellow at IIMS, working with Graeme Wake under the Maclaurin Fellowship program) defended his PhD from the University of Canterbury successfully. The examiners unanimously recommended that he "be awarded the degree of Doctor of Philosophy and the thesis be placed on the Dean's list" (only theses of the highest quality are put on the Dean's list).

Weiwei Luo and Galdowite Senaratne (Sena) submitted their PhD theses (on the same day!!). Weiwei is based at the University of Alabama in Huntsville as a visiting student. The topic of her thesis is in the combustion area under Graeme Wake's supervision. Sena's thesis is in the topic of microwave imaging of breast tumours under the joint supervision of Graeme Wake and Winston Sweatman. Sena's project was funded by a TIF Fellowship of FRST.

Visitors

Prof Valerie Isham from the Department of Statistical Science at the University College London visited us for a week and worked with Mick Roberts and Paul Cowpertwait.

Seminars

Dr Leo Cheng , University of Auckland, "Construction of patient specific models for interpreting physiological function".

Dr Marc Jacobs , University of Auckland, "There and back again: My journey to Middle earth or Travels through the Physiome".

Assoc Prof Rui Jiang , University of Science and Technology of China, "Modeling vehicular traffic flow".

Dr Surattana Sungnul , King Mongkut's Institute of Technology North Bangkok, Thailand, "Numerical simulation of laminar flow over two rotating circular cylinders".

Professor Jeff Hunter , "Coupling and Mixing Times in Markov Chains".

Ms Joanne Mann , "Modelling Meningococcal and Hepatitis B Diseases".

Mr Ronald Begg , "Mathematical Problems in cell-growth modelling".

Professor Harry Gingold , West Virginia University, "The parabolic compactification and applications".

Dr. Nazim Kahn , University of Western Australia, "A General Algorithm for obtaining Standard Errors within the EM algorithm Framework".

Prof Valerie Isham , University College London, "Models for nonstationary spatial-temporal rainfall fields".

Prof Valerie Isham , University College London, "Space-Time Models for Soil Moisture Dynamics".

Alona Ben-Tal

UNIVERSITY OF OTAGO

Department of Mathematics and Statistics

The Department was pleased to appoint Professor Richard Barker to the Chair of Statistics on 1 May. Richard has been leading the Statistics group de facto since Bryan Manly left in 2000. His research interests are in the areas of Statistical theory, methods and analysis for wildlife research, Theory and analysis of mark-recapture and radio-telemetry data, and Design and analysis of wildlife monitoring programmes. Richard particularly enjoys working with his postgraduate students and training his group of young athletes.

Robert Aldred attended the 6th Slovenian International Conference on Graph Theory in Bled, Slovenia at the end of June. The meeting was very well attended and the high quality of talks and participants made for a stimulating and productive atmosphere - a very worthwhile meeting.

Matthew Schofield, Janine Wright, David Fletcher and John Harraway all presented papers at the NZSA Conference in Christchurch in July. Matthew Schofield shared the prize for best student

presentation for his talk: Climate Reconstruction. In his talk Matthew highlighted problems in existing methods used for modelling climate from proxies such as tree rings and outlined how this should be done properly.

On July 1-7, Derek Holton, Warren Palmer and Naomi Ingram attended the 30th annual conference of the Mathematics Education Research Group of Australasia (MERGA). This conference was held in Hobart, Tasmania and was well attended by New Zealand and Australian delegates. The theme of the conference was *Mathematics: Essential research, Essential practice*, an appropriate theme because of a joint day of presentations with the Australian Association of Mathematics Teachers. Warren gave a presentation on teaching geometry with CAS in a secondary school classroom, and Naomi gave a presentation on the affective development of a mathematics student. This conference proved excellent for making and renewing valuable research contacts in the supportive and friendly maths education community. The conference venue on the Derwent river was stunning, the Saturday market a shopper's delight, and you had to be there to see the dancing at the conference dinner.

Seminars

Prof Kambiz Farahmand (School of Computing and Mathematics, Faculty of Engineering, University of Ulster), "Random Polynomials"

Assoc Prof Richard Barker , "Statistical Science in the 21st Century"

Gery Closs (Department of Zoology), "Where do the come from? Where did they go? Trace element composition and brown trout migration"

William J Reed (University of Victoria Canada), "Normal-Laplace distributions and their applications"

Jeff Hunter (Massey University), "Markov chains mixing and coupling"

Assoc Prof David Fletcher , "Statistics and Mathematics"

Melanie Bell and Andrew Gray (Department of Preventive and Social Medicine), "Fractional Polynomials"

COMO presentations 4 talks

Te-Yuan Chyou , "Arachnophobia Conquered. The inside story of the spider, what makes it tick, or at least kick; with animations"

Hamish Brimble , " On the ball — Automated tracking of players in court games"

Yikun Wang , "Monte Carlo simulation for fractional reaction diffusion equation"

Brian Walters , "Stopping time problems"

Iain Dangerfield , "Simple Groups and Solvable Groups"

Hugo Norton , "Public Secrets: Cryptography and Number Theory"

Alex Young , "Numerics of Subordinated Flow"

Andrew Gormley (Department of Zoology and Mathematics and Statistics), "Bayesian Population Modelling of Hector's Dolphins: From assessment to prognosis"

Maryann Pirie , "Reconstructing past climates. The use of Kalman Filter and Smoother in estimating the climate influence in tree-rings"

Aaron Bryant , "Hidden Markov models in mark-recapture studies"

Lyman L McDonald (University of Canterbury Visiting Erskine Fellow and West Inc, USA), "The past, present and future of resource selection functions"

Lyman L McDonald (University of Canterbury Visiting Erskine Fellow and West Inc, USA), "Correction for radio tracking detection bias in estimation of resource selection functions"

Mik Black (Department of Biochemistry), "Integrated Genomics for Health and Disease"

Aidin Jalilzadeh , "Mathematical modeling of epidemics"

Richard Barker , "A Bayes New World? "

Paul Bonnington (The University of Auckland), "BeSTGRID: Broadband enabled Science and Technology GRID"

Susan Starking (London South Bank University and 2006 Schools Lecturer, Royal Statistical Society of Britain), "Can you see the wood for the trees? Surveys, sampling, estimation and approximation"

Lenette Grant

UNIVERSITY OF WAIKATO

DEPARTMENT OF MATHEMATICS

Rua Murray has accepted a position at the University of Canterbury. He will be leaving us in a few months time after having been a member of the

department since mid-1999. We wish him well for the future. A replacement for Rua is expected to be advertised soon. There is a possibility we may be advertising for two positions.

We congratulate Tissa Senanayake on completing the requirements of a PhD. His thesis title was "The influence of Hall currents, plasma viscosity and electron inertia on magnetic reconnection solutions". His chief supervisor was Ian Craig with Alfred Sneyd as second supervisor.

A number of members of the department have made overseas trips. Kevin Broughan attended the American Institute of Mathematics (AIM) workshop on "L-functions and modular forms" held in Palo Alto, California, from 30 July to 3 August. He received funding from AIM for travel and accommodation. Stephen Joe attended ICIAM07 in Zurich in mid-July. With there being over 2900 talks at ICIAM07 and typically over 60 parallel sessions at any one time, it was quite difficult at times to decide which session to attend.

Ian Hawthorn has now finished his period of study leave. During this leave, he visited the USA for about four weeks. Now currently on study leave are Tim Stokes and Ernie Kalnins. Tim is spending his leave in Australia, while Ernie will be at the University of Minnesota until early December. The University of Minnesota is only a few kilometres away from where the bridge collapsed in early August. While on leave, Ernie will also be making a side trip of about six weeks to Yerevan in Armenia.

We are pleased with our performance in the latest round of the PBRF in which we were able to retain our top ranking from the previous round.

Seminars

I. Shparlinski (Macquarie University), "Modular hyperbolas".

Stephen Joe

VICTORIA UNIVERSITY OF WELLINGTON

School of Mathematics, Statistics and Computer Science, *Te Kura Tatau*

Mathematics

Dr Noam Greenberg and Professor Rod Downey both received Marsden grants. Professor Downey received $500,000 over three years for his project "Computability, Complexity and Randomness". When one of the referees asked about an extension to the work, Rod responded positively but said this would take an extra year. The upshot was an offer from Marsden of a fourth year of funding should the project be progressing satisfactorily. Dr Greenberg received a fast start grant of $170,000 over two years for his project "Computability theory and its interactions with set theory".

Congratulations to PhD Student Celine Cattoen, who has been awarded a Hartle Prize from the International Society on General Relativity and Gravitation. These prizes were awarded to the best student presentations at the GR18 conference held in Sydney, Australia in July. Celine gave a 15 minute talk titled "New versions of the Hubble law" which is based on an article that will become part of her PhD project. Celine's PhD research is supervised by Dr. Matt Visser. The Hartle Award entitles Celine to three years' free membership to the International Society on General Relativity and Gravitation.

Students Deborah Crook, Tim Cox, and Jonathan Stephenson successfully competed this year in the Mathematical Contest in Modelling (MCM). The MCM is a unique annual international contest, in which University undergraduates try to solve real-world problems posted on the internet, in an intensive four-day team brainstorming session. The students received an "Honourable Mention" grade for their report on the best procedures for quickly boarding and deboarding airplanes of various sizes. This grade puts them in the top 40% of nearly 1000 competing teams. They were mentored by Dr. Mark McGuinness and Professor Matt Visser.

