THE NEW ZEALAND
MATHEMATICAL SOCIETY (INC.)

NEWSLETTER

CONTENTS

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PUBLISHER'S NOTICE

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The New Zealand Mathematical Society
The New Zealand Mathematical Society
c/- The Royal Society of New Zealand,
P O Box 598, Wellington, New Zealand.

However, correspondence should normally be sent to the Secretary:

Dr Stephen Joe,
Department of Mathematics,
The University of Waikato, Private Bag 3105, Hamilton, New Zealand.

Items for submission to this journal should be submitted as text or latex files to m.hendy@massey.ac.nz

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Garry Tee Mathematics (University of Auckland)

LOCAL NEWS

AgResearch

Join AgResearch and see the world! Peter Johnstone (Invermay) is travelling in Thailand and Pakistan for 5 weeks. Dave Saville (Lincoln) spent two weeks in June experiencing the heat and humidity of Asia, en-route to ICOTS-5 in Singapore where he presented a paper on the geometry of the p-value, met famous people, and picked up some new ideas. Mick Roberts (Wallaceville) has just returned from a workshop on The Ecology of Infectious Diseases of Wildlife in Trento, Italy, where he presented an invited paper, followed by a week of collaborative work at Wageningen in the Netherlands.

On the home front Rowland Kao and Mick Roberts (Wallaceville), Ken Louie (Grasslands) and Simon Woodward (Ruakura) attended the mathematics colloquium at Victoria University and presented papers, and Tanya Soboleva and Tony Pleasants (Ruakura) were present in spirit as Graeme Wake's co-authors.

Mick Roberts

UNIVERSITY OF AUCKLAND

School of Mathematical and Information Sciences

The University's Research Committee has approved in principle the establishment of a Centre for the Applications of Mathematics and Statistics (CAMS), involving staff of the three Departments of Engineering Science, of Mathematics and of Statistics, with the aim of providing a focus for consulting and applied research in the mathematical and statistical sciences. The Research Committee has asked for the names of principal members of the Centre, and the members of the management committee.

Ivan Reilly is on leave for the second half of 1998.

Department of Computer Science

Professor Bob Doran, Dr Alan Creak and Dr Michael Lennon are retiring from the Department. Dr Christian Collberg has resigned, to take up an appointment at the University of Arizona.

Peter Hertling has been a post-doctoral fellow of Cris Calude for 20 months. A Ph.D. student of Professor K. Weihrauch (University of Hagen),

Peter got a German post-doctoral fellowship to continue his studies on algorithmic information theory in Auckland.

His contributions to the Centre and Department have been outstanding:

*15 papers published or accepted by various journals and conferences, including ICALP and STACS, the most prestigious conferences in Theoretical Computer Science in Europe. Peter's papers have been accepted or invited for 10 other conferences in Europe, Asia, South-America and New Zealand.

*7 "local" co-authors: Bakhadyr Khoussainov, Radu Nicolescu, Yongge Wang, Mark Titchener, Richard Coles, and Cris Calude.

*His papers deal with problems in algorithmic information theory, recursive function theory, constructive analysis, logic of quantum mechanics and coding.

*He was an enthusiastic member of the teams organizing the international conferences DMTCS'96 and UMC'98.

We wish Peter all the best for his visiting position at the Institute of Mathematical Sciences in Berkeley, and his return to Hagen (at the end of the year). We hope that he will be a frequent visitor to Auckland, and that we will continue our fruitful cooperation.

Seminars

Professor Hubert L. Dreyfus (University of California, Berkeley), "Skills: why they resist symbolic AI but can sometimes be captured by neural networks".

Dr Mark R. Titchener, "A new theory of complexity and information".

John Thornley (CalTech), "A system for structured multithreaded programming".

Paul Qualtrough, "Tales from the `too hard basket': robots, intelligence and learning".

Professor V. Dvorak (Technical University of Brno), "Prototyping and tuning parallel applications".

Dr Charles Watson (AIT), "The neural accelerator".

Dr Zhiyi Huang (Griffith University, Queensland), "Toward transparent selective sequential consistency in distributed shared memory systems".

Professor Robert W Doran, "Art, billiards and computers".

Paul Denny, "Case studies and new results in combinatorial enumeration".

Dr Mike Barley, "Model-based refinement of search heuristics". Dr Ruddy Lelouche (Université

Laval, Canada), "How education can benefit from computers: a critical survey".

Professor Ko-Wei Lih (Institute of Mathematics, Academia Sinica, Taipei), "The equitable coloring of graphs".

Dr Georgy Gimelfarb (Tamaki Campus), "Stochastic image textures: modeling natural images by Gibbs random fields"

Dr Ludwig Staiger, (Martin-Luther-University Halle-Wittenberg), "On the computation of Hausdorff dimension".

Department of Mathematics

Dr Mohan Chinnappan has taken up his appointment as a Lecturer in the Mathematics Education Unit.

Professor Graeme Wake was farewelled at a dinner by the Department, when he left to take up the Chair in Applied Mathematics at the University of Canterbury. He remains an Honorary Research Associate of this Department.

Dr Alex McNabb is leaving Tamaki Campus, where he has been based as a Marsden-funded research associate since 1995. Alex has been appointed to a senior research post as principal scientific officer with the CSIRO in Canberra. We are grateful to Alex for his scientific contributions, especially at Tamaki Campus.

Marston Conder gave an invited address on "Graphs and maps with maximum symmetry", at a conference at Flagstaff Arizona in July, on Symmetries in Graphs, Maps and Complexes.

Mike Thomas has returned from short leave for the First Semester, at the Mathematics Education Research Centre (Warwick University) and the Centre for Mathematics education (Open University). Gaven Martin is on conference leave in Scotland and Finland, and Joel Schiff is on leave. Boris Pavlov has returned from short leave at St Petersburg and Brussels, and Norm Levenberg has returned from conference leave in France.

Recent visitors include Professor Tony Bracken (University of Queensland), Professor Satya Deo (R. D. University Jabalpur). Professor Geoff Robinson (University of Leicester), Professor Len Bos (University of Calgary) and Dr Amal Al-Amleh (University of Rhode Island).

Paul Bonnington and others prepared an application for an infrastructure grant from the University's Research Committee. The outcome was a grant of $30,000, for further upgrades to the computer network Aitken. The following staff were successful in the April round of AURC staff research grants:

Marston Conder $4000 computer

Norm Levenberg $3400 travel/subsistence

Barbara Miller-Reilly $1000 travel/subsistence

Eamonn O'Brien $6000 computer and travel

Ivan Reilly $1000+travel/subsistence

MK Vamanamurthy $4000 computer

Shayne Waldron $10000 grant-in-aid

The Faculty of Science has awarded the Fowlds Memorial Prize to Emily Lane, and a Dean of Science Prize to Robyn Curtis. Sina Greenwood, Kerry Richardson and Sanja Todorovic-Vasiljevic have won grants from the University's Graduate Research Fund, for conference travel.

Dale Winter, one of our graduates, has completed his Ph.D thesis on General Relativity at the University of Michigan, under the direction of J. Smoller. He has accepted a post-doctoral position at Duke University for the next few years.

This year, the 39th International Mathematical Olympiad for secondary school students took place in Taipei (Taiwan). The leaders were Dr Arkadii Slinko (University of Auckland) and Dr Mike Albert (University of Otago). Robin Christian and Lily Wang (both from Auckland) were awarded bronze medals.

Auckland Numerical Ordinary Differential Equation (ANODE) Workshop

An international workshop entitled: Numerical ordinary differential equations in theory and practice was held from 29 June to 10 July in the Department. Organised by Professor John Butcher, Dr Robert Chan, Nicolette Goodwin, Bev Grove and Dr Allison Heard, this workshop was one of the biggest New Zealand conferences in the area of theoretical applied mathematics. It featured two main series of lectures by prominent numerical analysts, scheduled lectures by other participants, and provision for impromptu presentations on work, as it develops, arising from discussions amongst people taking part. After a welcome by the Deputy Vice-Chancellor, invited and local speakers began a programme of 50 presentations.

Among the international visitors were:

Professor J. M. Sanz-Serna, University of Valladolid, Spain;

Professor Marc Spijker, Mrs Natalia Borovykh and Mr. Guido van den Heuvel, Rijksuniversteit Leiden, The Netherlands

Professor Masaharu Nakashima, Kagoshima University, Japan

Professor Manfred Trummer, Simon Fraser University, Canada

Dr Amal Al-Amleh, University of Rhode Island, United States of America

Dr Anne Aubry and Dr Philippe Chartier, IRISA, Campus de Beaulieu, Rennes, France

Mr Othmar Koch and Mr Peter Kofler, University of Technology, Vienna, Austria

Prof Hermann Brunner, Memorial University of Newfoundland

Professor Yoshiaki Muroya, Waseda University, Tokyo, Japan

Dr Reinout Quispel and Dr Barbara Zubik-Kowal, Katholieke Universiteit, Leuven, Belgium

Dr Adrian Hill, University of Bath, England

Mr David Goeken and Professor Olin Johnson, University of Houston, United States of America

Professor Z Jackiewicz, Arizona State University, United States of America

Professor Robert Corless, University of Western Ontario, London, Canada

Dr Arthur Norman, Cambridge University, England

Professor Ray Zahar, Université de Montréal, Canada

Dr Barbara Zubik-Kowal, Leuven Catholic University, Belgium.

1998 NZ MATHEMATICS COLLOQUIUM

The 1998 New Zealand Mathematics Colloquim was held at Victoria University of Wellington on July 6th to 9th, with 109 registered delegates. Thirty of those delegates registered only for the Mathematics Education Day, on July 9th.

At the Colloquium Dinner, Professor Rob Goldblatt announced that the New Zealand Mathematical Society Research Award for 1998 been awarded to Dr Jianbei An, with the citation "for his contributions to the study of modular representations of groups, in which he has established his leading expertise through a combination of deep understanding, ingenuity and technical skill". (Jianbei had returned briefly on July 6th from leave in China and he did not attend the Colloquium, and so the certificate was handed to him in our Department on Sunday July 12th).

