

Newsletter

Mathematics & Statistics

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CONGRATULATIONS!

Congratulations to **Phillipa Williams**, who won the College of Engineering category for the UCSA lecturer of the year! Congratulations also to **Jeanette McLeod**, who was nominated. These nominations come from the students themselves, and were accompanied by inspiring student comments about how wonderful Phillipa and Jeanette are.

- John Hannah

MATHSOC



Cantamath 2011

Thanks to MATHSOC members Thomas, James, Daniel, Isaac and Julie for making themselves available during the holidays to help with the booth at Cantamath 2011. They did a superb job of interacting with the students. Cantamath 2011 was sponsored by Casio, The Press and the Ministry of Education. The department was represented at the prizegiving by Rua Murray, who made a speech and presented the prizes. (Left): James Williams demonstrating his Rubik's Cube skills at the booth.

Movie Night & BBQ

Mathsoc, with the support of the department, organised the first movie night this year. We watched the movie "Social Network" (about how Mark started Facebook) with fish and chips, hot dogs, drinks and snacks. About 15 cool people showed up (thanks to the "social network") and we had a wonderful time. MATHSOC would love your support. Come to some of our events! Sign up by email: Mathsoc.uc@gmail.com

Thomas Li

(Right: Staff and students enjoyed a Mathsoc BBQ on 16 September.)



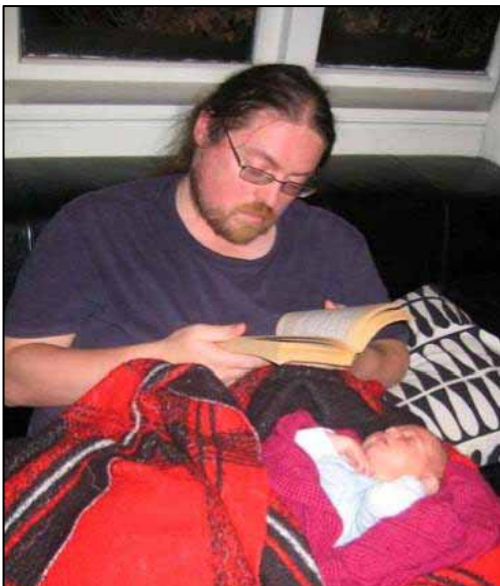
WELCOME TO OUR DEPARTMENT VISITORS						
Visitor	Organisation	Host	From	To	Room	Extn
Zeren Gurkan	DTU Aqua	M Plank	15.8.11	14.10.11	E. 443	
Jonathan Pitchford (Erskine)	York	A James	1.9.11	30.11.11	R.312A	
Simone Linz	Tuebingen	C Semple	5.9.11	24.9.11	N/A	
Ian Frigaard	British Columbia	M Moyers-Gonzalez	12.9.11	23.9.11	R.332	7685
Kim Plofker	Union College, USA	C Montelle	18.10.11	1.12.11	R. 309	6267
Agathe Keller	Paris	C Montelle	24.10.11	4.11.11	R. 309	6267
Marcia Barbosa	Evora, Portugal	J Brown	25.10.11	16.12.11	R. 309	6267

ERSKINE FELLOW

Welcome to Dr Jonathan Pitchford, Senior Lecturer in Mathematical Ecology at the University of York, UK. His special field of interest is Mathematical Biology including population dynamics.

Jonathan will be teaching into MATH202 and MATH401, presenting seminars and engaging in postgraduate supervision.

His host is Alex James and he is based in Rutherford 312A.



Congratulations to James & Vanessa Degnan (left) on the birth of Quinn Erasmus Degnan, on 7 August. Congratulations also to Richard & Emily Brown (right) on the birth of Toby Joshua Brown, on 15 August.