Statistics and Operations Research

Arrivals and departures are always big news and we have a few comings and goings to report since the last Newsletter. Colleen Kelly completed her two year term as the University's Consulting Statistician in March 2007. Colleen will be missed very much by all of us and by the many staff and graduate students around the University that she assisted over the last two years. Also, Colleen and her husband, Cliff, will be missed in the Wellington cycling scene, where they had become pretty well known. Colleen and Cliff have returned to southern California (near San Diego), where Colleen has now started work for a private firm, following several years spent in academia. We wish them both all the best. Our group is now looking forward to a new arrival: the next Consulting Statistician is due to start work at VUW later this year, so there'll be more on that in the next Newsletter.

Another departure this year was of Junko Murakami, who completed her postdoctoral position that was funded by the NZIMA programme on Hidden Markov Models, coordinated by David Vere-Jones. Junko is now in the US, but she wrote that her impression of New Zealand, after living here, is "something like a 'tiny giant'. Incredible in many aspects." She will miss NZ and the blue Wellington bay, and we will miss Junko too.

While not directly linked to the Stats and OR group, Sharleen Forbes joined VUW this year as Adjunct Professor in Official Statistics, in the School of Government. This is a half time position, shared with Statistics New Zealand. Sharleen is deservedly well known throughout the NZ statistical community, and her new professorial role is to promote official statistics: we wish her well with that. In fact she's got off to a pretty good start, since Sharleen is organising an Invited Paper Meeting and speaking in a contributed Paper Meeting at the 56th International Statistical Institute in Lisbon, Portugal at the end of August; both meetings focus on teaching/education and official statistics.

In news from our research students, Nuovella Williams completed her PhD ("Robust Methods for Analysing Quantitative Trait Loci"), supervised by Richard Arnold and Ross Renner. Nuovella is now working for the Office for National Statistics in the UK. Two of our Masters students also recently submitted their MSc theses: Jason O'Sullivan ("A Taxonomy of Seasonal Patterns") supervised by John Haywood, and Sarah Marshall ("Analysis of Reliability Data"), supervised by Stefanka Chukova. Jason is now working in London for dunnhumby, a Relevance Marketing company, while Sarah is heading off to the University of Edinburgh to start a PhD with full financial support. Clearly the UK is an attractive destination for our graduate students and we hope they all do well and enjoy themselves over there.

Sabbaticals are also prominent in the current news from VUW. Dong Wang returned from his travels at the end of April 2007, and restarted teaching immediately (welcome home Dong!). John Haywood continues to enjoy himself living in Santa Monica and visiting the UCLA Department of Statistics. John travelled to Europe in June 2007, where he presented a paper at the 3rd International Workshop on Correlated Data Modelling in Limerick, Ireland and also briefly visited Lancaster University, England, to help progress some work with Granville Tunnicliffe Wilson. In contrast to the extremely dry year that southern California (and John) is experiencing, it rained almost every day while John was in Europe. John now has a newfound appreciation for Colleen Kelly's somewhat negative view of Wellington's weather (Colleen is a SoCal native). In September John will present some research at the 2007 NBER/NSF Time Series Conference, which this year is to be held in Iowa City.

Richard Arnold began his sabbatical at Waseda University, Tokyo, visiting our former colleague Yu Hayakawa, who has been at Waseda since early 2004. Estate Khmaladze also started a sabbatical at the same time as Richard. Estate will travel quite widely, but initially he was based in Tbilisi, Georgia, where he reports it was very hot indeed. In Estate's absence, back at VUW Yuichi Hirose has taken over the organisation of the group's seminars. Yuichi also organises a separate stochastic process study group meeting each week.

Prof Michael Trick (Carnegie Mellon University), the 2007 ORSNZ Visiting Lecturer, visited the group (9-10 August) and gave two seminars: "Integer and Constraint Programming Approaches to Sports Scheduling" and "The Science of Better: Practical Operations Research". Mark Johnston reports that the first talk was a fascinating insight into the computationally extremely-difficult problem of scheduling Major League Baseball in the USA, while the second talk outlined how Operations Research lies at the heart of businesses such as Google, FedEx and Amazon.

Some bad news concerned the free half-day workshop that Ivy Liu had organised on "Bayesian Analysis of Case-Control Data: Studies of Gene-Environment Interaction", which was to be given at VUW in July 2007 by Bhramar Mukherjee, University of Michigan. More than 40 people had registered for the workshop but unfortunately it had to be cancelled, due to certain issues with New Zealand Immigration. The organisers extend their deepest apologies to all those affected. At the end of August Ivy presented a paper at the 56th International Statistical Institute in Lisbon, Portugal, as did Dong Wang.

Shirley Pledger had a week of research meetings in July at the Max Planck Institute for Demographic Research in Rostock, Germany, followed by an invited speaker slot at a conference on Recent Developments in Capture-Recapture Methods and their Applications, at the University of Reading, England. En route she visited Goettingen, where Walter Zucchini took her to see Gauss's grave. Shirley and the rest of us will see Walter Zucchini at VUW next year, since he will be the 2008 recipient of the Shayle Searle Visiting Fellowship in Statistics.

In addition, the following material was missed from the April issue due to an email error (apologies to the correspondent!):

John Haywood is enjoying his sabbatical time as a Visiting Scholar at the UCLA Department of Statistics, and also enjoying the winter weather in Santa Monica. One day recently, it rained; this prompted Helen (now aged 4) to say, "but it never rains here," on the way to preschool. She was correct that this winter has been quite a lot drier than normal: only 0.85 inches of rain at LAX so far this year (to Feb 22), compared to the average 5.33 inches. (The web is a wonderful source of data!)

Dong Wang was also on sabbatical and has been travelling widely since July 2006, including occasional returns to Wellington for brief periods. Dong returned from leave at the end of April 2007.

Shirley Pledger attended the EURING 2007 conference at Otago University in mid-January and seems to have had a great time. To quote Shirley, "the conference was a delight - thank you to the Otago organisers. You may wonder why a statistician attends a European Union for Ring Banding Conference, and why the conference is in New Zealand. It has lots of capture-recapture modelling, and the biologists and statisticians have copied the birds in not recognising European borders." Shirley's international leadership in capture-recapture methods has also been further recognised by an invitation to present at the Recent Developments in Capture-Recapture Methods and their Applications Conference in Reading UK in July. On the same trip she has also been invited to spend a week at the Max Planck Institute for Demographic Research in Rostock, Germany.

Estate Khmaladze has a new PhD student, Haizhen Wu, starting his research currently. Haizhen won a targeted PhD scholarship and joins Giorgi Kvizhinadze in Estate's group of PhDs; Giorgi commenced his research in August 2006. Estate was an invited speaker in early January at the International Indian Statistical Association 2007 Conference in Cochin, India. Estate has also been invited as a key note speaker to one of the programs being held later in 2007 to mark the Platinum Jubilee celebration (75 years) of the Indian Statistical Institute.

The Operations Research team were well represented at the ORSNZ 2006 Conference held at University of Canterbury (30 Nov-1 Dec). Stefanka Chukova and Mark Johnston, plus Honours students Sarah Marshall and Bronwyn Erasmuson all gave talks. Stefanka presented work done jointly with two current research students, Dinu Corbu and Jason OSullivan. We all enjoyed the three months that Stefanka's visitor, Dimitar Christozov (American University in Bulgaria), spent with us from August to October 2006. Stefanka and Dimitar gave a joint talk to the Wellington Statistics Group on 12 October, "Estimation of the mean cumulative function from automotive warranty data: a stratification approach".

Some very happy news to finish with is that Mark Johnston went overseas shortly after the ORSNZ conference and got married to Emily Densham on 13th Jan 2007 at Yatton village church (near Bristol, UK). Congratulations to Mark and Emily from all of us. While in the UK, Mark also visited research collaborators at the University of Essex (Colchester) and the University of the West of England (Bristol). Mark assures us, however, that he wasn't doing collaborative OR research while on his honeymoon, but he did try out scuba diving, and they enjoyed perfect weather.