Also, Professor Goldblatt announced that Garry Tee has been made an Honorary Life Member of the New Zealand Mathematical Society.

The Aitken Prize, for the best paper by presented by a student at the Colloquium, was won by Charles Semple of VUW, for his paper "Excluded minors for matroid representability".

Professor Leslie C. Woods, Professor Emeritus of Balliol College Oxford, graduate of this Department and Honorary Doctor of Science of the University of Auckland, delivered the New Zealand Mathematical Society Lecture on "The Tokomak Disaster".

Members of this Department gave the following Contributed Talks at the Colloquium:

Alona Ben-Tal, "Ferroresonance - a non-linear phenomenon in power systems".

John Butcher, "An introduction to Padé approximations with an application".

Andrei Korobeinikov, "Global properties of the three-dimensional Lotka-Volterra and Leslie-Gower prey-predator models: a comparative analysis".

Alastair McNaughton, "A non-standard solution method for linear programming".

Mike Meylan, "A novel numerical solution method for the linear Boltzmann equation".

Margaret J. Morton, "A note on arc-transitive circulants".

Eamonn O'Brien, "Structured investigation of matrix groups".

Louise Parsons, "Mathematical models for the foraging strategy of dairy cows".

Steve Taylor, "Boundary feedback stabilisation of the wave equation".

Garry J. Tee, "Isochrones and brachistochrones".

Mike Thomas, "Versatile understanding of linear equations".

Shinji Yamamoto, "Age-structure and non-age-structure population models".

Seminars

Professor Gaven Martin, "Analytic continuation, transformation groups and the Hilbert-Smith conjecture".

Dr Stephan K. Matthai (ANU), "A characteristics-based mixed finite-element /finite-difference method for chemical advection in fractured rock".

Dr Paul Gartside (Galway), "The space of subgroups of a compact group".

Professor Herb Freedman (University of Alberta), "Single-species models of diffusion in a patchy environment".

Dr Shayne Waldron, "The eigenstructure of the Bernstein operator".

Professor Satya Deo (R. D. University, Jabalpur), "Discrete groups and discontinuous actions", and "On Hopfian and co-Hopfian spaces which are compact zero-dimensional", "Alexander-Spanier cohomology of powers of the long line".

Dr Mark C. Wilson, "Algebras of my acquaintance".

Emily Lane, "Heteroclinic cycles, networks and switching".

Dr John McKenzie, "Metrics, curvature and modifying 4-manifolds".

Dr Warren Moors, "On the Choquet-Dolecki theorem".

Professor Tony Bracken (University of Queensland), "Modelling of drug uptake by the liver".

Dr Wiremu Solomon, "Models of measles".

Dr Stephen McDowall (University of Washington, Seattle), "An electromagnetic inverse problem in chiral media".

John McKenzie, "A family of hyperbolic 4-manifolds".

Kerry Richardson, "A new window on the consistency of the normal Moore space conjecture".

Professor Shamil U. Galiev (Mechanical Engineering), "Nonlinearities, singularities and local resonant wave phenomena in nature".

Tsukasa Yashiro, "An invariant of immersed 3-manifolds in R4".

A-Professor Don Nield (Department of Engineering Science), "Mathematical modelling of fluid flow in porous media".

Dr Colin Bailey (Victoria University of Wellington), "Bounding exponentials in cardinal arithmetic".

Abdul Mohamad, "Cleavability over manifolds".

Louise Parsons, "Mathematical models for the foraging strategies of dairy cows".

John Pearson, "Three problems involving graphs and surfaces".

Sina Greenwood, "Type I manifolds".

Dr Cai Heng Li (University of Western Australia), "On automorphism groups and isomorphisms of finite vertex-transitive graphs".

Niels Hendriksen, "Should a mathematics teacher know something about the history of mathematics?".

Professor David Gauld, "Some highlights of the topology conference in Mexico".

Sanja Todorovic-Vasiljevic, "Bounds on the number of automorphisms of a non-orientable surface of given genus".

Professor Geoff R. Robinson (University of Leicester), "Minimizing a quadratic form - with applications to character theory".

Dr Amal Al-Amleh (University of Rhode Island), "A difference equation with strong negative feedback", and "Boundedness of solutions of a plant-herbivore system".

Dr Stuart Scott, "Primary N-groups".

Dr Dane Flannery (National University of Ireland, Galway), Hadamard matrices and cocycles .

A-Professor M. K. Vamanamurthy, Generalised elliptic integrals .

Sina Greenwood and Jiling Cao, Constructing type-I manifolds with given degree trees, and topological games and multifunctions .

Dr Michael Meylan, "A novel numerical solution method for the linear Boltzmann equation".

DEPARTMENT OF STATISTICS

The Australian Biennial Statistics Confernce, at Gold Coast, was attended by Alan Lee, Pat Metcalf, Arden Miller, Odundo Nyangoma, Alastair Scott, David Scott, Chris Triggs, Alain Vandal and Chris Wild. Rob Gentleman, Ross Ihaka, Paul Murrell and Alain Vandal visited Bell Laboratories.

Dr Lakhdar Aggoun resigned, and has now left the Department.

Seminars

Professor Fred Smith (Southampton University), "100 years of survey sampling".

Dr Murray Smith (Engineering Science), "Statistical inference: who is it for anyway?".

Dr Russell Millar (University of Auckland) and Trevor Willis (Leigh Marine Laboratory), "Estimating the density of snapper in and around a marine reserve using a log-linear mixed effects model".

Professor Thomas Lumley (University of Washington), "Weighted empirical adaptive variance estimators for correlated data regression".

Professor David R. Brillinger (University of California - Berkeley), "Point and marked point processes in climatology".

Professor Emanuel Parzen, (Texas A and M University), "Statistical methods mining and nonparametric quantile domain data analysis".

Doug Stirling (Massey University), "Java, Web browsers and the teaching of statistics".

Mia Steenholt, Bjarke Klein and Claus Dethlefsen (Aalborg University), "Introduction to mathematics and statistics at Aalborg University, Denmark, illustrated by Master's and Ph.D. studies".

Dr Jiti Gao (Queensland University of Technology), "Selection of non-linear time series models and data analysis: looking closely at the Canadian lynx data".

Garry J. Tee

UNIVERSITY OF CANTERBURY

Department of Mathematics and Statistics

Professors Graeme C. Wake and Malcolm Faddy have taken up chairs in Applied Mathematics and Statistics respectively here at Canterbury. Professor Wake joins us from the University of Auckland, where he held the chair in Industrial Mathematics.

Professor Douglas Bridges, currently at the university of Waikato has accepted the chair in Pure Mathematics, and Marco Reale has accepted a lectureship in Statistics.

In July Charles Semple arrived at Canterbury to begin a post-doc with Dr Mike Steel. Dr Semple has recently completed his PhD at Victoria University of Wellington, and will work on combinatorial problems in phylogenetic tree reconstruction. Dr Semple is supported until the end of the year 2000 by the Marsden fund.

The department is currently enjoying a visit from Professor Will Light of Leicester University. Professor Light is a specialist in approximation theory and is visiting Associate Professor Beatson.

Recent visitors to the Biomathematics research centre include Laszlo Szekeley, David Bryant, and Daniel Huson.

Chris Price

MASSEY UNIVERSITY

Institute of Fundamental Sciences (Mathematics)

Massey News:Associate Professor Dean Halford retired recently after 36 years at Massey-even longer than there has been a Massey University! Dean is one of only four members of the original staff. Of university contributions far, far too numerous to mention, his most recent role in mathematics has been as Head of Department from 1995 to 1997. After half a year's break to spend more time with his family, he will be returning to the institute part-time from 1999.

Mahyar Amouzegar, after finally deciding to buy a house here, has departed for greener pastures at RAND corporation in Santa Monica. (Or should that be khaki pastures?) But he's keeping the house, and we look forward to continuing links through his management of the Journal of Applied Mathematics and Decision Sciences.

At the Annual General Meeting of the New Zealand Branch of ANZIAM, held at the New Zealand Mathematics Colloquium, Robert McKibbin and Adrian Swift were re-elected Chairperson and Treasurer respectively.

Feng-Ming Dong has arrived to take up a 2-year postdoctoral fellowship, working with Kee Teo, Charles Little and Mike Hendy on chromatic polynomials of graphs. He has just completed a PhD at the National University of Singapore on "Structures and Chromaticity of Graphs." Feng-Ming is accompanied by his wife, Ye, and their son Xin-yan aged 8.

Visitors to Palmerston North will be saddened to hear, as we are, that our long-time secretary Gail de Joux has taken early retirement (from 1 August) due to ill health.

Charles Little is now a Fellow of the Australian Mathematical Society.

Robert McKibbin is now a Fellow of the NZMS.

Mike Hendy has been appointed to the editorial boards of Molecular Biology and Evolution and the New Zealand Journal of Mathematics.

Biographical notes on the late Professor Wolfgang Vogel have been added to the virtual museum of mathematicians maintained by the University of Halle. The website is http://www.mathematik.uni-halle.de/institute/optimierung /fb/vogel/#top

Chris Palliser has successfully completed all requirements for his PhD in mathematics. His thesis title is "A model for deep geothermal brines: State space description and thermodynamic properties". Chris was supervised by Robert McKibbin and Alex McNabb.

Igor Boglaev, Kee Teo, Feng-Ming Dong, Robert McKibbin, Mike Carter, Bruce van Brunt, and Gillian Thornley all gave talks at the Colloquium, with Mike Hendy and Gordon Knight giving invited lectures.

Meanwhile, Igor Boglaev, Robert McLachlan and Nicolas Robidoux were in Auckland, enjoying John Butcher's ANODE workshop, where Robert McLachlan gave a series of talks on geometric integration.

Robert McLachlan is leaving on sabbatical, to attend the workshop on Foundations of Computational Mathematics at the MSRI, Berkeley, from August to December.