CONFERENCES AND VISITS

NZSA Annual Conference

Elena Moltchanova, Peter Smith and I, along with Sabariah Saharan, Joe Zhu and Irene van Woerden, attended the annual conference in Auckland, 29-31 August. It was my last AGM as NZSA President and the new President is James Curran from Auckland University. The NZSA executive has now moved to Auckland. Thanks to the Christchurch-based team for their work over the past 3 years.

- Jennifer Brown



Jennifer Brown, Elena Moltchanova and Peter Smith

Liz Ackerley, Jane Clucas, Irene David, Hilary Seddon and Phillipa Williams: to attend the Delta Conference in Rotorua, 27 November to 2 December. Talks by Irene and Phillipa to be advised.

Jennifer Brown: gave a talk titled *Complete Allocation Sampling: an Efficient and Easily Implemented Adaptive Sampling Design* at the NZSA Conference in Auckland, 28-31 August, and to give a talk titled *Adaptive and Unequal Probability Survey Designs for Environmental Management* and organise a session (*Survey Designs for Ecological Monitoring*) at the MODSIM 2011 Conference in Perth, 12-16 December.

Jennifer Brown: invited to Otago University and presented a seminar on 15 September on her work in adaptive sampling” *Adaptive sampling; my journey that began in the Department of Mathematics and Statistics, Otago University.*”

James Dent: to attend a NZIMA workshop on 14 December and to give a talk titled *An Introduction to Constructive Reverse Mathematics* at the 12th Asian Logic Conference, 15 - 20 December, in Wellington.

Peter Jaksons: attended the Australasian Applied Statistics Conference, 12-15 July, followed by the Collaboration Centre of Statistics (University of Hasselt and University of Leuven) and the Institute for Tropical Medicine, Antwerp, July-August.

Steve Manion: presented a poster titled *Wikipedia-based Context Visualisations* at the Machine Learning Summer School (MLSS) in Bordeaux, France on 4 September. Only 35% of applicants were accepted for this Summer school and Steve was the recipient of a scholarship from the organisers. Steve reports that it is a boot camp for many machine learning techniques used in research and industry. He’s finding that the concepts he has been learning have great potential benefits for his project and he would recommend the school to any Mathematics student, especially those enrolled in Computational and Applied Mathematics.

Maarten McKubure-Jordens: to give talks at the NZ Maths Colloquium in Auckland (tba), the Australasian Association of Logic meeting in Wellington (*Algebraic Inconsistent Topology*) and the Asian Logic Conference (*Constructing Solutions to the Dirichlet Problem*) in Wellington, in December.

Jeanette McLeod: to give a talk at the 35th Australasian Conference on Combinatorial Mathematics and Combinatorial Computing at Monash University, Melbourne, 5-9 December and to make a research visit to Brendan McKay at the Australian National University in Melbourne.

Elena Moltchanova: gave a talk titled *The Effect of Early Growth and Development on Long-life Health: a case study of the Helsinki Birth Cohort* at the NZSA Conference in Auckland, 29 – 31 August.

Clemency Montelle: gave a talk titled *Hypsicles of Alexandria and his Little Work on Rising Times* at a History and Philosophy of Science Unit seminar, University of Sydney. While there, she also attended the annual executive meeting of the Australasian Association for the History Philosophy and Social Studies of Science (AAHPSSS) in her capacity as NZ Vice-President of the association.

Miguel Moyers-Gonzales: to attend a workshop on Viscoplastic Fluids: from Theory to Application, in Rio de Janeiro in November.

Rua Murray: to participate in a focussed research group at the Banff International Research Station for Mathematical Innovation and Discovery in October, courtesy of a grant from the College Strategic Fund, and to visit collaborators in Victoria, Canada.

Michael Plank: to give a talk titled *The effects of Ability Grouping in Tertiary-level Mathematics for Engineering Students* at the Delta Conference, Rotorua, 27 November – 2 December.

Chris Price: to give a talk titled *Recycling Bases in the Halton Sequence: an Optimization View* at the 55th Australian Mathematical Society (AustMS) meeting at the University of Wollongong, NSW, 26 – 29 September.