Seminars

John Potter (University of New South Wales), "Incremental Lock Selection for Composite Objects"

Joseph S. Miller (University of Connecticut), "Weak lowness notions"

Willemijn Vermaat , "Continuing on questions to get an answer"

Mark Hannam (FSU Jena), "Black hole collisions, waves and recoil"

Mark Hannam (FSU Jena), "Numerically slicing a black hole the clever way: punctures, moving punctures, and cylinders"

Yuichi Hirose , "The fourth-root-n-consistency and the efficiency of profile likelihood"

Henning Koehler (Massey University), "A simple method for hypergraph decomposition"

Prof. Zbigniew Michalewicz (University of Adelaide), "Puzzle-based learning

Elisabeth Pearce , "Numbers and quantification in Unua"

Nick Longford (SNTL, Reading, England), "Allocation of limited resources and related problems in small-area statistics"

Prof. S. Ejaz Ahmed (University of Windsor, Canada), "Shrinkage and Lasso Estimation in Partially Linear Models"

Prof Michael Trick (Carnegie Mellon University), "Integer and Constraint Programming Approaches to Sports Scheduling"

Giovanna Corsi (University of Bologna), "Necessary For"

Dr. Jan Bulla , "Hidden Markov models, daily returns and asset allocation"

Lv Shaochuan , "MMPP with Its Application to Deep Earthquakes"

Dr. Oana-Silvia Serea (University Perpignan), "On Optimal Control problems and Hamilton Jacobi PDE"

Frieder Lempp , "Conflict modelling logic"

John Haywood

WELLINGTON STATISTICS GROUP

The Wellington Statistics Group (WSG), a local group of the New Zealand Statistical Association, continues to meet regularly. So far this year there have been WSG talks given by:

6 August: Nick Longford, SNTL, Reading, UK, "Allocation of limited resources and related problems in small-area statistics"

9 May: Shirley Pledger, Victoria University of Wellington,"Something for Nothing: Estimating age-related survival rates from capture-recapture data when age is unknown"

18 April: Stephen E. Fienberg, Carnegie Mellon University, USA, "When did Bayesian inference become "Bayesian"?"

22 March: Richard Arnold, Victoria University of Wellington, "Using earthquakes to measure stress in the earth's crust"

Abstracts and further details of past and known future WSG talks can be found on the NZSA Local Groups web page:

http://nzsa.rsnz.org/local_groups.shtml

That web page also contains contact details for the group and information on how to subscribe (subscription is free) or how to update email contact details.

WSG gratefully receives regular sponsorship from the Ministry of Social Development, Statistics New Zealand, Statistics Research Associates Ltd, and Victoria University of Wellington.

John Haywood

NZMS Travel Grant Reports

Philip Zhang

I left Palmerston North on the 6th June and arrived at The Isaac Newton Institute, Cambridge University, UK on 7th June for the INI programme "Highly Oscillatory Problems: Computation, Theory and Application". I got there just in time for the satellite conference "Multi-resolution and High Oscillation for Evolutionary Problems: Blow-up and Hamiltonian Systems" at the University of Bath at which I gave a joint talk "Blowup for generalized Euler equations" with my supervisor Robert McLachlan. Then I went back to Cambridge for the regular HOP programme where I was able to meet Zuazua (Spain), Ernst Hairer (Geneva) and many other people from all over the world. And I spent one month in enjoying the wonderful maths talks, the fantastic ancient stone buildings and scenery in Cambridge. Then I went to St Malo for Scicade07, THE conference in the field of numerical methods for differential equations, where I gave another talk "Dynamics for Euler equations on Virasoro groups". Many thanks to the NZMS, NZIMA and Massey IFSGRF who helped to fund this travel.

Sebastien Delaux

I would like to take the opportunity to thank the New Zealand Mathematical Society for the grant I was awarded to attend the 6th International Congress on Industrial and Applied Mathematics (ICIAM) hosted by the ETH Zurich and the University of Zurich (Switzerland) from the 16th to the 20th of July 2007. With more than 3000 participants from more than 100 countries, and more than 2900 presentations, ICIAM is one of the biggest conferences in the domain of mathematics. The size of ICIAM makes it possible to have a lot of different areas of applied mathematics research represented. As well, with so many participants, it was possible to organize many sessions dedicated to specific applied mathematics topics, the drawback being that there are more than 60 parallel sessions. Another great thing about ICIAM was that even with 2900 presentations, almost every speaker was allowed a full 30-minute time slot to present their work which leaves enough time to go into detail and present ideas, theory as well as results. The quality of the talks I attended was excellent.

My PhD topic is the study of the attachment or detachment of seaweed zygotes on a rocky substrate in turbulent conditions. I am working on the implementation on a finite-volume solid/fluid interaction model in the Gerris Flow Solver (http://gfs.sf.net) , which is a 3D quadtree/octree based Navier-Stokes solver. I presented my talk "Adaptive simulation of fluid-propagule interaction: application to the settlement of seaweed zygotes" in the "Fluid dynamics related to biology and geosciences" session. I addressed mainly the multi-scale nature of the problem, the Gerris Flow Solver and the finite-volume approach of solid/fluid interaction from a theoretical and numerical point of view. My talk went well with several questions on the code and some useful feedback.

My focus at the conference was the four sessions on "Interface methods and applications in multi-phase problems" organized by Dr Zhilin Li (Leveque & Li, 1994). Most of the presentations were about methods used to deal with membranes and moving boundaries problems. Some people were focusing on problems very similar to mine (A coupled IIM-BEM numerical method for the simulation of cell motion in single-cell traps, Boo Khoo, National University of Singapore). Among them, the Immersed Interface Method (IIM) and the Immersed Boundary Method (IBM) were definitely the most popular ones. Nobody is using a full Finite-Volume approach as used in Gerris which is more complex to implement but which has interesting properties in terms of mass and momentum conservation. I met people working on adaptive meshes with the IIM and having great results.

It was really valuable to meet with people interested in and working on solid/fluid interaction problem. Being exposed to so many different points of view and attending so many talks of fantastic quality was really helpful to provide a more global understanding of where the applied community is at in terms of fluid/solid interactions. As well, it was very helpful from a motivational point of view to be able to meet with the international applied mathematics community. For all that I am extremely grateful to the New Zealand Mathematical Society.

MICHAEL (MICK) G. ROBERTS

Mick Roberts, Professor in Mathematical Biology at Massey University's Albany campus, is an internationally-recognised expert on the mathematical modelling of infectious diseases. Using modern methods of mathematical analysis, he aspires to understand the epidemiology of infectious diseases and to develop models that explain why pathogens have evolved to have their present characteristics and how the human population can avoid epidemic outbreaks.

His collaborators in this work are various and, probably pleasantly for Mick (and for Lyndell, who is able to take advantage of her partner's peregrinations), are spread around the world. Oxford, Cambridge, Utrecht, Princeton, Nancy, Oberwolfach, Canberra, Wellington and Dunedin have all featured on his flightplans, and many still do. Mick has more than 100 "quality-assured" publications, including 63 refereed papers and more than 20 book chapters, with another 20 or so unpublished reports from his days with AgResearch.

Mick began his university study at the University of Bristol, with a BSc in Aeronautical Engineering. He went on to the Cranfield Institute of Technology, taking out an MSc in Applicable Mathematics, and then moved to NZ to complete the trifecta with a PhD from VUW, under the guidance of John Harper (on geophysical fluid mechanics and continental drift).

After about 20 years with AgResearch at Wallaceville, Dr Roberts joined Massey University in 2003 as an Associate Professor of Mathematics in the Institute of Information and Mathematical Sciences, on Massey's Albany campus. His teaching and research activity immediately impressed, and it was not long until he was promoted to Professor. Mick's enthusiasm and his approachable attitude have allowed him to attract postdoctoral fellows, and PhD and Masters students, to work with him and other colleagues on this seriously-useful application of mathematics to improve the human condition.

SARS reared its ugly head in 2002, and Mick was asked to help by the World Health Organisation. But this was not the first time. In 1996, as a researcher in the Wallaceville Animal Research Centre in Upper Hutt, Mick developed a model for the NZ Ministry of Health and successfully predicted the 1997 measles epidemic. A control policy that was initiated in response to the model was able to swiftly contain the epidemic. Predictions that epidemics would recur unless the timing of the second measles vaccination was changed from 11 years to 5 years old resulted in the re-timing of the vaccination schedule. Why do we not hear the trumpeting of this excellent success in the use of Mathematics?

Then in 2001 was the outbreak of Foot and Mouth Disease in the UK. Such words strike terror in the hearts of NZ farmers and livestock produce processors. Mick's measles model was held up in the UK as a case study of a successful use of modelling in such circumstances. BSE, sheep nematodes, Tb in possum populations, brucellosis in bison, hydatids in NZ and French dogs and sheep: all have been subjected to Mick's modelling and analysis and all these organisms have come out worse off. Better for us, no?

At least the funding agencies are able to discern quality. Mick has gained grants for the FRST PGSF for 1995–6, 1996–7 and 1999–2003. The MoH has come across with money for measles, pertussis (whooping cough), smallpox, SARS and influenza modelling in just about every year since 1996. Mick obtained grants from AgResearch (possum dynamics), the Animal Health Board (possums and ferrets), the Otago Regional Council (rabbits, what else?), Biosecurity Ltd (sheep measles) and MAF (risk analysis methodology).

His professional qualifications include CMath, FIMA Chartered Mathematician and Fellow of the Institute of Mathematics and its Applications (UK). He is a member of NZMS, ANZIAM and the European Society for Mathematical and Theoretical Biology.

Mick has served the NZMS particularly well. He has recently finished a stint as President 2004–5; he was VP for a 2003, and was again for 2006. Mick was a Council member 1994–2000 and Treasurer 1996–2000 and was the AgResearch Honorary Corrrespondent to the NZMS Newsletter for many years.

It is therefore appropriate that the latest recognition of Mick's research prowess has come from the Society, with the NZMS Research Award for 2006 being presented at the last NZ Mathematics Colloquium.

Just before that award was made, a Centre for Mathematical Biology was established at Albany, with Mick as Director. It has already attracted a number of postgraduate students and looks set to grow its activities (see http://iims.massey.ac.nz/research/CMB/).