Kathi Huber and Mike Hendy held a one day workshop, entitled "Buneman and Beyond", on 18 May, on the development of new analytic tools for representing signals in DNA and RNA sequences, particularly those based on the concept of the Buneman Graph. Speakers were Mike Hendy, Kathi

Huber, Dave Penny, Charles Little, and Pete Lockhart (Massey), Dave Bryant (Montreal), Liz Watson (Stockholm), Mike Steel (Canterbury), and Laszlo Szekely (South Carolina).

Glenda Anthony and postgraduate students Jan Savell and Margaret Walshaw attended the Mathematics Education Research Group of Australasia Conference, July 4-8, held at Surfers Paradise. Margaret and Jan both presented papers related to their postgraduate studies. Our congratulations to Jan who received an outstanding first-time presenter for her paper "Parent newsletters supporting mathemtics in the junior primary school".

Seminars

Margaret Morton, (University of Auckland), "Infinite Planar Graphs".

F M Dong, "Chromatic polynomials of graphs".

F M Dong, "Problems on chromatic polynomials of graphs".

Richard Brooks, (Institute of Technology and Engineering), "CELECT: scheduling of electricity usage in electric heaters".

Ian Yule, (Institute of Technology and Engineering), "Application of models for better decision-making in agriculture".

Harry Clark, Paul Newton, Ken Louie and Tracey Flux, (AgResearch), "Dynamical systems models for populations of pasture species".

Robert McLachlan

Institute of Information Science and Technology (Statistics)

Dick Brook retired at the end of July. Dick moved from his home town, Adelaide, to Massey via East Africa, Oklahoma and North Carolina arriving at Palmerston North in 1973. He replaced Jeff Hunter as Head of the Statistics Department in 1996. With the abolition of the Statistics Department at the beginining of this year, Dicks departure marks the end of an era. He and his wife Judy are staying in Palmerston North.

Greg Arnold

UNIVERSITY OF OTAGO

Department of Mathematics and Statistics

The first half of 1997 has had some high points; notably the arrival of two new lecturers, Dr Richard Barker and Dr David Tan, and two new senior teaching fellows, Dr Michael Albert and Ms Claire Cameron. The downside was the retirement of a long standing member of the Department, Mrs Janet Levy, who left in July.

From 1988 Dr David Tan has held a Fellowship and College Lectureship in applied mathematics at Churchill College, Cambridge and concurrently since 1991 also a research associate position at the Centre for Atmospheric Science, at the Department of Applied Mathematics and Theoretical Physics, University of Cambridge. His interests are in fluid dynamics and mathematics modelling. Dr Tan joins the Department as a lecturer in applied mathematics.

Dr Richard Barker took up his appointment as lecturer in statistics in February this year. He is well known for his research and consulting in ecological statistics and for his contributions to the theory of the analysis of mark-recapture data. He began his career in 1985 as a field officer with the Wellington Acclimatisation Society, and then from 1989 to 1992 worked as a researcher at the Patuxent Wildlife Research Center in Laurel, Maryland, before returning to New Zealand to complete a PhD in Statistics at Massey University.

Mrs Austina Clark, a senior teaching fellow, achieved her PhD in Statistics in June. The thesis title is "Spatial Designs for Field Experiments" and was supervised by Dr David Fletcher.

Department Open Day:

As part of the International Science Festival held in Dunedin recently, the Department of Mathematics and Statistics held an Open Day on July 10. Over a 6-hour period about 200 visitors (from primary-schoolers to pensioners) sampled our computer software, looked at posters describing our current research, and tested their wits on a variety of puzzles.

Staff Travel/Conferences:

In January/February of this year, Robert Aldred spent five weeks at Vanderbilt University in Nashville visiting with Professors Mike Plummer, Mark Ellingham and Xiaoya Zha. The time spent was very productive both from the point of view of results obtained and interesting projects to continue. It is hoped that a means can be found to keep up the collaborative link with Vanderbilt.

Coralie Daniel, a postgraduate student in the Department, was one of 70 invited participants who attended an international ICMI Study Conference at Luminy, near Marseilles in France in April. The theme of the conference was the role of the history of mathematics in the teaching and

learning of mathematics. Coralie was invited because of her work in identifying ways in which students with diverse educational requirements can be supported in the classroom. She will be a contributor to two chapters of the book, one focusing on the philosophical, interdisciplinary and multicultural aspects of the history of mathematics, and the other on describing ways in which the history of mathematics can be used in support of diverse educational requirements. The book will be launched at ICME in Japan in 2000.

Professor Derek Holton spent two weeks in June/July in Chichester, England, working with Afzal Ahmed, Honor Williams, Christine Hill, Jean Flower and Warwick Evans on various areas of mathematics education, including peer tutoring. He then attended the Combinatorial Mathematical Society of Australia Conference in Brisbane where he presented a paper entitled "Planar Graphs, Regular Graphs, Bipartite Graphs and Hamiltonicity". At this conference he was elected President of the CMSA.

Apart from matters Antarctic, the Head of Department, Vernon Squire, has been securely chained to his desk of late, worrying about such administrative matters as how to cope with about 90 extra EFTS caused by a new 100-level biostatistics paper. Although he was scheduled to participate in the 14th International Ice Symposium, held at Clarkson University from 27-31 July, Vernon chose to present his jointly authored papers in absentia, by use of holographic replication techniques that reformed his physical being into a post doctoral fellow called Dr Tony Dixon. Vernon did attend the ANZIAM meeting in Coolangata earlier in the year, where he presented a paper entitled "Applying Mathematics when its Cold", and he took part in the Antarctic Futures Workshop as a Panel Member. Along with many, he has expressed some skepticism about the latter, based on the Foresight Saga, as he contends that in his experience New Zealand science policy changes on a time scale that is an order of magnitude less than the time scales being discussed.

Visitors:

Dr Burke Grandjean from the University of Wyoming was a visitor to the Department from February to July. During this time he taught a 400-level Statistics paper on Structural Equation Modelling.

Dr Jeff Rosoff of the Gustavus Adolphus College in St Peter, Minnesota spent part of his sabbatical leave working in the areas of algebraic geometry / commutative algebra. Unfortunately Dr Rosoff had to return to his home earlier

than expected because a cyclone had passed through his city creating massive destruction. He will return for a short visit in August.

Professor Fengsu Chen has extended his stay and is working with the applied mathematicians in the Department. His main area of interest is chaos theory.

Seminars:

Gareth Hegarty, (University of Auckland), "Existence of Solution and Control of Nonlinear Beams".

Professor John M Howie, (University of St Andrews, Scotland), "A problem in algebra and a problem in number theory".

Joel Spencer, (Courant Institute of Mathematical Sciences), "The Probabilistic Method of Paul Erd^s".

Ross Vennell, (Department of Marine Science), "Dynamics of Tidal Headland Eddies".

Dion Burns, "Arnold's Stabillity Method: A Hamiltonian Approach to Fluid Dynamics".

Marcus Cambray, "Hidden Markov Models".

Dave Wilson, "Skew Polynomial Rings".

Carl James Schwarz, (Simon Fraser University, Canada), "Using the Robust Design to Estimate Temporary Emigration"

Unique Role for History Graduate in Mathematics Education Study Conference

As reported in the Otago section of this issue's news, Coralie Daniel, a postgraduate student in the Department of Mathematics and Statistics, was one of 70 invited participants at an international ICMI Study Conference at Luminy, near Marseilles in France in April. The conference was held to write a book, to be launched at ICME, in Japan in 2000, on the use of the history of mathematics in the teaching and learning of mathematics.

The major theme of Coralie's research has been to identify types of mathematicians, with an emphasis on mathematically talented and gifted students. Her work has already been well received at a number of overseas conferences. Her particular knowledge concerning the interaction between classroom experiences and the development of gifted mathematicians, on the one hand, and the relationships of visualization and learning aptitudes, on the other, were the areas that gained her the invitation to participate in the Study Conference.

Coralie's background in history (she graduated MA at Otago in 1964) made her role at the conference unique: the other participants were mathematicians who had developed an interest in history, whereas she was a history graduate who has developed an expertise in mathematics education.

This meant she made a particular contribution to those aspects of the discussions that depended upon a good understanding of what history itself is actually about.

Coralie was supported financially at the conference by the Division of Sciences, HEDC, and the Department of Mathematics and Statistics at Otago. Her attendance meant that the University of Otago will have been represented at the two international ICMI Study Conferences held in 1998.

The second, on tertiary mathematics education, is being convened by Professor Derek Holton and will be held in Singapore in December. Both of these study conferences will contribute significantly to the ideas and material discussed at ICME in Japan in July, 2000.

ICMI Study on the Teaching and Learning of Mathematics at University Level

The International Commission on Mathematical Instruction is currently holding a Study on the Teaching and Learning of Mathematics at University Level. An important part of the Study will be a working conference in Singapore in December this year. A large number of submissions were received from all over the world and reviewed by an international panel. As a result three New Zealand submissions were accepted. These will be presented in Singapore by Glenda Anthony (Massey), Bill Barton (Auckland) and Sergiy Klymchuk (Waikato).

The Study is potentially of great importance as it will draw together experts in tertiary education from a large number of countries. The results of the Study will be disseminated widely and could have positive implications for university mathematics teaching over the next 20 years.

Derek Holton didn't realize what he'd let himself in for when he took on the job of Chair of the International Programme Committee. Most of the work seems to be over now that control of the conference is gradually being

taken over by the Local Organizing Committee. However, he suggests that if such a job is offered to you, you make sure that you have plenty of time and an efficient secretary (as he has) to back you up.

The plenary speakers at the conference are

Claudi Alsina (Spain).; "Why the professor must be a stimulating teacher. Towards a new paradigm of teaching mathematics at university level".

Michele Artigue (France). "What can we learn from educational research at university level?"

Bernard Hodgson (Canada); "A summary of the conference proceedings".

Alan Schoenfeld (Umited States of America); "What do researchers in undergraduate mathematics education do - and what claims can they make, on what grounds?"

Lynn Arthur Steen (United States of America); "Post secondary mathematics: challenges for the new century."

There will also be the following panels and working groups.