Sabariah Saharan: attended the NZSA Conference at the University of Auckland, 29-31 August.

Charles Semple: to fund Rachael Tappenden's attendance at the NZMS Colloquium and Nick Brettell's attendance at 35ACCMCC; and to make a research visit to Durham University, 12-27 November.

Irene van Woerden: gave a contributed talk about *Using algebraic methods to test the independence of ethnicity and resolution for drug-related crimes in NZ* at the 62nd Annual Meeting of the NZ Statistical Association, Auckland, 28-31 August.

Xin Zhao: to attend the 4th International Conference of the ERCIM WG on Computing and Statistics, University of London, 17-19 December.

Sha (Joe) Zhu: presented a poster titled *Probabilistic Modeling of Gene Trees Given Species Networks* at the NZSA Conference, Auckland University, 29-31 August, and to present again at Phylomania 2011, University of Tasmania, 10-11 November. Also, to attend Workshop III: Evolutionary Genomics, Mathematical and Computational Approaches in High-Throughput Genomics, at UCLA, 15-18 November.

PAPER SUBMITTED

Asgari, H., Chen, X.Q. & Sainudiin, R.: *Application of artificial neural networks to rotating equipment* (3rd Conference on Rotating Equipment in Oil and Power Industries, Tehran, 22-23 November 2011).

Teng, G., Kuhn, K., and Sainudiin, R.: *Statistical regular pavings to analyze massive data of aircraft trajectories.*

PAPERS ACCEPTED

Martin, G and McKubre-Jordens, M.: *Deformations with smallest weight L^p average distortion and Nitsche type phenomena* (Journal of the London Mathematical Society)

Montelle, C.: book review of Bretelle-Establet, Florence *Looking at it from Asia: the Processes that Shaped the Sources of History of Science* (Boston Studies in the Philosophy of Science, vol. 265, Springer Dordrecht Heidelberg London New York, 2011, 426pp; in it Metascienc.

PAPERS PUBLISHED

McKubre-Jordens, M. and Weber, Z. (2011): *Real Analysis in Paraconsistent Logic* (Journal of Philosophical Logic, DOI: 10.1007/s10992-011-9210-6)

STATS CHAT

Visit <http://www.statschat.org.nz/> for some interesting discussion on numeracy. This site is hosted by Auckland University.

STATISTICS NZ'S RECENT RELEASE OF SYNTHETIC DATASETS

Statistics NZ has released a set of datasets based on the NZ Income Survey. Each dataset contains about 11,000 records for six variables: four categorical and two numerical. Each dataset is a Synthetic Unit Record File (SURF) and the whole set (the Super SURF) consists of 100 different versions. Students can explore the features of the distributions and relationships. These are close to the features in the original real dataset. It can be found on Schools Corner in the Statistics NZ website. Also, see the university students' page.

STATISTICIANS OF THE FUTURE!

Congratulations to the Cashmere Primary School for their entry into the International Statistical Literacy Competition. The team, with some guidance from Jennifer Brown and support from Paul Brouwers, came first equal in NZ and, more recently, third in the international competition, in which 5,000 students from 17 countries participated! Their poster is called *Can you predict the weather at midday by looking out your window in the morning?* (On display in Maths Office.)

UPCOMING THURSDAY SEMINARS – ERSKINE 446 @ 3.10PM

29 September: Stefan Winkler (UC Geological Sciences) - *Glaciers – Good Indicators of Past and Present Climate Change?*

6 October: Charles Semple (UC Mathematics) – *Submodular Functions and Optimizing Biodiversity*

13 October: Daniel Stouffer (UC Biological Sciences) – *The Tragedy of the Commons in Mutualistic Networks*

20 October: Govind Menon (Brown University Applied Mathematics) – *Algorithmic Design of Self-folding Polyhedron*

27 October: Klas Modin (tba)