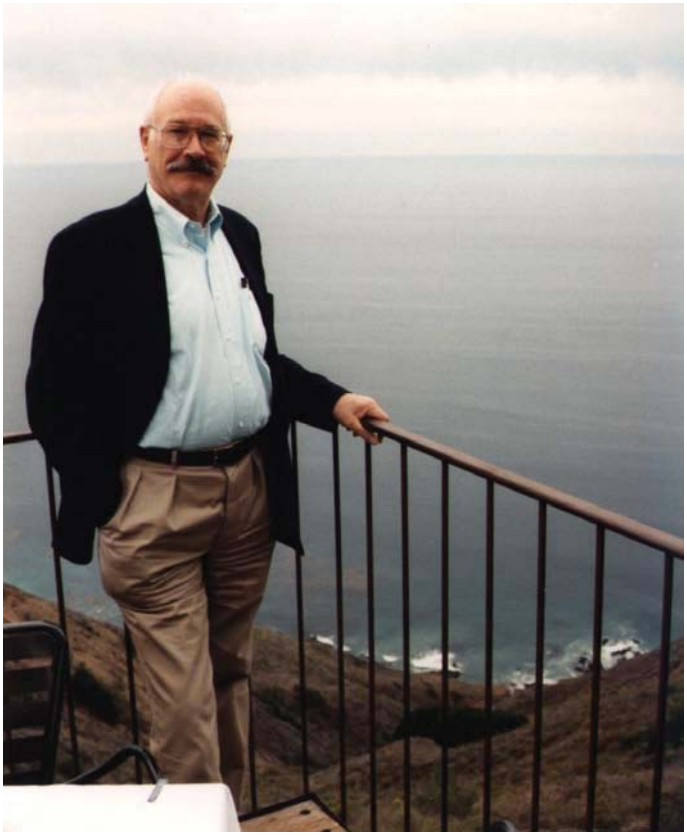
Those at Massey University will attest that they are pleased and honoured to have Mick on board. But the greater thing is that Mick is working away at what he does, to benefit us all.

Robert McKibbin

Massey University

Figure 1: Mick receives the NZ Mathematical Society Award for Mathematical Research at the Colloquium last year.

OBITUARIES



Frank Avery Haight

Frank Avery Haight was born in 1919 in Des Moines Iowa, and he studied from 1936 to 1940 at The State University of Iowa, where he graduated as BA and MSc in Mathematics [Golob & Haight]. The State University of Iowa was then a leader in agricultural statistics, and Frank attended lectures on statistics given there by Allen T. Craig [Roberts, p.251]. Later, Frank was knowledgeable about mediæval Russian history — could he have studied that at the State University of Iowa?

In 1941, Frank published his first mathematics paper 'On the independence of operators on a lattice', in the *Proceedings of the Iowa Academy of Science*. World War 2 then intervened, and when it ended in 1945 Frank was an historical researcher, in the USA army of occupation in Japan.

In about 1948, he chose to take his discharge from the army in New Zealand, where he worked as a truck driver. One day in 1949, while driving a truck through Parnell in Auckland, he decided that it was time to get back to mathematics. He parked the truck alongside a telephone box, and he telephoned the Professor of Mathematics at Auckland University College (then a branch of the University of New Zealand), and asked whether there might be any chance of becoming a lecturer in mathematics there.

Professor Henry George Forder (1889–1981) was a distinguished mathematician, renowned particularly as a geometer [Butcher]. He was very English in manner, quiet and reserved but witty. Nevertheless, Forder realized that this brash lanky Yank had much ability in mathematics and statistics, and Frank was appointed as Senior Lecturer in the Department of Mathematics. Also, his wife Ernestine became a Tutor in the Department of Physics.

Marin Segedin was appointed in 1949 as Lecturer in Mathematics [Nield]. He recalls that, soon after Frank was appointed, he told Marin that he had telephoned Professor Forder and reported that he had bought a house in Auckland. "Very good. Are you on the phone?". "??". "I say — *are* you on the phone?". "Well — I'm standing by it". "?!".

In 1950 I took Frank's Pure Mathematics 2 course. His lectures were not carefully organized but his exuberant manner, and his skill in providing clear responses to questions, made him an effective lecturer. One morning he came to the lecture theatre, looking somewhat bemused. After a few minutes, he explained to the class the problem which had been distracting him. A few days previously, he had received a telephone call from an Army officer, telling Frank that the Chief of Staff would like him to deliver a lecture to the highest officers in the NZ Army, about "American Military Strategy in the Pacific". "But I don't know what American military strategy in the Pacific is", he responded. "Fine!" said the officer. Frank thought that was the end of the matter — but a few minutes before our lecture started he had received a telephone call from an aide–de-camp of the Chief of Staff, telling him the date, time and place at which he was to address the Chief of Staff and his top officers!

Frank explained to us that he still did not know what American military strategy in the Pacific was; but since he was an American then he would expound his own strategy. He would talk briefly about outposts in Guam, and the strategic significance of Antarctica. But since he was addressing the top officers of the NZ Army, he would concentrate on those aspects of his strategy which related most directly to NZ.

Accordingly, he would explain to the officers that the most strategic spot for the defence of NZ is Gibraltar! Indeed, Gibraltar is antipodal to Whangarei; and hence if The Enemy occupied Gibraltar, then they could invade NZ from all directions at once!

I hope that Frank's script for that talk has been preserved amongst his papers.

The first long–playing records began to be sold in 1948. In 1953 Frank made a visit to his family in Iowa, where he bought an LP which had just been issued privately by a graduate student of mathematics at Harvard – Tom Lehrer. Frank smuggled that LP past NZ Customs and played it to some students here, who were delighted. Domestic tape recorders were starting to be available, and within a year pirated tapes (3rd or 4th generation), copied from that contraband LP, were being listened to by students at all branches of the University of New Zealand. Consequently, when Tom Lehrer made his first recital tour outside the USA (in about 1958), he started that tour in NZ, where he already had many fans (thanks to Frank Haight).

Since about 1930, many people had urged that the Maori language be taught at Auckland University College. In 1950 the conservative majority of academics reluctantly agreed to a Stage 1 course in Maori, but in 1952 they rejected a proposal for a Maori 2 course. Early in 1953, the historian Keith Sinclair attended a crucial Faculty meeting on that issue. He reported that "an American mathematician on the staff, Frank A. Haight, passed the word around that, according to his arithmetic, the liberals had a majority. They were contacted and attended Faculty; not one of them spoke, they listened to the conservatives, who were looking very pleased with the situation until the vote was taken and Maori 2 was overwhelmingly approved" [Sinclair, p.202].

Frank had intense interest in chess, and he played in the NZ Chess Championships in the 1950s [Roberts, p.251].

In 1951, Frank started a new course on Mathematical Statistics 1, which he taught at the level of Stage 3 or 4 papers [Nield]. He had kept his notes from Allen T. Craig's course at Iowa, and also Erich Lehmann's mimeographed notes on estimation and significance testing, and those provided the basis for his first lectures. Also in 1951, Frank began working on a Ph.D. thesis *An investigation of queue stability with reference to the traffic intensity*. At that time, there was nobody in NZ who could supervise a Ph.D. thesis in statistics. Pat Moran (at Australian National University) was the external examiner, and Hamish Thompson (in the Department of Scientific and Industrial Research, Applied Mathematics Division, Auckland branch) was the internal examiner.

Frank used to spend much of his summers in Wellington, so that he could consult *Biometrika* and other journals not kept in Auckland, at the library of DSIR Applied Mathematics Laboratory.

In 1957, Frank published his second paper on 'Queueing with balking', in *Biometrika*. Also in 1957, he received the only Ph.D. in Mathematics which was awarded by the University of New Zealand. Indeed, Frank's thesis was the first Ph.D. thesis with any statistical content which had been produced in NZ [Roberts, p.251].

At the end of 1957 Frank moved to UCLA [Nield], but he continued to visit NZ for another 30 years. In 1971, John Butcher edited a Festschrift for Henry George Forder, with tributes from many eminent mathematicians [Butcher]. Frank (then at the University of Pennsylvania) contributed a chapter 'On a generalization of Pythagoras's theorem', ending with "I wish to express my gratitude to H. G. Forder;

during our professional association between 1949 and 1957 he showed me that geometry is not yet exhausted" (pp.73–77).

Frank quickly became acknowledged as the leader in traffic statistics, and his pioneering book **Mathematical Theories of Traffic Flow** (1963) had great influence. At the 1966 International Congress of Mathematicians held at Moscow, I again met Frank. A Russian translation of that book had just been published, and Frank was happily spending the royalties on books and records. I asked him where had he gathered the data for the examples in that book. He told me that no such data existed when he wrote the book, and so he invented all data for those examples. But in direct response to his book, much data had since then been gathered on traffic statistics.

Frank joined the Institute of Transportation Studies at the University of California — Irvine. He created 3 major journals, which he edited vigorously for many years. In 1967 he founded *Transportation Research*, which fissioned into *Part A: Policy and Practice* and *Part B: Methodological*. He became intensely interested in traffic safety, and in 1969 he founded the journal *Accident Analysis and Prevention*. During the 1980s he commuted frequently between Irvine and Melbourne, on a major research collaboration on traffic injuries between UCI and Monash University.