Trends in Curriculum; Joel Hillel (Canada)

Mathematics and Other Subjects; Jean-Pierre Bourgnignon (France)

Practical Aspects of Teaching; John Mason (England)

Mass Education; Nestor Aguilera (Argentina); and Hans Wallin (Sweden)

Technology; Rosalind Phang (Singapore)

Preparation of University Teachers; Harvey Keynes (United States of America)

Preparation for Professions; Sol Garfunkel (United States of America)

Assessment; Ken Houston (Ireland)

Future of Research in Tertiary Mathematics Education; Annie and John Selden (United States of America)

Derek will present a report of the conference in the first Newsletter in 1999. In the meantime you may get further information by browsing on the web site http://www.nie.ac.sg:8000/~wwwmath/icmi.

Vernon Squire

UNIVERSITY OF WAIKATO

Department of Mathematics

Congratulations to Ingrid and Matt Melchert on the birth of their baby son, Richard Alexander, on 11 July. He weighed 8lb 1oz. All are well. Ingrid will be on leave for the rest of the year.

Many readers will know by now that Douglas Bridges will be leaving us at the start of next year to take up a Chair at the University of Canterbury. We wish him well in his new position. Because of his departure, we are currently advertising for a lecturer who we hope will be able to commence work early next year.

Nan Zhu, who completed his DPhil here last year, has recently joined us as a Research Fellow. He will be working with Kevin Broughan on techniques to produce a better university timetable.

In the past few months, a number of members of the department have been able to make trips overseas. Douglas went to Florida for Fred Richman's 60th birthday conference. Ernie Kalnins was away for nearly a month from mid-June and attended conferences in Russia and Hobart as well as doing joint research in Stuttgart. His postdoc, Graeme Williams, has recently returned from a relativity conference in Sydney. Another postdoc, Paul Watson, has just come back from a conference on magnetic helicity in Boulder, Colorado. Later this month, Douglas and Kevin will be going to the 1998 International Congress of Mathematicians in Berlin.

Ian Craig has now finished his study leave and is back to the grind. The other Ian, Ian Hawthorn, has started his leave and will be spending some time at ANU in Canberra.

Stephen Joe had James Lyness (Argonne National Laboratory) visit him for two weeks in April. They continued

their research work on lattice rules.

Seminars

L. Woods (Balliol College, Oxford), "How sunspots are generated".

V. Arya (University of Akron), "Numerical (finite-element) solution technologies for stress/life analyses of structural engineering components".

L. Dediu. "A Hahn-Banach for ultraweakly continuous linear functionals".

M. Reddy, "A unique form for special lattice rules".

S. Klymchuk (CSMTER), "Asymptotic methods for differential inclusions with a small parameter and their applications in optimal control theory".

T. Soboleva (AgResearch), "Solitary excitations in an antiferromagnetic chain. Discrete versus continuous domain wall".

D. Bridges "Constructive Hilbert space operator theory".

Stephen Joe

Department of Statistics

Several members of the department have recently travelled overseas to conferences. Bill Bolstad was a participant at the 6th Valencia International Meeting on Bayesian Statistics, held in Valencia, Spain, in June and Lyn Hunt attended the 1998 Joint Annual Meeting of the Classification Society of North America and Pyschometric Society, held at the University of Illinois, Urbana, also in June. In July, Nye John and Murray Jorgensen, together with Harold Henderson (an Honorary Lecturer) and Samuel Manda (a DPhil student), attended the 14th Biennial Conference of the Statistical Society of Australia, held at Jupiters on the Gold Coast.

Judi McWhirter has returned from leave. During her sabbatical she spent some time at Invermay, Dunedin working with Roger Littlejohn on fitting models to Pulsatile data via the EM algorithm. Ray Littler is currently visiting Larry Weldon at the Department of Mathematics and Statistics at Simon Fraser University, Burnaby, BC, Canada.

The department has recently advertised a position for a Lecturer or a Senior Lecturer. It is hoped that an appointment will be made to commence at the beginning of the 1999 academic year.

Recent visitors to the department have included Emlyn Williams from CSIRO, Australia, working with Nye John and Dave Whitaker, and also Roger Littlejohn, working with Judi McWhirter. Also visiting was Professor Fred Smith, of Southampton University, who gave a seminar to the department.

Seminars

Professor Fred Smith (Southampton University), "100 Years of Survey Sampling".

Gareth Ridall, "A cross-curricula contextual approach toward teaching of data analysis".

Professor Nye John, "CycDesigN: Future directions".

Judi McWhirter

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CONFERENCES

* * * 1998 * * *

September 7 - 12 (Mission Beach, Queensland) International Conference on Partial Differential Equations and Related Topics

email: pde98@maths.anu.edu.au

September 28 - October 1 (Sydney) 1998 Annual Meeting of the Australian Mathematical Society

Contact R Howlett, School of Mathematics and Statistics, University of Sydney.

email: R.Howlett@maths.usyd.edu.au

PRELIMINARY NOTICE

Summer School on Differential Equations in Geometry and Physics 8 -- 11 of December 1998 There will be a summer school to bring together postgraduate students and researchers in this general area at the University of Adelaide from Tuesday 8 to Friday 11 of December 1998. The aim is to encourage awareness of interrelated ideas in geometry and mathematical physics and, in particular, to allow students an opportunity to learn about research being carried out in these areas.

Venue: University of Adelaide

Speakers include:

Professor Michael G. Eastwood Dr Nalini Joshi Dr Michael K. Murray Dr Mathai Varghese

Limited financial support will be available for postgraduate students from interstate (with letter of recommendation from their supervisor).

Organizers:

Adam Harris Nalini Joshi

Those wishing to attend should send the following expression of interest by October 31st to

Adam Harris

Department of Pure Mathematics

University of Adelaide

S.A. 5005

Email: aharris@maths.adelaide.edu.au

* * * 1999 * * *

January 18 - 21 (Auckland) DMTCS '99 Discrete Mathematics and Theoretical Computer Science) and CATS '99 (Computing: The Australasian Theory Symposium)

Contact Bakh Khoussainov, Department of Computer Science, University of Auckland, Private Bag 92019, Auckland, New Zealand.

email: bmk@cs.auckland.ac.nz

home-page: □ HYPERLINK http://www.tcs.auckland.ac.nz/~acsw99/ □□http://www.tcs.auckland.ac.nz /~acsw99/□

February 7 - 11 (Mollymook, New South Wales) ANZIAM 99 (The 35th Australian Applied Mathematics Conference)

Contact Rod Weber

email: r-weber@adfa.oz.au

home-page: □ HYPERLINK http://www.uow.edu.au/cionferences/anziam99/ □□http://www.uow.edu.au /conferences/anziam99/□

February 7 - 11 (Mollymook, New South Wales) (Combustion Meeting in Honour of Professor Brian F Gray.

Contact Geoff Mercer

email: g-mercer@adfa.oz.au

home-page: http://www.ma.adfa.oz.au/Events/Conferences/BFG meeting.html

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CENTREFOLD

John Fauvel

This year's New Zealand Mathematical Society Visiting Lecturer, John Fauvel, is a historian of mathematics from the Open University in the UK.

He will arrive in Auckland on 26 September, and spend the next three weeks touring through the universities in a southerly direction.

The Open University teaches students who are studying part-time, from home, and has built up a strong reputation for the quality of its teaching materials designed to be studied at a distance. John brings on his visit to New Zealand a great enthusiasm for mathematics education at all levels, and the use of history of mathematics within that teaching and learning process. This is the first time that the New Zealand Mathematical Society Visiting Lecturer has been a specialist in the history of mathematics.

A Scot, born in Glasgow, John was educated in mathematics at the universities of Essex and Warwick before joining the Open University to help in an area which the University (then in its early years) was seeking to develop, the history of mathematics. Since then he has worked on mathematics as well as interdisciplinary courses. It was for an Open University course on the history of mathematics that John produced, with his OU colleague Jeremy Gray, one of the leading source-books in the field, "The history of mathematics: a reader" (Macmillan 1987).

Other books he has worked on include "Let Newton be!" and "Möbius and his band" (both Oxford University Press) and recently a collection of papers on using history in the mathematics classroom and lecture theatre called "Learn from the Masters!" (a quotation from Niels Henrik Abel), published by The Mathematical Association of America in 1995. Currently he is working on a history of mathematics at the University of Oxford over the past 800 years, and this is the subject of one of John's talks in New Zealand about how different Oxford professors (in particular, John Wallis in the 17th century, J J Sylvester in the 19th century, and G H Hardy earlier this century) tackled in rather constrasting ways the issues of promoting research activity and building up the research strengths and reputation of the University while sustaining undergraduate teachibng".

John's last visit to New Zealand, in 1995, was to make some films for the Open University's foundation mathematics course, having returned from an earlier visit to insist to his UK colleagues that every possible way in which mathematical modelling is used to understand the world can be found in New Zealand! The films include the modelling work of Colin Fox (University of Auckland), David Fletcher (University of Otago), and Dion Burns (University of Otago), an interview with statistician Wiremu Solomon (University of Auckland), and include, too, the 1858 Maori arithmetic which John found in the Auckland Public Library on his previous visit, thanks to the help of New Zealand's historian-in-residence Garry Tee and Auckland mathematics educator Bill Barton.

John is a former President of the British Society for the History of Mathematics, a world-wide organisation (with several NZ members) despite its name, and has also served on the Executive

Committee of the International Commission for the History of Mathematics. Another body through which John has been working is the International Study Group on the Relations between History and Pedagogy of Mathematics, and he has recently taken the role of co-chairing an international study on 'The role of the history of mathematics in the teaching and learning of mathematics' which is due to be delivered to the International Congress of Mathematics Education in Tokyo in 2000. (A subsequent study in the same series, on "'Teaching and learning mathematics at university level"', is currently in progress, chaired by Derek Holton of the University of Otago.)

In his forthcoming lecture tour of New Zealand, John will talk about ways in which historical resources and insights can be drawn upon to strengthen mathematics education at all levels, as well as sharing some of the results of his recent historical researches. One of his proposed talks, for example, will explore the roots of a fashionable modern concern such as chaos theory in traditions of problem-solving going back four thousand years, in a line stretching through Newton (and his youngr colleague Joseph Raphson) back to north African engineers and Babylonian scribes.

