

Newsletter

Mathematics & Statistics

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April 2008

THIS ISSUE

1. Graduation – April 2008
2. Papers Accepted / Published
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GRADUATION – APRIL 2008



Nancy Zheng, Gloria Teng, Matt Hendtlass, Wen-Jhe Lee, Michael Snook, Isabella Hou, Annie Luo, Anna MacDonald & Rachael Tappenden

CONGRATULATIONS to all our April graduates! Special mention is due the following:

PhD: Issarest Weeraprajak;

BSc(Hons): Tim Candy, Matthew Hendtlass, Qian (Isabella) Hou, Wen-Jhe Lee, Anna MacDonald, Stephen McConnachie, Dimitri Schritt, Michael Snook, Rachael Tappenden, Gloria Teng & Thomas Watson.

PGDipSci with Distinction: Joshua Collins & Miriam Hodge.

CONGRATULATIONS to **Peter Humphries**, who has submitted his PhD thesis for examination. The title is *Combinatorial Aspects of Leaf-Labelled Trees*. Congratulations also to **Rachael Tappenden**, who has been awarded a 3-year PhD scholarship from the NZIMA.



Dr Mark Hickman on parade



Wen-Jhe Lee, Matt Hendtlass, Tim Candy, Rachael Tappenden, Anna MacDonald & Stephen McConnachie

PAPERS ACCEPTED

D S Bridges: *Continuity and Lipschitz constants for projections* (J. Logic and Alg. Programming)

H Q Bui, N Kaiblinger & R S Laugesen: *A note on constructing affine systems for L^2* (Appl. Comput. Harmon. Anal.)

T Gernhard, K Hartmann & D Wong: *Stochastic properties of generalised Yule models, with biodiversity applications* (Journal of Mathematical Biology)

PAPERS PUBLISHED

R Begg, D J N Wall & G C Wake: *On the stability of steady size-distributions for a cell-growth process with dispersion* (Differential and Integral Equations 21 (1-2): 1-24, Jan/Feb 2008)

Herman Geuvers & Iris Loeb: *Deduction Graphs with Universal Quantification*, *Electronic Notes in Theoretical Computer Science* (Proceedings of the Fourth International Workshop on Computing with Terms and Graphs, TERMGRAPH 2007, Vol. 203, issue 1, 28 March 2008, Pages 93-108)

H Q Bui & R S Laugesen: *Approximation and spanning in the Hardy space, by affine systems* (Constr. Approx. 28(2008), 149-172)

H Q Bui & R S Laugesen: *Sobolev spaces and approximation by affine spanning systems* (Math. Ann. 341 (2008), 347-389)

D W Redding, K Hartmann, A Mimoto, D Bokal, M Devos & A O Mooers: *Evolutionary distinct species capture more phylogenetic diversity than expected* (Journal of Theoretical Biology 251, 606-615)

Chase J G, Shaw G M, Le Compte A J, Lonergan T R, Willacy M B, Wong X W, Lin J, Lotz T, Lee D S & Hann CE: *Implementation and evaluation of the SPRINT protocol for tight glycaemic control in critically ill patients: a clinical practice change*. (Critical Care 12:R49, ISSN: 1364-8533. Available online at <http://ccforum.com/content/12/2/R49>)



Dr Ian Coope & students (L to R): Wen-Jhe Lee, Isabella Hou, Annie Luo, Rachael Tappenden, Anna MacDonald & Gloria Teng

CONFERENCES / VISITS

Rick Beatson: Mathematical Methods for Curves & Surfaces Conference, Norway, 26 June – 1 July.

Miriam Hodge: International Statistical Ecology Conference 2008, St Andrews, 9 -11 July & XXIVth International Biometric Conference, Dublin, 13 -18 July.

Alex James: 2008 AIMS Arlington Conference, University of Texas at Arlington, 18 – 21 May. Talk entitled *Dynamical Models of O₂ Uptake*.

Raazesh Sainudiin: Talk entitled *Six Resolutions of the n-coalescent* at the University of Auckland's Bioinformatics Institute, 24 April

Raazesh Sainudiin: 7th World Congress in Probability and Statistics, Singapore, 14-19 July.

Mike Steel: Annual HIV Evolution and Dynamics Meeting, Santa Fe Institute, USA, 27-30 April.

Mike Steel: Mathematics and Informatics in Evolution and Phylogeny, France, 10-12 June.

Mike Steel: Bayesian Phylogeny Meeting, Renji Institute, Budapest, 25-29 June

Meghan Williams: International Statistical Ecology Conference 2008, St Andrews, 9 -11 July & XXIVth International Biometric Conference, Dublin, 13 – 18 July.