Frank retired as Professor at UCI in 1998, and I have a copy of his lengthy list of publications up to 1998. He received the 2002 Distinguished Career Award from the American Public Health Association.

"After a stewardship of over 35 years, Frank recently handed over the reins of his three journals to a new generation of four editors, located in three countries. They have a tough act to follow. Frank always felt that, as an editor, he worked for the authors, not for the publisher nor for academic institutions that used peer review publications as evaluation criteria. He also went about his business as he did everything in his life, with great gusto and humor." [Golob & Haight].

Frank Avery Haight died on 2006 April 30, at the age of 86.

Two days later, his colleague Tom Golob announced that

The world is a less interesting place today.

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Garry J. Tee

Emeritus Professor John Arnold Kalman

John Kalman was born on 19 November 1928 and died on 11 June 2007. His death came after a long fight with the rare and debilitating neurological disease known as Olivo-ponto-cerebellar atrophy. While his brain continued to be active he found it almost impossible to speak and hard to move about.

After topping the Entrance Scholarships Examination list, John Kalman entered Auckland University College in 1946 and studied in the Arts and Law Faculties, gaining an MA degree with first class honours in Mathematics in 1951. He then proceeded to Harvard University where he completed his PhD in Mathematics in 1955 before returning to a senior research fellowship then a lecturership in 1957. After rapidly rising through the ranks, he was appointed to the newly established second chair in Mathematics in 1964. He was the sixth person to be appointed a professor of Mathematics at the University since the first appointment in 1883 but the first not to have a Cambridge degree; indeed none of the 12 professors

appointed since has a degree from Cambridge. On the departure in late 1965 of Professor Frederick Chong, Professor Kalman was appointed as Head of Department, a position he held for a little over a year. He continued as a professor until his retirement at the end of 1993, consolidating his reputation as a distinguished algebraist and meticulous teacher.

After stepping down as Head of Department, Professor Kalman devoted his life to many causes for the good of Mathematics.

- He gave excellent lectures. Electronic wizards might frown at his lecturing style in that he wrote all he said on the blackboard and we were free to copy it all down, provided that we could keep up with his rapid, but very neat, handwriting. I still have my lecture notes from a Stage III Analysis course he taught in 1962. I remember wondering what subject I was enrolled in when he explained to us the difference between declarative, interrogative and imperative sentences, but his story unfolded clearly as his lecture course continued. I remember, too, being impressed when he returned marked assignments in class: the first time he returned them he walked around the class asking us our names, but the second time he just walked around the class returning our assignments without asking us our names. There were about 80 students in the class.
- He was instrumental in founding the *Mathematical Chronicle*, published in the Department and used to expose New Zealand Mathematics to the world. He had a further serious motive: the *Mathematical Chronicle* became an instrument of exchange which greatly enriched our Library. Since 1992 the *Chronicle* has been superseded by the *New Zealand Journal of Mathematics*, a joint publication of the NZMS and the Auckland Department of Mathematics.
- Somewhat controversially for these days, he advised promising students where they might go overseas to study for a PhD degree. The advice benefitted the Department hugely as these students came back half a decade later and helped give the Department the strength it has today.

Many members of the Department remember with gratitude his welcoming of them to Auckland both in the Department and to his home, as well as his nurturing of young staff.

During all of this he gave sage advice to these young staff, not least me when I took my turn as Head of Department. He also maintained a strong research programme, with publications in prestigious journals published by the American and London Mathematical Societies as well as other top journals. He crowned his research career by the publication seven years after his retirement of his 536 page book *Automated reasoning with OTTER*, Rinton Press, Princeton, which gained very favourable reviews.

John Kalman married late in life. While the marriage was a happy one, sadly his wife Margaret died suddenly in 1999, and that was a severe blow for John.

Another tribute to Professor Kalman will be found in John Butcher's Centrefold article in the *NZMS Newsletter*, issue 61, August 1994, http://ifs.massey.ac.nz/mathnews/centrefolds/61/Aug1994.shtml.

David Gauld

Dr Jennifer Lennon

Many of you will know that Dr Jennifer Lennon from the University of Auckland passed away on 14 July after a tough battle with cancer. She was aged 67.

At a very moving service in the MacLaurin Chapel on 20 July family members, friends and colleagues gathered and spoke of her life and work, and the associations she had made with people from many walks of life. In particular Jennifer will have been well known to members of the Mathematics community, not only through her late husband, Mike, who worked in the Mathematics Department before transferring later to join Jennifer in the fledgling Computer Science Department, but also by the fact that her first degree was in Mathematics. Indeed she ultimately worked in a department which had emerged from Mathematics and which enjoyed a very close social structure over the years.

Jennifer's career at the University of Auckland began in 1981 when she and Barbara Reilly jointly applied for a programmer/analyst position in the Faculty of Engineering. In doing so they were pioneers, as job sharing was not a common situation in those days. In addition they had ventured into male-dominated territory and had to cope with this in many ways. For example, one of their first initiatives

was to persuade the authorities to have women's toilets installed on the 5th floor to avoid the need for them to go all the way down to the ground floor!

In 1984 Jennifer moved to a joint tutoring position with Barbara in the Computer Science Department. This was a young and rapidly growing department in those days, with huge demands put on staff and resources by the growing numbers of students. Here Jennifer plunged into teaching introductory programming, and her commitment resulted in the highly acclaimed "Explorer's Guide to Programming" series of texts which was aimed specifically at teaching programming to non-CS majors. Her dedication, enthusiasm and teaching skills were subsequently recognised by the winning of a distinguished teaching award.

However, her academic career really began to blossom with the arrival of Professor Hermann Mauer in 1992 and the establishment of the Hypermedia Unit. The emergence of new and powerful multimedia technologies provided the ideal outlet for Jennifer's passion for clear and motivational presentation techniques. Her PhD under Herman's supervision was completed in record short time and she pioneered again in becoming the first female doctoral graduate in the CS Department. Her resulting book was hugely successful and marked the start of a very productive research career in multimedia and hypermedia. She developed a graduate course in the area, and for over a decade this remained one of the most popular papers in the CS curriculum.

Jennifer retired from the University in 2005 and spent her last years on Waiheke Island where she adapted enthusiastically to the laid-back island lifestyle and activities. She made many new friends there, and always welcomed old friends who travelled to see her at her wonderful home overlooking Onetangi Beach. After the shocking death of Mike shortly after his retirement in 1999, it was tragic for Jennifer's renewed zest for living to be cut short in such a similar manner.

We in the Computer Science Department will remember Jennifer with great fondness. She was a brilliant and passionate teacher, and an outstanding researcher whose talents really excelled later in her career. She was warm and caring, was a wonderful host, and lived life to the max. She loved the outdoors and had a passion for all sorts of activities ranging from folk dancing to writing science fiction. She was so proud of her family, and to them in particular we extend our sympathy.

Peter Gibbons, University of Auckland

Leslie Woods

In calling his memoirs *Against the Tide: An Autobiographical Account of a Professional Outsider*, the strikingly individual New Zealander Leslie Woods, who has died aged 84, displayed considerable self-awareness. From being a fighter pilot in the second world war, he went on to become a professor of mathematics, having learnt much about the discipline literally on the wing. He then enjoyed a progress through prestigious university posts, where his robustly disputed publications on the key question of the generation of energy through nuclear fusion made his academic career as colourful and combative as his active service.

He was born Leslie Woodhead in Reporoa, a small settlement between Rotorua and Taupo in the North Island, where his father worked as a fisherman. He spent his first few years living in a tent, but later moved to more permanent accommodation in Auckland, where he attended school. His father, however, saw that he did not progress to the grammar school, preferring him instead to train as a mechanic at Seddon Memorial Technical College. There, his talent for maths was quickly spotted and he went on to become the first Seddon student to win a scholarship to Auckland University College.

Once enrolled, he decided to resign his scholarship and join the air force. His progress was hampered, though, by some confrontations with his seniors over some unauthorised aerobatics and a minor accident on a training flight. As a result, he spent part of the war in New Zealand as an instructor. In 1943 he married Betty Bayley, and saw action that led to three tours of duty and 76 missions in the Pacific, including raids on the Japanese fortress at Rabaul.

By the end of the war Les had changed his last name to Woods, apparently to spite his father, and resumed his studies at Auckland University College school of engineering, having continued his work on mathematics to a high level without instruction. His New Zealand BSc came in 1944, under a dispensation available to servicemen with almost complete degrees.

The MSc he gained in mathematics in 1947 was accompanied by the news that he had been awarded

a Rhodes scholarship, which the following year took him and his family to Merton College, Oxford, enabling him to do research on computational aerodynamics in the university's engineering department. He was awarded his DPhil, on the flow of a compressible fluid about a body, in 1950, and the following year gained a first-class honours BSc in engineering from Oxford. A string of research positions followed.

He was seconded by the New Zealand defence corps to the National Physical Laboratory at Teddington, Middlesex, working on aerofoil theory. He became a senior lecturer in applied mathematics at Sydney University in 1954. Then, in 1956, at the age of 33, Les became the second Nuffield research professor of mechanical engineering at the University of New South Wales. When the Australian Mathematical Society was founded in 1956, he was elected a council member, and from 1958 to 1959 he was its vice-president.