Another of John's talks reflects on the historical fact that some of the most productive and insightful mathematicians, from John Walls and Isaac Newton to Andrew Weil (who died recently), have been those who paid most attention to the history of the subject. John's broader educational claim is that one purpose of history is to help us understand present situations better, and that history of mathematics provides a means of pulling traditions together and avoiding further cultural fragmentation".

NEW ZEALAND MATHEMATICAL SOCIETY NOTICES

PRESIDENT'S REPORT 1997-98

This report covers the period from the last New Zealand Mathematical Society Annual General Meeting in July 1997 to the end of June 1998.

VISITING LECTURERS

The New Zealand Mathematical Society Visiting Lecturer for 1998 will be John Fauvel, a mathematical historian from the Open University, UK, who will tour the country during 26 September - 19 October. We have secured a contribution of $1250 from the NZ Lottery Grants Board to support this visit (a source of funding that will cease to exist this year).

The Forder Lecturer for 1999 will be the distinguished mathematical physicist Sir Michael Berry FRS, who will visit for a month from mid-March. We are currently seeking support for this from the British Council. The visit is being coordinated by the New Zealand Mathematical Society Secretary, Stephen Joe.

ACCREDITATION

The following members were admitted to Fellowship of the New Zealand Mathematical Society:

Professor Bruce Christianson, Professor Marston Conder, Professor David Gauld, Associate Professor Dean Halford, Dr Charles Little, Dr Gillian Thornley, and Associate Professor Mavina Vamanamurthy.

At its next Council meeting in July, further recommendations from the Accreditation Committee will be considered, including the first application for the status of Accredited Membership of the Society (MNZMS)

NEW ZEALAND MATHEMATICAL SOCIETY RESEARCH AWARD

At the 1997 Mathematics Convention in Auckland, a Research Award was made to Professor Peter Lorimer for "a lifetime of achievements in mathematical research, especially for his contributions to the application of group theory in geometry and combinatorics, and to the structure and classification of finite projective planes".

The outcome of the 1997-8 Award round will be announced at the Colloquium Dinner 7 July.

AITKEN PRIZE

This prize, for the best contributed talk by a student at the annual Mathematics Colloquium, was won jointly in 1997 by Robyn Curtis and Louise Parsons from the University of Auckland.

I am grateful to Wilf Malcolm, Robert McKibbin, and Gillian Thornley for agreeing to form the judging panel for the 1998 prize.

NZ JOURNAL OF MATHEMATICS

The Journal Committee indicated earlier this year that an increase in the subscription charged to New Zealand Mathematical Society members was needed to cover costs. I took the decision that such an increase could not be made without consulting the membership. Subsequently, the Council agreed to make a grant to the Journal for this year of $2,000, to cover both the increase that would have been applied to the subscription, and a contribution of the kind that the Society has typically made in previous years.

The Council is aware that there is dissatisfaction amongst a number of members with the present arrangement, established in 1992, that makes purchase of the Journal a compulsory condition of membership of the Society. This will be reviewed at the next Council meeting, and the issue will be placed before the AGM.

It needs to be borne in mind that the Journal is "owned" by our Society. It is published under a joint agreement between the New Zealand Mathematical Society and the Auckland University Mathematics Department, and is an effective contribution to the general aims of the New Zealand Mathematical Society. This commitment will require the Society to continue to provide the Journal with the kind of financial support it has given until now by way of annual grants.

FINANCIAL GRANTS

Council made the following grants between 1 July 1997 and 30 June 1998:

New Zealand Journal of Mathematics 2,000

New Zealand Mathematics Colloquium 1,500

Research grants 750

Student travel grants 2,500

Mathematical Olympiad 1,000

MARSDEN FUND

The Government's Budget announcement in May contained disappointing news for the Marsden Fund: its earlier projected increase has not been sustained, and basic research expenditure is held at 1997-98 levels. Moreover the linkage between the Public Good Science Fund (PGSF) and the Marsden Fund is uncoupled (the intention was to maintain a relationship of 9:1 between the two funds).

I believe it is widely recognised that the introduction of Marsden funding has had an extremely beneficial impact on research in the mathematical sciences in this country. For instance, in 1997 new grants worth altogether about $1.35M over three years were made to four Society members (Professors Butcher and Hendy, Drs Pestov and Steel). In addition Marsden funding continues to support the popular Summer Workshops organised by Auckland mathematicians.

The limited size of the Fund has prevented many worthwhile projects from being selected for financial support. Unfortunately, this may have the effect of discouraging some people from applying, which would in turn have the effect of reducing the overall level of funding in our discipline area (because the level of funding of an area is roughly in proportion to the amount applied for in that area).

I would encourage members to continue to seek grants from the Marsden Fund, and to convey to Government that there is considerable unsatisfied demand for support for excellent research in the mathematical sciences.

ROYAL SOCIETY HONOURS FOR MEMBERS

Congratulations to Professors Gaven Martin and George Seber, who were elected Fellows of the Royal Society of New Zealand, and Professor David Gauld, who received a New Zealand Science and Technology Medal, presented by the Governor-General, for "his contributions to mathematical research in geometric topology, for his administration, encouragement and support of teaching and research in the mathematical sciences (both at the University of Auckland and at the national level over three decades) and for his support of research generally."

ACKNOWLEDGEMENTS

We are indebted to the Newsletter Editor, Prof Mike Hendy, the Membership Secretary, Dr John Shanks, and the Visitor Information Coordinator, Dr David

McIntyre, for the valuable service they have continued to perform.

Two Councillors are completing their terms of office this month: Mike Hendy and Stephen Joe. I thank them, and the other members of Council, for their contributions to the running of the Society's affairs.

Rob Goldblatt, 30 June 1998

NEW ZEALAND MATHEMATICAL SOCIETY RESEARCH AWARD

CALL FOR NOMINATIONS 1998/99 ROUND

This annual award was instituted in 1990 to foster mathematical research in New Zealand and to recognise excellence in research carried out by New Zealand mathematicians.

A New Zealand Mathematical Society Research Award for 1998 was made to:

Jianbei An (University of Auckland) "for his contributions to the study of modular representations of groups, in which he has established his leading expertise through a combination of deep understanding, ingenuity and technical skill".

The award for 1998 was announced at the 1998 Mathematics Colloquium in Wellington in early July. Other recipients to date have been John Butcher and Rob Goldblatt (1991), Rod Downey and Vernon Squire (1992), Marston Conder (1993), Gaven Martin (1994), Vladimir Pestov and Neil Watson (1995), Mavina Vamanamurthy and Geoff Whittle (1996), and Peter Lorimer (1997).

Call for nominations: 1998/99 round

Applications and nominations are invited for the New Zealand Mathematical Society Research Award for 1999. This

award will be based on mathematical research published in books or recognised journals within the last five calendar years: 1994-98.

Candidates must have been residents of New Zealand for the last three years.

Nominations and applications should include the following:

(1) Name and affiliation of candidate

(2) Statement of general area of research

(3) Names of two persons willing to act as referees

(4) A list of books and/or research articles published within the last five calendar years: 1994-98

(5) Two copies of each of the five most significant publications selected from the list above

(6) A clear statement of how much of any joint work is due to the candidate.

A judging panel shall be appointed by the New Zealand Mathematical Society Council. The judges may call for reports from the nominated referees and/or obtain whatever additional referee reports they feel necessary. The judges may recommend one or more persons for the award, or that no award be made. 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) around the time of the AGM of the Society in 1999.

All nominations (which should include also the written consent of the candidate) and applications should be sent by 31 October 1998 to the New Zealand Mathematical Society President, Rob Goldblatt, at the following address:

Professor Rob Goldblatt

School of Mathematical and Computing Sciences

Victoria University of Wellington

P.O. Box 600

Wellington

Please consider nominating any of your colleagues whose recent research contributions you feel deserve recognition!

MINUTES OF THE FORTY FIRST COUNCIL MEETING

SUNDAY 5 JULY, 1998.

The meeting was held at the Victoria University of Wellington and began at 12.09 pm.

PRESENT: R. Goldblatt (Chair), R. Beatson, S. Joe, V. Kirk, and M. Roberts.

APOLOGIES: D. Bridges, M. Hendy, D. McCaughan, R. McLachlan.

1. Minutes of 40th Council meeting: It was moved from the Chair that the minutes be approved. The motion was carried.

2. Matters arising from the minutes: There were no matters arising.

3. Formal ratification of earlier decisions: It was moved from the Chair that the following decisions made by email be ratified:

(i) A grant of $500 made to Dr B. Barton.

(ii) A grant of $2000 made to the New Zealand Journal of Mathematics.

The motion was carried.

4. Treasurer's report:

(a) An oral report was given by the Treasurer. Overall, the Society was in a good financial state with the 1997 financial year showing a satisfactory surplus.

(b) It was moved (Beatson/Kirk) that the budget and audited accounts be received. The motion was carried.

(c) The only book still being traded was the book on linear algebra and it would be expected that profits from book sales would continue to decline in the future.

(d) Bigger issues of the Newsletter in 1997 explained the increased costs in its publication compared to the costs in 1996.

(e) The Treasurer was thanked for his excellent performance as Society Treasurer in the past year.

(f) The budget prepared by the Treasurer was discussed.

5. Membership Secretary's report:

A report from Dr John Shanks was received. The Council thanked him for his work and for being willing to carry on in the position of Membership Secretary.

6. Nominations to Council for 1998:

(a) At the close of nominations, the nomination of Professor Graeme Wake had been received for Incoming Vice-President and the nomination of Dr Stephen Joe had been received for a vacancy on Council.

(b) There was another vacancy on Council for which no nominations had been received. Nominations would be called for at the AGM.

7. Recommendation of the Accreditation Committee:

It was moved from the Chair that the recommendations of the Accreditation Committee be ratified. The motion was carried. Professors Robert McKibbin and Vernon Squire became Fellows of the Society, while Beverley Horn became the first Accredited Member of the Society.

The meeting adjourned for lunch from 1.09-2.19 pm.