WELCOME TO OUR DEPARTMENTAL VISITORS (E = Erskine Fellow)

Visitor	Organization	Host	From	To	Room	Extn
Dr Tim Robinson	University of Wyoming, USA	J Brown	13/12/07	11/7/08	605	8028
Dr Robin Havea	University of the Sth Pacific, Fiji	D Bridges	1/2/08	11/7/08	605	8028
David Sutton	University of York	A James	1/5/08	15/9/08	616	8876
Prof Ron Christensen (E)	University of New Mexico, USA	C Scarrott	5/5/08	31/7/08	607	8875
Prof Christopher Bose	University of Victoria, Canada	R Murray	1/7/08	31/12/08	605	8028
Prof Horst Malchow (E)	University of Osnabrück, Germany	A James	1/9/08	2/11/08	607	8875
Prof Brian Sleeman (E)	University of Leeds, UK	M Plank	6/9/08	19/10/08	607	8875

7th AUSTRALIA-NEW ZEALAND MATHEMATICS CONVENTION

8 – 12 December 2008

Department of Mathematics & Statistics, University of Canterbury

Conference Director: Rick Beatson

This is a joint Australia-New Zealand meeting, incorporating the 2008 Australian Mathematics Colloquium and the 2008 New Zealand Mathematics Colloquium.

Invited Speakers

The following speakers have accepted invitations to give plenary addresses to the convention:

- **Béla Bollobás** (Cambridge, UK and Memphis)
- **Carl de Boor** (Wisconsin-Madison)
- **Vaughan Jones** (Berkeley) AustMS Distinguished Lecturer
- **Kerry Landman** (Melbourne)
- **Gregory F Lawler** (Chicago)
- **Charles Leedham-Green** (Queen Mary, London)
- **John W Morgan** (Columbia)
- **Karen Parshall** (Virginia)
- **James Sneyd** (Auckland) ANZIAM Lecturer
- **Angelika Steger** (ETH Zurich)
- **Neil Trudinger** (ANU).

Special Sessions

- Applied Dynamical Systems in Engineering and the Physical Sciences
- Number Theory

Department members are encouraged to propose special sessions in their fields of interest. Special sessions in which there is an Australian co-organiser are particularly welcome. Please see <http://www.math.canterbury.ac.nz/ANZMC2008/call-for-special-sessions/> for details of how to propose a special session.

BOCHNER PRIZE

Carlos Kenig, Louis Block Distinguished Service Professor at the University of Chicago and an Erskine Visiting Fellow in this department in 2001, was awarded a 2008 Bochner Prize by the American Mathematical Society. These prizes are awarded every 3 years. The other two recipients for 2008 are Alberto Bressan (Penn State University) and Charles Fefferman (Princeton University).

- Qui Bui

QUOTATION

A pertinent quote from Felix Klein's lecture entitled *Mathematics and the Applied Sciences* (2 September 1893):

"I am led to these remarks by the consciousness of a growing danger in the higher educational system of Germany – the danger of separation between abstract mathematical science and its scientific and technical applications. Such separation could only be deplored, for it would necessarily be followed by shallowness on the side of the applied sciences and by isolation on the part of pure mathematics."

- Douglas Bridges

SEMESTER 2 SEMINAR SERIES

Thursday 1 May, 3.10pm, Erskine 446 (general): Alistair Smith (Beca Engineering)
The Basics of Transport Modelling and Accident Prediction

Friday 2 May, 3.10pm, Erskine 446 (technical): Robert Corless (University of W. Ontario)
Barycentric Hermite Interpolants for Event Location in Initial-Value Problems

Thursday 8 May, 3.10pm, Erskine 446 (general): Charles Semple (University of Canterbury)
Combinatorial Problems in Conservation Biology

Thursday 15 May, 3.10pm, Erskine 446 (general): Malte Peter (University of Auckland)
Homogenisation Problems in PDEs: Reaction-Diffusion Processes

Thursday 22 May, 3.10pm, Erskine 446 (general): Peter Smith (University of Canterbury)
Why is a Statistician Working on Mobile Phones?

Thursday 29 May, 3.10pm, Erskine 446 (general): Mike Steel (Biomathematics Res. Centre)
The Joys of Being Mean: Tricks for (Evolutionary) Trees

Thursday 5 June, 3.10pm, Erskine 446 (general): Vivien Kirk (University of Auckland)
Designing Experiments using Mathematics: Nonlinear Dynamics and Calcium Oscillations

GRADUANDS' AFTERNOON TEA - SNAPSHOTS



Stephen, Tim and Michael



Dr John Hannah with Pratima Makwana



Isabella and Miriam

QUOTATION

(From "Imperial Science" by Eugene Goodheart, in "The Common Review")

"In a time like the present when the interdisciplinary is the rage, one should be aware of how it can become the vehicle of reductionism, the impoverishing translation of one field into another. Political theory becomes the scientific study of statistics, history of geography, literature of ideology, religion of a scientific understanding of our origins. Too often, the desire for the interdisciplinary is a symptom of a loss of confidence in the integrity of one's own discipline. Unless it is based on mutual respect among disciplines and a sense of its own limits, interdisciplinary work becomes vacuous."

- Douglas Bridges