However, in 1959 he was back in Britain with his family, to take up a post as an associate of the controlled thermonuclear reaction division of the Atomic Energy Research Establishment at Harwell, Oxfordshire. There had been many attempts to generate power by controlled thermonuclear fusion, with plasma (ionised gas) confined by magnetic fields. Les started on investigating the basic magneto-plasma problem of why, in all attempts to confine plasma, it escaped across the magnetic field at thousands of times the rate predicted.

The early optimistic forecasts of the imminence of power production by controlled thermonuclear reactions looked increasingly improbable. None the less, the project has since moved a few miles north to the science centre at Culham, near Abingdon, where the Joint European Torus (JET), the largest nuclear fusion experimental reactor yet built, has been in operation since 1983.

In 1961 Les published The Theory of Subsonic Planar Flow, an important text in applied mathematics, and became the foundation fellow in engineering at Balliol College, Oxford, retaining a connection with Harwell as consultant in plasma physics. Nine years later he became professor of mathematics (theory of plasma): it was during this period of his career, and in texts afterwards, that his combative approach manifested itself again in his quarrel with fusion physicists and his scepticism about Tokamak, the favourite device of fusion research supported by governments for more than 50 years with billions of pounds' worth of funding. His four major texts — *Magnetoplasma Dynamics* (1987), *An Introduction to the Kinetic Theory of Gases and Magnetoplasmas* (1993), *Thermodynamic Inequalities with Applications to Gases and Magnetoplasmas* (1996), and *Theory of Tokamak Transport: New Aspects for Nuclear Fusion Reactor Design* (2006) — were dismissed by some of his peers, who argued that Woods had ignored the basic principles and equations on which the Tokamak theory is based.

Regardless of his controversial approach, and his suggestion that those involved in fusion would never admit its failings so long as their livelihoods and careers depended on its "steady progress", Les gained DSc degrees at Oxford, the former University of New Zealand and Auckland - the last an honorary award during the university's centennial celebrations in 1983. His career culminated as chairman of the Mathematical Institute at Oxford, from 1984 to 1989, and in 1990 he became professor emeritus.

Les's life with Betty had mostly been happy, but in 1977 their marriage ended in divorce, as did two further marriages. Of his five daughters from his first marriage, two predeceased him, and it was through the persuasion of his eldest, Coral, when dying of cancer at the age of 49, that he wrote for her a brief account of his early life in New Zealand. She urged its expansion and publication, which duly occurred in 2000, after its rejection by two publishing houses for being rather too cutting and assertive.

Citing his pleasures as music and philosophy, Les also played the clarinet and in later life, aged 73, returned to the air when he took up gliding. As colleagues, now based in Auckland, who knew him over many years, we valued him for his friendship, sheer brilliance, and his tenacity for propagating (often unpopular) scientific truth.

Leslie Colin Woods (Woodhead), pilot, mathematician and physicist, born December 6 1922; died April 15 2007.

Garry Tee and Graeme Wake

For further details, readers are directed to Brian Woods's Centrefold (in NZMS Newsletter 48) and Garry Tee's essay review of Les' autobiography (in Newsletter 81). Previous copies of the Newsletter can be found at: http://ifs.massey.ac.nz/mathnews/NZMSnews.shtml

CONTRIBUTION TO MATHEMATICS HONOURED

Professor Robert McLachlan has been named the recipient of the prestigious Dahlquist Prize, the first time the award has gone to a mathematician from the Southern Hemisphere.

The award by the Society for Industrial and Applied Maths is for original contribution to the fields associated with Germund Dahlquist, especially the numerical solution of differential equations and numerical methods for scientific computing. Professor McLachlan's citation notes his outstanding contribution to geometric integration and composition methods, and that his work has found application in many areas including physics. He received the award in St Malo, France, at the Society's conference, making the trip from a three-month sabbatical to Cambridge University.

Professor McLachlan, of Applied Mathematics in the Institute of Fundamental Sciences, also received an individual research medal from Massey University in 2005. He has worked at Massey since 1994 and was awarded his personal chair in Applied Mathematics in 2002. In 2004 he won the prestigious Maclaurin Fellowship from the New Zealand Institute for Mathematics and its Applications and, a year earlier, he was awarded a research medal by the Association of Scientists.

BOOK REVIEWS

Please indicate your willingness to review new books, to the Review Sub-Editor Bruce van Brunt, at `B.vanBrunt@massey.ac.nz`. Bruce, who is presently in South Korea, will then through the marvels of modern technology organise for you to receive a complimentary copy for reviewing.

New Journals from Taylor & Francis

Journal of Biological Dynamics Volume 1, 2007, 4 issues per volume

www.informaworld.com/jbd

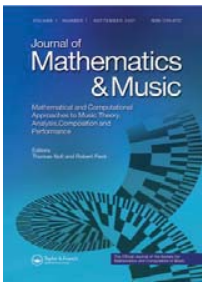
Journal of Biological Dynamics publishes state of the art papers dealing with the analysis of dynamic models that arise from biological processes. The Journal focuses on dynamic phenomena, at scales ranging from the level of individual organisms to that of populations, communities, and ecosystems, that arise in the fields of ecology and evolutionary biology, population dynamics, epidemiology, immunology, environmental science, and animal behavior.

Editors-in-Chief:

J. M. Cushing - *Department of Mathematics and Interdisciplinary Program in Applied Mathematics, University of Arizona, USA.*
Saber N. Elaydi - *Department of Mathematics, Trinity University, USA.*

Journal of Mathematics and Music: Mathematical and Computational Approaches to Music Theory, Analysis, Composition and Perfomance

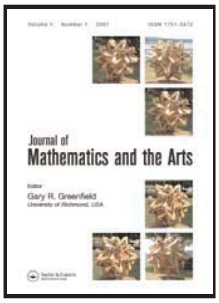
Volume 1, 2007, 3 issues per volume **www.informaworld.com/jmm**



Journal of Mathematics and Music, the official journal of the Society for Mathematics & Computation in Music, aims to advance the use of mathematical modelling and computation in music theory. The Journal focuses on mathematical approaches to musical structures and processes, including mathematical investigations into music-theoretic or compositional issues as well as mathematically motivated analyses of musical works or performances. In consideration of the deep unsolved ontological and epistemological questions concerning knowledge about music, the Journal is open to a broad array of methodologies and topics, particularly those outside of established research fields such as acoustics, sound engineering, auditory perception, linguistics etc.

Editors-in-Chief:

Thomas Noll - *Department of Theory and Composition, Escola Superior de Música de Catalunya, Spain.*
Robert Peck - *School of Music, Louisiana State University, USA.*



Journal of Mathematics and the Arts Volume 1, 2007, 4 issues per volume

www.informaworld.com/jma

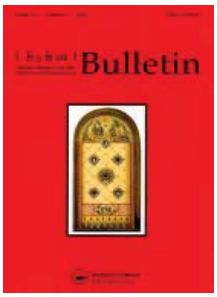
Journal of Mathematics and the Arts is a peer reviewed journal that focuses on connections between mathematics and the arts. It publishes articles of interest for readers who are engaged in using mathematics in the creation of works of art, who seek to understand art arising from mathematical or scientific endeavors, or who strive to explore the mathematical implications of artistic works. The term "art" is intended to include, but not be limited to, two and three dimensional visual art, architecture, drama (stage, screen, or television), prose, poetry, and music. The Journal welcomes mathematics and arts contributions where technology or electronic media serve as a primary means of expression or are integral in the analysis or synthesis of artistic works.

Editor:

Gary Greenfield - *Mathematics & Computer Science, University of Richmond, USA*

BSHM Bulletin: Journal of the British Society for the History of Mathematics

Volume 22, 2007, 3 issues per volume **www.informaworld.com/bshm**



BSHM Bulletin is the journal of the British Society for the History of Mathematics (BSHM), whose aims are to promote research into the history of mathematics and to encourage its use at all levels of mathematics education. ***BSHM Bulletin*** publishes articles, reports, and book reviews on a range of historical topics. Articles on local mathematical history, the use of history of mathematics in education, and those reflecting individual interests and research are particularly encouraged.

Editor:

Jackie Stedall - *The Queen's College, Oxford, UK*

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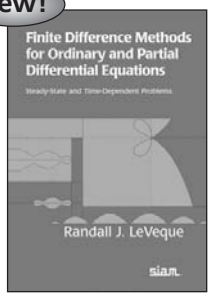
Titles in Applied Math from SIAM

www.siam.org/catalog

Finite Differences for Ordinary and Partial Differential Equations: *Steady-State and Time-Dependent Problems*

Randall J. LeVeque

new!



This book introduces finite difference methods for both ODEs and PDEs and discusses the similarities and differences between algorithm design and stability analysis for different types of equations. A unified view of stability theory for ODEs and PDEs is presented, and the interplay between ODE and PDE analysis is stressed. The text emphasizes standard classical methods, but several newer approaches also are introduced and are described in the context of simple motivating examples.

2007 · xiv + 341 pages · Softcover · ISBN 978-0-898716-29-0
List Price $63.00 · SIAM Member Price $44.10 · **Code OT98**

Perturbation Bounds for Matrix Eigenvalues

Rajendra Bhatia

Classics in Applied Mathematics 53

new!