8. Requests for financial assistance:

(a) A request from the organizers of the 1998 Colloquium for another $400 to support students attending the Colloquium was granted.

(b) The other applications for financial assistance were considered. After some discussion, the following grants were approved.

Jiling Cao $600

Coralie Daniel $500

Kerry Richardson $400

Rick Beatson, Shayne Waldron, and Keith Unsworth $500

The other application was declined as it was desirable to have as many people funded as possible and the applicant had received funding the previous year.

Noted in discussion: It would be useful to redesign the application form so that some more detailed itinerary information was given. Also, it might be useful to put a limit on the number of pages of supporting documentation that could be provided.

9. NZ Journal of Mathematics:

(a) The issue of the compulsory subscription to the NZ Journal of Mathematics for Ordinary Society members was discussed.

(i) It would be recommended to the AGM that "the annual subscription for ordinary membership for 1999 remain at $32 / $30". In addition, a motion would be put forwardthat "a subscription to the NZ Journal of Mathematics be optionally offered to New Zealand Mathematical Society members, concurrently with their New Zealand Mathematical Society subscription, at a rate to be set by the NZJM Committee".

(ii) If the above motion was passed at the AGM, then an extra clause, Clause 10, given by "The NZJM Committee shall set subscription rates, with reduced-rate subscriptions being offered to New Zealand Mathematical Society

members (concurrently with their NZMS subscription)" would be added to the Publication Agreement.

(b) The report from the Editor of the NZ Journal of Mathematics was received.

(c) The 1998/99 budget included a grant of $1000 to the NZ Journal of Mathematics.

10. New Zealand Mathematical Society Visiting Lecturer:

(a) The 1998 Visiting Lecturer would be John Fauvel of the Open University. His visit was being arranged by Rob Goldblatt. The Lecturer would visit from late September to early October starting from Auckland and moving southwards. A grant of $1250 had been received from the Lotteries Board to help fund the visit.

(b) At the July 1997 Council meeting it was decided that the New Zealand Mathematical Society Visiting Lecturer would normally be chosen every alternate year, in alternation with the Forder Lecturer. For this reason, there would not normally be a Visiting Lecturer in 1999.

11. Forder Lecturer:

(a) An application for financial support for the 1999 Forder Lecturer, Professor Sir Michael Berry, had been made to the British Council.

(b) Stephen Joe gave a brief report of the arrangements made so far.

12. New Zealand Mathematical Society Research Award 1998:

A nomination for a research award had been received. It was moved from the Chair that this award be granted. The motion was carried.

13. Aitken judging panel:

The panel would consist of Professors Wilf Malcolm and Robert McKibbin, and Dr Gillian Thornley.

14. 1999 Colloquium:

This would be held at the University of Canterbury. Rick Beatson gave the dates of the only two possible periods during which the 1999 Colloquium could be held.

15. General business:

(a) It was agreed that Garry Tee should be awarded honorary life membership of the Society.

(b) A draft president's report and draft AGM agenda were circulated for feedback.

(c) The Number 2 account of the Society would be closed as it had not been used for a number of years.

(d) Council agreed that Mick Robert would carry on as Treasurer for another year. Council also agreed that Stephen Joe would carry on as Secretary for another year if he was re- elected for another term on Council.

The meeting closed at 3.34 pm.

MINUTES OF THE TWENTY-FOURTH ANNUAL GENERAL MEETING

MONDAY 6 JULY, 1998.

The meeting was held at the Victoria University of Wellington and began at

6.01 pm.

PRESENT: R. Goldblatt (Chair), D. Alcorn, C. Atkin, R. Beatson, K. Broughan, P. Donelan, W. Halford, J. Harper, A. Jaballah, S. Joe, D. McIntyre, A. McInnes, R. McKibbin, A. Parshotam, M. Roberts, A. Swift, S. Taylor, G. Tee, G. Wake, S. Woodward.

APOLOGIES: D. Bridges, J. Butcher, M. Conder, G. Thornley.

1. MINUTES OF TWENTY-THIRD ANNUAL GENERAL MEETING:

It was moved from the Chair that the minutes of the previous meeting be accepted as a true and accurate record. The

motion was carried.

2. MATTERS ARISING FROM THE MINUTES:

There were none.

3. PRESIDENT'S REPORT:

The President's report was delivered to the meeting and will be published in the New Zealand Mathematical Society Newsletter and made available on the New Zealand Mathematical Society Web pages.

Points to note:

(i) A joint meeting between the Australian Mathematical Society and the American Mathematical Society would be held on 12-16 July, 1999. Professor M. Conder, along with Professor G. Martin and Dr E. O'Brien would be offering a special session on discrete groups. There was also a possibility that Professor R. Downey would offer a special session on complexity theory.

(ii) It was suggested that some of the participants at that joint meeting might wish to attend the 1999 Colloquium.

(iii) At the Council meeting held the previous day, Professors R. McKibbin and V. Squire become Fellows of the Society while B. Horn became the first Accredited Member of the Society.

4. TREASURER'S REPORT:

The Treasurer's report was delivered to the meeting. It was moved from the Chair that the report be received. The motion was carried.

Points to note:

(i) Book sales were tapering off.

(ii) The interest received was down on the previous year because of the timing of interest payments.

(iii) The income received for the Visiting Lecturer consisted of contributions from the mathematics

departments which was then disbursed to pay for the Visiting Lecturer costs.

(iv) The Royal Society subs of $1389 arose from an oversight on the part of the RSNZ who had not billed the Society for a number of years. The normal sub is $562.50 (incl. GST).

(v) The accumulated funds were about $4000 more than the previous year.

(vi) The operating expenses of the Society came from membership subs while grants and awards came from interest received.

5. MEMBERSHIP REPORT:

A report from the Membership Secretary, Dr J. Shanks, was circulated. He was thanked for his work in this position.

6. MEMBERSHIP FEES AND THE NZ JOURNAL OF MATHEMATICS:

The following three motions were moved from the Chair.

(1) That the annual subscription for ordinary membership for 1999

remain at $32 / $30.

(2) That a subscription to the NZ Journal of Mathematics be optionally offered to New Zealand Mathematical Society members, concurrently with their New Zealand Mathematical Society subscription, at a rate to be set by the NZ Journal of Mathematics Committee.

(3) That the Society agrees to the amendment of the NZ Journal of Mathematics Publication Agreement by the addition of the extra clause "The NZ Journal of Mathematics Committee shall set subscription rates, with reduced-rate subscriptions being offered to New Zealand Mathematical Society members (concurrently with their New Zealand Mathematical Society subscription)".

Discussion ensued on these motions and the following points were noted:

(i) The annual membership fee had not changed since 1991.

(ii) It should be borne in mind that the Society was committed to the Journal and so had an obligation to contribute financially. An amount of $1000 had been budgeted for the coming year.

(iii) On behalf of the NZ Journal of Mathematics Committee, D. Alcorn mentioned that the number of New Zealand Mathematical Society subscribers was not crucial as the Journal was supplied at cost. The Committee was relaxed about decoupling the Journal sub from the New Zealand Mathematical Society membership sub. Because of the fixed costs involved in producing the Journal, a smaller print run would probably not make much difference in the cost per copy of the Journal.

(iv) It was not clear whether making the Journal optional to New Zealand Mathematical Society members would broaden or shrink the interest areas of the Journal. It was pointed out that the Editorial Board was wide-ranging in its research interests.

All three motions were carried.

7. ELECTION OF INCOMING VICE-PRESIDENT AND TWO COUNCIL MEMBERS:

(a) The only nomination received for Incoming Vice-President was that of Professor G. Wake. In the absence of other nominations from the floor, the Chair declared nominations closed and Professor Wake duly elected. This was greeted with acclamation.

(b) Though there were two vacancies on Council, only the nomination of Dr S. Joe had been received. He was declared duly elected.

(c) Professor D. Bridges had finished his term as Immediate Past President and had indicated that he would be willing to serve on Council. He was nominated (Goldblatt/Wake) for the vacancy and duly elected.

(d) On the new Council, Dr M. Roberts would continue for another year as Treasurer while Dr S. Joe would continue for another year as Secretary.

(e) As the term of Assoc.-Professor R. Beatson on Council ended in 1999 and he would not be eligible to stand again, someone at Canterbury would need to be found who would be willing to act as Secretary when Professor G. Wake became President.

8. APPOINTMENT OF AUDITORS:

It was moved (Roberts/Wake) that the current auditors, McKenzie McPhail (4th floor, Farmers Mutual House, 68 The Square, Palmerston North), be reappointed for another year. The motion was carried.

9. NEW ZEALAND JOURNAL OF MATHEMATICS REPORT

The Editor's report was circulated. It was noted that Professor J. Butcher would be replaced as Editor by Professor G. Martin.

10. New Zealand Mathematical Society Visiting Lecturer:

(a) The 1998 Visiting Lecturer would be John Fauvel of the Open University.

His visit was being arranged by Rob Goldblatt. The Lecturer would visit from late September to early October. A grant had been received from the Lotteries Board to help fund the visit. However, this fund had now closed down and so would not be available in the future.

(b) There were no current plans to have a Visiting Lecturer in 1999.

(c) Council had not yet considered the possibility of setting up a scheme in which a newly-appointed member of staff in a New Zealand institution did a tour in the years when there was a Forder Lecturer.

11. 1999 FORDER LECTURER:

(a) An application for financial support for the 1999 Forder Lecturer, Professor Sir Michael Berry, had been made to the British Council.

(b) Dr S. Joe gave a brief report of the arrangements made so far.

12. GENERAL BUSINESS:

(a) There was nothing to report from the Royal Society.

(b) The report of the MoRST review of the mathematical sciences had not yet been released. Professor D. Vere-Jones would give an update on the situation during the Colloquium.

The meeting closed at 6.38

1999 MATHEMATICS SUMMER SCHOOL

You are invited to participate in the next of the now traditional Mathematics Summer Schools which takes place in New Zealand from 2 to 10 January 1999. This time the school will be in Raglan, a small resort on the west coast of the North Island, about 160km from Auckland.

The 1999 Summer School will be dedicated to Harmonic Analysis and Spectral Theory of Differential Operators. Preparatory lectures organized by the Department of Mathematics of the University of Auckland cover the elements of Complex Analysis, Banach Spaces, the Theory of Hardy classes and the Shift Operator, including the description of Invariant Subspaces and the Theory of Functional models of Contractions and Dissipative Operators. We also cover the elements of Differential Equations and Spectral Analysis of Selfadjoint and Nonselfadjoint Differential Operators and Scattering Theory, especially the Lax-Phillips version of Scattering Theory, and Resonance Scattering.

Originally the term "harmonic analysis" was used for a collection of ideas and

methods connected with the problems of

approximating functions by linear combinations of exponentials. Modern harmonic analysis is an interplay of functional analysis, operator theory, spectral theory and function theory related to the theory of the shift operator in the unit disk or upper-half plane. Many problems of operator theory have a function theoretical interpretation and conversely some important problems of function theory may be interpreted in terms of the spectral theory of operators.

The aim of our school is to introduce participants to modern problems and methods of the Spectral Theory of Nonselfadjoint Operators and Resonance Scattering Theory for Periodic Differential Operators, which incorporate both Harmonic Analysis and Topology on Riemann surfaces with the Geometry of the corresponding Hilbert Spaces. We also plan to cover some interesting applications of Spectral and Scattering Theory, including the Spectral Theory of Operators generating the averaged Dynamics on a Markov Background and some mathematical problems of the Design of Nanoelectronic Devices.

Among the series of lectures planned for this school are the following:

1. Perturbation Theory and Spectral Analysis of the Periodic Schroedinger Operator.

2. Character-automorphic classes and the Shift Operator on Riemann Surfaces.

3. Harmonic Analysis on Riemann Surfaces in terms of the Theta-Function.

4. Geometry of coinvariant subspaces: angles and projections.

5. Integrable systems and Lattice Models.

6. Lax-Phillips Theory for Operators with band Spectrum.

We will organise lodging for participants in two main locations: tourist cabins situated on a high ridge with a sweeping view of the Tasman Sea; and a motel on the shore of an inlet of the sea. There are still a few places available in the motel. Please inform us if you prefer motel type accommodation as soon as possible. Participants could also be accommodated at the hotel, where we are to have most of our meals. Because the hotel may be noisy at night we have not formally reserved accommodation there, but if you prefer to stay there please let us know.

The weather in New Zealand during early January is usually stable and mild.

David Gauld

Department of Mathematics, University of Auckland

FORDER LECTURESHIP

The Forder Lectureship was established in 1985 following a bequest to the London Mathematical Society from the late Professor Henry George Forder (Professor of Mathematics at the University of Auckland 1934-55).

Under the terms of this Lectureship, every two years an eminent mathematician in the United Kingdom is selected (by the London Mathematical Society Council in consultation with the New Zealand Mathematical Society Council) to tour New Zealand for a period of three to four weeks and to give lectures in the six main New Zealand university centres.

The first Forder Lecturer was Professor Christopher Zeeman in 1987, and was followed by Professor Sir Michael Atiyah in 1989, Professor Peter Whittle in 1991, Professor Roger Penrose in 1993, Professor Elmer Rees in 1995, and Professor Ian Stewart in 1997.

The Forder Lecturer for 1999 will be Professor Sir Michael Berry of the University of Bristol. The arrangements of his visit are currently being organized. The contact person for his visit is Dr Stephen Joe (University of Waikato), email: stephenj@math.waikato.ac.nz.

RESEARCH REVIEW OF UNDERGRADUATE TEACHING AND LEARNING IN MATHEMATICS

Glenda Anthony, Phillip Swedosh (Melbourne University) and Ruth Hubbard (QU) are currently

SITUATIONS VACANT

Lecturer in Mathematics

The University of Waikato

invites applications for a Lecturer in Mathematics within the Department of Mathematics, preferably commencing no later than the date 1 February 1999.

This tenure track (i.e. continuing) position would suit, for example, a person embarking on an academic career with a recently completed PhD. The successful applicant will have demonstrated excellence in teaching at a tertiary level and the potential to undertake a successful research career. The appointee will be expected to teach courses at the undergraduate and graduate levels, and undertake graduate supervision.

Applicants with expertise in any branch of the subject, including pure, applied, computational or engineering mathematics, will be considered.

The current salary range for Lecturers is NZ$42,993 - NZ$52,989 per annum.

Information about the present staff and their research interests can be found at http://www.math.waikato.ac.nz/. Further information of an academic nature may be obtained from Associate Professor Kevin Broughan (kab@waikato.ac.nz) or Associate Professor Alfred Sneyd (sneyd@waikato.ac.nz).

Information about the University of Waikato is available at http://www.waikato.ac.nz/. Details of the method of application can be obtained from: Human Resource Management Division, The University of Waikato, Private Bag 3105 Hamilton, New Zealand, telephone 64-7-838 4003, facsimile 64-7-856 0135, email hrm@waikato.ac.nz.

Applications, on the University of Waikato form, quoting the vacancy number A98/131, close on 17 September 1998.

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DEPARTMENT OF MATHEMATICS

University of Western Australia

Applications are invited for a two year appointment for a research project "Transitive graphs and quasiprimitive permutation groups" funded by the Australian Research Council and directed by Cheryl E Praeger. For more details please visit:

http://www.acs.uwa.edu.au/hrs/jobvacs/vacancies.htm

APPLICATION FOR FINANCIAL ASSISTANCE

Please fill in where appropriate

Name of applicant: .....

Address: .....

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e-mail: .....

Academic affiliation / Official status / Present position:

.....

NZMS status: Ordinary member ..... Student member .....

Other (give details) .....

Signature: ..... Date: .....

Type of assistance sought Amount

(a) Student Travel Grant .....

(b) Research Grant: conference/travel/visitors/other .....

(c) Grant from South Pacific Fund .....

(d) Conference/Workshop Organisation .....

(e) Other (please specify below) .....

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Estimated total expenditure: .....

Other sources of assistance sought/approved (please specify below):
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Estimated total expenditure (please include a breakdown of this expenditure, e.g. conference fees, travel, accommodation, etc.)

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List all previous support of this kind you have received from the New Zealand Mathematical Society in the past five years.

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Please describe your reasons for making this application and the plans you have for spending

the grant if your application is successful:

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Please list any supporting documents or other evidence (attached to your application):

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Supporting statement from Supervisor, Head of Department or person of responsibility.

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Please send this application (and any supporting documents or other evidence) to:

Dr Stephen Joe, Secretary, N.Z. Mathematical Society,

Department of Mathematics, The University of Waikato, Private Bag 3105, Hamilton.

The NZMS Council normally considers these applications at its meetings in July and November each year, but applications may be considered at other times in exceptional circumstances.

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POSTGRADUATE DEGREES AWARDED RECENTLY:

Isaac Freeman; Canterbury; M.Sc.; A modular system for constructing

dynamical systems; May 1998; Dr Mark S. Hickman; A method of

constructing dynamical systems with prescribed homoclinic behaviour

or bifurcation properties was developed via the use of switching

mechanisms.; Isaac is currently training to become a teacher.

Heather Jenkins; Canterbury; M.Sc.; Eigenvalue problems from

electronic structure theory; June 1998; Dr John Hannah;

An account of how eigenvalue problems arise in the study of

molecular orbitals in theoretical chemistry; Heather is now

in New York studying for a PhD.

Chris Price

APPLICATION FOR FINANCIAL ASSISTANCE

Please fill in where appropriate

Name of applicant: .....

Address: .....

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e-mail: .....

Academic affiliation / Official status / Present position:

.....

NZMS status: Ordinary member ..... Student member .....

Other (give details) .....

Signature: ..... Date: .....

Type of assistance sought Amount

(a) Student Travel Grant .....

(b) Research Grant: conference/travel/visitors/other .....

(c) Grant from South Pacific Fund .....

(d) Conference/Workshop Organisation .....

(e) Other (please specify below) .....

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Estimated total expenditure: .....

Other sources of assistance sought/approved (please specify below):
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Please send this application (and any supporting documents or other evidence) to:

Dr Stephen Joe, Secretary, N.Z. Mathematical Society,

Department of Mathematics, The University of Waikato, Private Bag 3105, Hamilton.

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NEW COLLEAGUES

DR DAVID TAN

University of Otago

Department of Mathematics and Statistics

Dr David Tan joined the Department as a Lecturer in Applied Mathematics. His interests include fluid dynamics, mathematical modelling, and computer-assisted mathematics. David's previous posts were at the Centre for Atmospheric Sciene in the Department of Applied Mathematics and Theoretical Physics, University of Cambridge, where he was a post-doctoral researcher from 1998-98, and concurrently at Churchill College, Cambridge, where he held a Teaching Fellowhip and College Lectureship in Applied Mathematics.

RECENT GRADUATES 1997/98

(FORMAT) TITLE; NAME; DEGREE; UNIVERSITY; DATE; SUPERVISORS; BRIEF SUMMARY; CURRENT POSITION.

PhD

Amor, R W; PhD; University of Auckland; "A generalized framework for the design and construction of integrated design systems"; 1997; Dr John Hosking; -; -. Assoc. Professor Alfred Sneyd and Assoc-Professor Ian Craig; -; Postdoc at NIWA.

Aziz, M A; PhD; University of Auckland "Runge-Kutta methods for oscillatory problems"; 1997 J.C. Butcher; -; - ; .

Calude, E; PhD; University of Auckland; "Automatic theoretical scheme for computational complexity"; 1997; Dr Hans Guesgen; - ; Tutor in Department of Computer Science.

Chan, T; PhD; University of Auckland; "Algebraic structures for the analysis of numerical methods"; 1998; Prof.

John Butcher, Dr Robert Chan and Dr Philip Sharp; - ; Research Assistant in our Department of Mathematics.

Clark C; PhD in Statistics; University of Otago; "Spatial Designs for Field Experiments"; 1998; Dr David Fletcher; Spatial designs for field experiments where simulated annealing and GEV theory were used to find optimal designs; Senior Teaching Fellow in Department of Mathematics and Statistics, University of Otago.