This text contains a unified exposition of spectral variation inequalities for matrices. It provides a complete and self-contained collection of bounds for the distance between the eigenvalues of two matrices, which could be arbitrary or restricted to specific classes. Many basic results and techniques can be found in this book, making it a good reference for researchers and students.

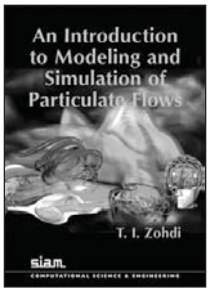
2007 · xvi + 191 pages · Softcover · ISBN 978-0-898716-31-3
List Price $49.00 · SIAM Member Price $34.30 · **Code CL53**

An Introduction to Modeling and Simulation of Particulate Flows

T. I. Zohdi

Computational Science and Engineering 4

new!



This introductory monograph focuses on basic models and physically based computational solution strategies for the direct and rapid simulation of flowing particulate media. Its emphasis is primarily on fluidized dry particulate flows in which there is no significant interstitial fluid, although fully coupled fluid-particle systems are discussed as well. An introduction to basic computational methods for ascertaining optical responses of particulate systems also is included.

June 2007 · xviii + 176 pages · Softcover · ISBN 978-0-898716-27-6
List Price $110.00 · SIAM Member Price $77.00 · **Code CS04**

Data Clustering: *Theory, Algorithms, and Applications*

Guojun Gan, Chaoqun Ma, and Jianhong Wu

ASA-SIAM Series on Statistics and Applied Probability 20

new!

Cluster analysis is an unsupervised process that divides a set of objects into homogeneous groups. This book starts with basic information on cluster analysis, including the classification of data and the corresponding similarity measures, followed by the presentation of over 50 clustering algorithms in groups according to some specific baseline methodologies.

2007 · xviii + 466 pages · Softcover · ISBN 978-0-898716-23-8
List Price $114.00 · ASA/SIAM Member Price $79.80 · **Code SA20**

Available September

Applied Stochastic Processes and Control for Jump Diffusions: *Modeling, Analysis, and Computation*

Floyd B. Hanson

Advances in Design and Control 13

This self-contained, practical, entry-level text integrates the basic principles of applied mathematics, applied probability, and computational science for a clear presentation of stochastic processes and control for jump-diffusions in continuous time. The author covers the important problem of controlling these systems and, through the use of a jump calculus construction, discusses the strong role of discontinuous and nonsmooth properties versus random properties in stochastic systems.

September 2007 · xxviii + 441 pages · Softcover
ISBN 978-0-898716-33-7 · List Price $104.00
SIAM Member Price $72.80 · **Code DC13**

An Introduction to Iterative Toeplitz Solvers

Raymond Hon-Fu Chan and Xiao-Qing Jin

Fundamentals of Algorithms 5

Toeplitz systems arise in a variety of applications in mathematics, scientific computing, and engineering. This practical book introduces current developments in using iterative methods for solving Toeplitz systems based on the preconditioned conjugate gradient method. The authors focus on the important aspects of iterative Toeplitz solvers and give special attention to the construction of efficient circulant preconditioners. Applications of iterative Toeplitz solvers to practical problems are addressed, enabling readers to use the book's methods and algorithms to solve their own problems.

September 2007 · xii + 108 pages · Softcover
ISBN 978-0-898716-36-8 · List Price $67.00
SIAM Member Price $46.90 · **Code FA05**

All prices are in US dollars.

TO ORDER

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SIAM SOCIETY FOR INDUSTRIAL AND APPLIED MATHEMATICS

CONFERENCES

Report on MISG2007 (Mathematics and Statistics in Industry Study Group)

This year's ANZIAM Mathematics and Statistics in Industry Study Group (MISG2007) was held at the University of Wollongong, 5-9th February 2007.

A/Prof. Tim Marchant was the Director, Dr. Maureen Edwards the Associate Director while Ms. Joell Hall and Ms Sue Denny acted as the Administrators.

The event attracted about 100 delegates, including twenty postgraduate students, who worked on six industry projects. Five of these projects were submitted by Australian companies and one from New Zealand.

These projects covered diverse fields such as financial mathematics and statistics, operations research, solid mechanics and mathematical modelling.

MISG2007 was fortunate in attracting Prof. Robert McKibben, from Massey University, as invited speaker. His wealth of experience in Industrial Mathematics resulted in him presenting two very entertaining and stimulating seminars. Thanks also to Dr. Mike Camden, from Statistics NZ and Dr. Jeff Dewynne, from Oxford University, for their seminars at the student workshop.

MISG2007 was opened by Mr Stephen Lowe, General Manager Trading, Integral Energy and Prof. Margaret Sheil, DVC-Research at Wollongong (who is now CEO of the ARC).
Thanks to both these individuals for their attendance and comments at the opening ceremony.

MISG2007 attracted significant media publicity; an article appeared in the local newspaper, the *Illawarra Mercury*, and the director was interviewed twice on local ABC radio.

From left, Dr. Maureen Edwards, MISG Assoc. Director, Prof. Robert McKibben, Invited Speaker, A/Prof. Tim Marchant, Director and Mr. Joe Maisano, Trading Technology Australia

The conference dinner was held at the City Beach function centre, which enjoys spectacular views over Wollongong Harbour and the coastline. Other social events included a cocktail reception on the Monday evening, a student workshop followed by pizza on the Tuesday and of course, the annual volleyball grudge match, Australia vs The World.

Due to the broad range of skills required to tackle modern industrial mathematics problems many high-profile scientists from the Australian and NZ Statistics and Financial Mathematics communities attended MISG2007 as delegates or moderators. If the MISG meeting is to remain relevant and important in the coming years then this multi-disciplinary approach to industrial problem solving needs to continue, with participation at MISG from all the Mathematical Sciences.

Moderation of an MISG project is a challenging task involving problem solving, people management and a very tight deadline. So our thanks and gratitude go to the moderators of each of the MISG2007 projects. Following on the tradition from MISG2006 in NZ, each project also included a postgraduate student as moderator.

Delegates from MISG2007 working on the Tranpower NZ Industry Project.

See our web-site:
www.misg.math.uow.edu.au
for the industry project descriptions from MISG2007, the equation-free summaries of the projects and the outcomes, and also pdf files of the project reports, as they become available. The web-site also provides details of MISG2008, to be held 28th Jan.–1st Feb. 2008. We hope to see everybody at UOW for the 2008 event.

Tim Marchant and Maureen Edwards

Conferences Coming Up

November 5 – 7, 2007, Long Bay, Auckland: **Workshop for Women in the Mathematical Sciences in New Zealand**. For further info, contact Dr Vivien Kirk, v.kirk@auckland.ac.nz

November 22 – 23, 2007, Queenstown: **New Zealand Mathematics and Statistics Postgraduate (NZMASP) Conference**. For further info, contact Scott Graybill, jg146@student.canterbury.ac.nz

November 29 – 30, 2007, University of Auckland, Auckland: **42nd Annual ORSNZ Conference**. https://secure.orsnz.org.nz/conf/

December 3 – 7, 2007, University of Otago, Dunedin: **32nd Australasian Conference on Combinatorial Mathematics and Combinatorial Computing**.
http://www.cs.otago.ac.nz/staffpriv/mike/ACCMCC32/32ACCMCC.html

December 9 – 11, 2007, Victoria University of Wellington, Wellington: **Mathematical & Computational Nanoscience**. Further information follows. http://www.macdiarmid.ac.nz/mcn/

December 12 – 15, 2007, Victoria University of Wellington, Wellington: **1st Joint International Meeting between the American Mathematical Society and the New Zealand Mathematical Society**. Further information follows.
http://www.mcs.vuw.ac.nz/~mathmeet/amsnzms2007/

January 6 – 12, 2008, Tahuna Function Centre, Nelson: **2008 NZMRI Conference on Conformal Geometry: Summer Workshop on Conformal Geometry and Geometric Approaches to PDE's**.
http://www.math.auckland.ac.nz/wiki/2008_NZMRI_Conference_on_Conformal_Geometry

January 14 – 18, 2008, UC Edward Percival Field Station, Kaikoura: **Conference on Finite Groups and Representations**. http://www.math.canterbury.ac.nz/bio/Finite_Groups/

January 28 – February 1, 2008, University of Wollongong, NSW, Australia: **Mathematics in Industry Study Group.** www.misg.math.uow.edu.au

February 3–7, 2008, Carrington Hotel, Katoomba, NSW., Australia: **ANZIAM2008**, The annual meeting for Australian and New Zealand Industrial and Applied Mathematics. http://www.maths.usyd.edu.au/ANZIAM2008/

February 18 – 22, 2008, War Memorial Centre, Napier: **Workshop on Algorithmics**. Further information follows. http://algo.otago.ac.nz/

June 30 – July 4, 2008 London, UK: **ECMI2008**, The European Consortium for Mathematics in Industry. See below.