Day M; PhD; Massey University; " From the Experiences of Women Mathematicians: a Feminist Epistemology for Mathematics; 1998; Gillian Thornley; -; teacher.

Fabling, R B; D. Phil.; The University of Waikato; "Exact magnetic reconnection solutions in three dimensions"; 1997; Assoc. Prof. Ian Craig and Assoc-Professor Alfred. Sneyd; -; Working in Treasury.

Glanvill, M C; D. Phil.; The University of Waikato; "Automatic mesh generation and improvement schemes for the finite element method"; 1997; Assoc. Professor Kevin Broughan and Dr Stephen Joe; -; In a computing position in the U.K.

McWhirter, J L; D. Phil.; The University of Waikato; "Modelling pulsatile data: Estimation of parameters and dispersion matrix"; 1997; Dr Murray Jorgenson and Dr Harold Henderson; -; Lecturer in the Department of Statistics at the University of Waikato.

Palliser C; PhD; Massey University; "A model for deep geothermal brines: State space description and thermodynamic properties"; 1998; Robert McKibbin, Alex McNabb; - ; IRL-funded research on geothermal reservoirs, at Massey

Pearson, J; PhD; University of Auckland; "Computational aspects of topological graph theory"; 1998; Dr Paul Bonnington, Prof. Marston Conder & Prof. Peter Lorimer; Computations of Hadwiger's number, toroidal embeddings and face coverings; Researcher in Department of Statistics, Auckland University.

Salehi, M; PhD; University of Auckland; "Adaptive cluster sampling designs"; 1998; Professor George Seber; - ; Lecturer at Isfahan University of Technology, Iran.

Walker, C; Ph.D; University of Auckland, "Vertex-transitive graphs with large vertex-stabilisers"; 1998; Professor Marston Conder; - ; part-time Temporary Lecturer in Mathematics Department, Auckland University

Wood, J E; D. Phil.; The University of Waikato; "Student-centred timetabling for secondary schools"; 1997; Mr David Whitaker; -; -.

Zhu, Nan; D. Phil.; The University of Waikato; "Some theory, computations and applications of knapsack problems'; 1997; Assoc. Prof. Kevin Broughan; -; Research fellow in the Department of Mathematics at the University of Waikato.

Zwart, A B; D. Phil.; The University of Waikato; `Bubble driven waves in aluminium reduction cells'; 1998;

-; -.

Masters

Alford, C; MSc; University of Auckland; "DNA computation: from Turing machine to H System"; 1998; Professor Cris Calude; - ; -.

Allen G; Msc; Massey University; "On the acoustical theory of the trumpet: Is it sound?; 1997; Robert McKibbin; fluid dynamics near a trumpeter's lips and how this flow interacts with the rest of the trumpet system; working at PEC, Marton.

Arnold P; MEdStuds; Massey University; "Learning through language: Implications in a mathematics class; 1998; Gordon Knight; -; secondary teaching.

Barik, S K; MSc; University of Auckland; "An interactive computer vision course"; 1998; Professor Reinhard Klette; - ;

Curtis, R; MSc; University of Auckland; "Subgraphs of hypercubes with no small cycles"; 1998; Dr Margaret Morton & Professor Marston Conder; A set of projects, rather than a formal thesis; PhD student at Université de Geneve.

Denny, P; MSc; University of Auckland; "Search and enumerative techniques for information structures"; 1998; Assoc-Professor Peter Gibbons; - ; -.

Fagan A; MEdStuds; Massey University; "The Effects of Using Manipulatives on the Transfer of Three Dimensional

Spatial Visualisation to Two Dimensions"; 1998; Gordon Knight; -; HOD Mathematics (secondary teaching).

Flux T; Msc; (Distinction); Massey University; "Dynamical systems models for growth of ryegrass and clover"; 1998; Robert McKibbin; a study and analysis of a compartmental model for grass growth; working for AgResearch, Palmerston North.

Isaac F; MSc; University of Canterbury; "A modular system fo constructing dynamical systems"; 1998; Dr Mark S Hickman; -; Isaac is currently training to become a teacher.

Glover A; M.EdStuds; Massey University; "Achievement in the Transition from Intermediate School to High School"; 1998; Gordon Knight; -; HOD Mathematics (secondary teaching).

Jenkins, H; MSc; University of Canterbury: "Eigenvalue problems from electronic structure theory"; 1998; Dr John Hannah; An account of how eigenvalue problems arise in the study of molecular orbitals in theoretical chemistry; Heather is now in New York studying for a PhD.

Khomani, M M; MSc; University of Auckland; "Study of queue prediction, a fast cell scheduling algorithm"; 1998; Dr Peter Fenwick; - ;-.

Koo, Jeong Seon; MSc; University of Auckland; "Dermat Input: a knowledge-based system for dermatological diagnosis through the Internet"; 1998; Dr Hans Guesgen;-;-.

Lane, E; MSc; University of Auckland; "Heteroclinic networks"; 1998; Dr Vivian Kirk; Heteroclinic cycles in thermal convection can produce chaotic behaviour; Ph.D. student at the University of Arizona.

Low, D; MSc; University of Auckland; "Java Contact flow obfuscation"; 1998; Dr Christian Collberg and Professor Clark Thomborson; -;-.

Ng, A K M; MSc; University of Auckland; "Towards 3D model reconstruction from photometric stereo"; 1998; Prof. Reinhard Klette; - ;-.

Ng, G P; MSc; University of Auckland; "Fitting surfaces to multiply orthogonal contour sets"; 1998; Dr Richard Lobb; - ; -.

Parsons, L; MSc; University of Auckland; "Optimal foraging strategies for dairy cows"; 1998; Prof. Graeme Wake; Modelling feeding behaviour of dairy cows in a paddock; PhD student at Cornell University Aerospace Engineering Department.

Pearson, J; MSc; University of Auckland; "Heuristic search in route finding"; 1998; Dr Hans Guesgen; - ; - .

Rohan V M ; M Sc; Massey university; "Some Results on the Choice of Run Order for Experimental Designs with Correlated Errors"; May 1998; Geoff Jones; Examines efficient run orders for two and three level factorial and response surface designs when errors follow first order moving average or autoregressive models; Teaching Assistant, Otago University.

Savell J; MEdStuds; Massey University; "Using Parent Newsletters to Enhance Junior Primary School Mathematics"; 1998; Glenda Anthony; -; Lecturer, Massey University College of Education

Smith D; MEdStuds; Massey University; "Graphical Calculators in the Classroom"; 1998; Glenda Anthony; -; secondary teaching.

van der Linden, J; MSc; University of Auckland; "Querying in program validation";1998; Dr John Hosking and Dr Rick Mugridge; - ; - .

Young M; MSc; Massey University; "Analysis of Complex Surveys"; 1998; S J Haslett; Market Research Analyst.

Archive of Research Graduates (not previously reported)

PhD

Burrage, K; PhD; The University of Auckland; "Stability and efficiency properties of implicit Runge-Kutta methods" 1978; J C Butcher.

Chan, R P K; PhD; The University of Auckland; J.C. Butcher; "Extrapolation of Runge-Kutta methods for stiff initial-value problems"; 1989; J C Butcher.

Grundy, J C; PhD; University of Auckland; "Multiple textual and graphical views for interactive software development environments"; 1993.

Hamer, J; PhD; University of Auckland "Expert systems for codes of practice"; 1990; J. Hosking.

Hawkins, W F; PhD; "The mathematical work of John Napier (155-1617)"; G.J. Tee, H. A. Montgomery, W. F. Richardson and K. E. Pledger; 1982; .

Heard, A; PhD; The University of Auckland; "The solution of the order conditions for general linear methods"; 1978; J.C. Butcher.

McNickle, D C; PhD; The University of Auckland; "Processes in the decomposition of networks of queues"; 1974; J J Hunter.

Metcalf, P A; PhD; The University of Auckland; "Associations of albuminuria in a multi-racial workforce: the Auckland and Tokoroa workforce study"; 1993; A J Scott.

Mugridge, W B; PhD; University of Auckland; "Enhancements to an object-oriented programming language"; 1990; J. Hosking.

Poh, K-K; PhD; The University of Auckland; "The effect of two-stage sampling on non-parametric tests"; 1984; A J Scott.

Thomas, G; PhD; University of Otago ; "Discussion in Junior Mathematics; Helping one another learn?"; Professor Wing Lai and Professor D Holton; -; HOD Mathematics, Dunedin College of Education.

Triggs C M; PhD; The University of Auckland; "Effects of serial correlation on linear models"; 1974; G A F Seber.

Worsley, K J; PhD; The University of Auckland; A.J. Scott; "Significance testing in automatic interaction detection"; - ; A J Scott.

Yee, T W; PhD; The University of Auckland; "The analysis of binary statistics in quantitative plant ecology"; 1993; C J Wild.

Masters

Anderson, C; MSc; University of Auckland "A computer rendered and interpolated signing system"; 1993; G.A. Creak .

Copeland, M; MSc; University of Auckland; "Parallel processing using C-Linda"; 1993; M.J.J. Lennon.

de Vocht, P; Msc; University of Auckland; "Debate moderation using computers"; 1993; G.A. Creak.

Hegarty, G; MSc; University of Auckland; "Symmetries of Differential Equations"; Dr G Liddell; PhD Study at the University of Auckland.

Hewitt, B; Msc; University of Auckland; "Hemispherical neural networks"; 1993; G.A. Creak.

Porteous, M; MA; University of Otago ; "Generalizing Matching Extensions"; -; Dr R Aldred; Travelling overseas.

Rayner, G; MSc; University of Otago ; "Moving loads on sea ice"; Professor V Squire and Dr R Enlow; PhD study at the School of Mathematics, Queensland.

Thomas, I. E; Msc; University of Auckland; "The circuit model of parallel programming"; 1993; R.W. Doran .

Williams, J; MSc; University of Auckland; "Object-precision methods for visible surface determination"; 1993; R.J. Lobb.

Willmott, A J H; MSc; University of Auckland; "Fuzzy rendering for higher quality image generation"; 1993; R.J. Lobb.