December 8 – 12, 2008, University of Canterbury, Christchurch: **7th Australia-New Zealand Mathematics Convention**.
For further info, contact Rick Beatson, r.beatson@math.canterbury.ac.nz

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The European Consortium for Mathematics in Industry

http://www.ecmi2008.org

University College London, 30 June – 4 July 2008
Organised by the Institute of Mathematics and Its Applications

Plenary Speakers

Andrea Bertozzi (University of California Los Angeles), Benoit Dejardins (Ecole Normale Suprieure, Paris), Manuel Doblare (Universidad de Zaragoza), Ioannis Karatzas (Columbia University), Miguel Moscoso (Universidad Carlos III de Madrid), Colin Please (University of Southampton), Mario Primicerio (Universit degli Studi di Firenze), Yongji Tan (Fudan University, Shanghai), Jonathan Tawn (Lancaster University), Nick Trefethen (University of Oxford)

Key Dates

30 November 2007 Deadline for mini-symposia proposals
15 December 2007 Approval of mini-symposia by committee
18 January 2008 Deadline for receipt of contributed abstracts, mini-symp abstracts and poster proposals
1 February 2008 Contributing authors notified of acceptance or rejection of submissions
22 February 2008 Early Bird registration deadline
2 May 2008 Confirmation and payment of accommodation
20 June 2008 Closing date for registration and payment

1st Joint Meeting of the American and New Zealand Mathematical Societies

Incorporates the 2007 NZ Mathematics Colloquium
Victoria University of Wellington, 12-15 December 2007

http://www.mcs.vuw.ac.nz/~mathmeet/amsnzms2007/

Please register by 31 October at:
http://www.mcs.vuw.ac.nz/cgi-bin/events/amsnzms2007-registration

Graduate students are very welcome. There is a reduced fee and travel grants are available - see the web site for details. Graduate speakers from New Zealand are encouraged to enter for the Aitken Prize when they register. (Information at http://www.math.waikato.ac.nz/NZMS/aitken06.html)

Plenary speakers:

Marston Conder (University of Auckland) Chirality

Rod Downey (Victoria University of Wellington) Practical FPT and Foundations of Kernelization

Michael Freedman (Microsoft Research) Physically Motivated Questions in Topology: Manifold Pairings

Bruce Kleiner (Yale University, NZIMA Speaker) Bilipschitz Embedding in Banach Spaces

Gaven Martin (Massey University) Curvature and Dynamics

Assaf Naor (Courant Institute, NYU) The Story of the Sparsest Cut Problem

Theodore Slaman (University of California, Berkeley) Effective Randomness and Continuous Measures

Matt Visser (Victoria University of Wellington) Emergent Spacetimes, Rainbow Geometries and Pseudo-Finsler Geometries

Special sessions:

Computability Theory
Dynamical Systems and Ergodic Theory
Geometric Numerical Integration
Group Theory, Actions, and Computation
History and Philosophy of Mathematics
Hopf Algebras and Quantum Groups
Infinite-Dimensional Groups and their Actions
Integrability of Continuous and Discrete Evolution Systems
Mathematical Models in Biomedicine
Matroids, Graphs, and Complexity
New Trends in Spectral Analysis and PDE
Quantum Topology
Special Functions and Orthogonal Polynomials
University Mathematics Education
Water-Wave Scattering Focusing on Wave-Ice Interactions

Contact details for special session organisers and names of confirmed speakers are available at the conference website

General contributed talks will also be scheduled and will include Aitken Prize talks where these are not included in a special session.

Please submit all abstracts to http://atlas-conferences.com/cgi-bin/abstract/submit/catm-01 by 31 October.

Contact Peter Donelan: `peter.donelan@mcs.vuw.ac.nz` or Matt Miller: `miller@math.sc.edu`

Mathematical & Computational Nanoscience 2007

December 9-11 2007
Victoria University of Wellington
http://www.macdiarmid.ac.nz/mcn/

We are organising a one-off 3-day symposium on Mathematical and Computational Nanoscience to be held at Victoria University in Wellington, New Zealand on December 9-11, 2007. This symposium is aimed at mathematicians and theoretical or computational scientists interested in nanoscale science and technology. As such we are seeking contributions to the symposium concerning the development and application of modelling and simulation techniques to nanoscale phenomena. This meeting is timed to immediately precede the Joint Meeting of the American Mathematics Society and the New Zealand Mathematics Society to be held in Wellington from December 12-15 (see www.mcs.vuw.ac.nz/~mathmeet/amsnzms2007/). We are hoping for 60-70 attendees with approximately 6 plenary talks, 6 invited talks and 24 contributed talks over the three days. We will also be accepting poster presentations.

Topics

Mathematical Modelling

Kinetic Monte Carlo Methods

Accelerated Molecular Dynamics

Coarse Grained Methods

Concurrent Hybrid Schemes

Hierarchical Multiscale Modelling

Other applications of mathematics in nanoscience

Confirmed Plenary and Invited Speakers

Art Voter (Los Alamos National Laboratory)

Bjorn Engquist (University of Texas)

Leonard Sander (University of Michigan)

Peter Cummings (Vanderbilt University)

Peter Smereka (University of Michigan)

Mitch Luskin (University of Minnesota)

James Hill (University of Wollongong)

Axel Voigt (University of Dresden)

Graham Weir (Industrial Research Limited)

Carlo Laing (Massey University)

Ulrich Zuelicke (Massey University)

Organisers

Shaun Hendy (IRL/VUW) Tim Schulze (Tennessee)

Sponsors

New Zealand Institute of Mathematics and its Applications (http://www.nzima.org/)

Workshop on Algorithmics, Napier, New Zealand

The New Zealand Institute of Mathematics and its Applications (NZIMA) is funding a thematic programme on Algorithmics: New Directions and Applications in 2008. To launch the programme, a workshop is being held in Napier, 18-22 February 2008. The workshop includes two expository lectures by each of the invited speakers, as well as short contributed talks and problem sessions. Invited speakers include:

Michael Langston , University of Tennessee

Steve Linton , University of St Andrews

Brendan McKay , Australian National University

Michael Mitzenmacher , Harvard University

Dominic Welsh , University of Oxford

For further details of the programme and to register your interest for the workshop, see
http://www.cs.otago.ac.nz/algorithmics/home/
and
http://www.cs.otago.ac.nz/algorithmics/activities/febmeeting.html

We welcome enquires from anyone interested in participating in the programme.

Mike Atkinson (Director, University of Otago), mike@cs.otago.ac.nz
Charles Semple (Director, University of Canterbury), c.semple@math.canterbury.ac.nz
Mark Wilson (Associate Director, University of Auckland), mcw@cs.auckland.ac.nz

NOTICES

CALL FOR NOMINATIONS FOR 2007 NZMS EARLY CAREER AWARD

This award was instituted in 2006 for early career New Zealand mathematicians.

Call for nominations 2007

Applications and nominations are invited for the NZMS Early Career Award for 2007. Criteria for eligibility are the same as for the Marsden fast start grants. Essentially, this means that applicants must be within seven years of confirmation of PhD with an allowance made for extenuating circumstances. The candidate will be judged on their three best papers and a two-page CV. They will have completed a significant part of their research within NZ. The awardee would also normally be expected to be a member of the NZMS.

A judging panel shall be appointed by the NZMS Council. No person shall receive the award more than once. The award consists of a certificate including an appropriate citation of the awardee's work, and will be presented (if at all possible) at the New Zealand Mathematics Colloquium Dinner in 2008.

All nominations and applications should be sent by 31st October 2007 to the NZMS President, Professor Gaven Martin, Institute of Information and Mathematical Sciences, Massey University, Albany Campus, Private Bag 102 904, North Shore Mail Centre, Auckland, New Zealand.

Application for membership of the NZMS

The New Zealand Mathematical Society (Inc.) is the representative body of professional mathematicians in New Zealand, and was founded in 1974. Its aims include promotion of research in the mathematical sciences, the development, application and dissemination of mathematical knowledge within New Zealand, and effective cooperation and collaboration between mathematicians and their colleagues in New Zealand and in other countries.

Membership categories:

(Full details at www.math.waikato.ac.nz/NZMS/NZMS.html)

Ordinary*	$36 p.a.	
Reciprocal	$18 p.a.	

For overseas residents who are fully paid-up members of societies with which the NZMS maintains a reciprocity agreement (including the American Mathematical Society, the Australian Mathematical Society, the Canadian Mathematical Society, the London Mathematical Society, and the Mathematical Society of Japan).

Student*	$7.60 p.a.	For currently enrolled students in NZ
Overseas student	$18 p.a.	For currently enrolled students in overseas

(GST is added to rates for NZ residents.)

Members can subscribe to the New Zealand Journal of Mathematics (http://www.math.auckland.ac.nz/NZJM/index.html) at a reduced rate.

Members can also elect to make a donation, when paying their subs, to the NZMS Endowment for Student Support.

* The Society offers NZ students and new staff a special free one-year membership.

Please complete below and mail to:

John Shanks, NZMS Membership Secretary,
Department of Mathematics and Statistics,
University of Otago, P.O. Box 56, Dunedin, NZ

or Fax: +64 (3) 479 8427

E-mail: jshanks@maths.otago.ac.nz

NZMS Application Form

Name: _____ Title: _____

Address: _____

_____

_____

An institutional address is preferred

E-mail: _____

Membership category: ☐ Ordinary ☐ Reciprocal ☐ Student ☐ Overseas student

If Reciprocal then complete this:

I am a fully-paid up member of _____

☐ I wish to receive the NZ Journal of Mathematics at special rate

Signed: _____ Date: _____

Please send no money now. You will be invoiced once your application is accepted.