

Newsletter

Mathematics & Statistics

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SIGN UP TO MATHSOC!



Some of the staff and students who attended the inaugural MATHSOC meeting

The University of Canterbury Mathematics and Statistics Society (MATHSOC) was formed recently to give Mathematics and Statistics students and staff a social community akin to societies associated with other departments. We had our first AGM on Friday 12 March, when we elected our executive committee.

The committee, which has already had its first meeting, will be organising both social and academic events, starting in semester two. Activities will include BBQs, Cantamath sessions and the continuation of the Numb3rs screenings. Entry is open to all MATHSOC members.

If you have not joined MATHSOC, sign up now! It's FREE to join. For those who are keen, please email your name and, if applicable, student ID to mathsoc.uc@gmail.com.

- Thomas Li

HoD UPDATE

Well done with Marsdens! In total, staff were associated with 14 different Marsden applications that went to 6 different panels. There were 33 applications in total from the College so we have done very well.

We are planning to review MATH300/400 courses in 2010, ready for implementation in 2012. Mark Hickman and Chris Price will run this review and are setting up the process for this.

The College Office is organising a research showcase on 26 August where staff and students will have an opportunity to display their research work.

Applications for the two current academic vacancies in the department have now closed and preliminary interviewing is now taking place.

The introduction of a smoke-free campus has been delayed until 2011.

- Jennifer Brown

CONGRATULATIONS!

Jennifer Brown and **Miriam Hodge** have made it through the first round with the Qatar National Fund. The title of their research grant application is *Adaptive survey designs for environmental monitoring in Qatar*.

Beata Faller has gained one of the three PhD Publication Scholarships that were awarded this month by the College of Engineering.

On 13 April, **Maarten McKubre-Jordens** will be awarded his PhD from Massey University for a thesis entitled *Minimising Weighted Mean Distortion*, under the supervision of Gaven Martin. Maarten's very successful oral exam was conducted via Skype between Munich and Albany.

PhD student **Agate Ponder-Sutton** has been awarded the University of Canterbury College of Engineering Doctoral Scholarship for Women. This 3-year scholarship will enable Agate to concentrate fulltime on her studies using mathematical modelling to map the growth of an invasive weed.

Thomas Steinke has been awarded the Sims Empire Scholarship for 2010. This scholarship, founded in 1945 by Arthur Sims and Agnes Marion, is awarded to a New Zealand university student for outstanding merit and promise in the subjects of Physics, Engineering, Chemistry, Mathematics or Medicine.

Rachael Tappenden is one of 50 Mathematics and Computer Science PhD students from around the world to be invited to attend the prestigious Gene Golub SIAM Summer School on Numerical Linear Algebra, to be held in Brindisi, Italy from 7-18 June 2010.

WELCOME TO OUR DEPARTMENTAL VISITORS

<u>Visitor</u>	<u>Organization</u>	<u>Host</u>	<u>From</u>	<u>To</u>	<u>Room</u>	<u>Extn</u>
Bruce Craig	Purdue University	R Sainudiin	11/1/10	11/7/10	607	8875
Olivier Gascuel	LIRMM, France	C Semple	25/1/10	9/4/10	616	8876
Peter Olsson	Chalmers University	D Wall	26/3/10	30/6/10	605	8028

CONFERENCES & VISITS

Dominic Lee: research visit to DSO National Laboratories in Singapore, 17 – 28 May.

Dominic Lee: to give a presentation at the CDMS Regional Conference – Bayesian Nonparametric Statistical Methods: Theory and Applications, in Santa Cruz, 16 - 20 August.

PAPERS SUBMITTED

Lee, D S & Naiman, D Q: *Inadmissibility of the naïve estimator for the cumulative probability of detection* (submitted to IEEE Transactions on Aerospace and Electronic Systems)

Raazesh Sainudiin & Richard Penny: *Imputation Variance Estimation for Statistics New Zealand's Accommodation Occupancy*, pp 1-26, 2010. (This paper was included in error under Papers Published in last month's newsletter.)

Thomas Steinke & Raazesh Sainudiin: *A Rigorous Extension of the First Schönhade-Strassen Integer Multiplication Algorithm Using Interval Arithmetic*

Zahari M, Lee D S, Russell G, Darlow B A, Scarrott C & Reale M: *Using coefficient of variation as a composite measure of oxygen saturation in preterm babies* (submitted to Pediatrics)

PAPERS ACCEPTED

R Broughton, I Coope, P Renaud & R Tappenden: *Determinant and Exchange Algorithms for Observation Subset Selection* (IEEE Transactions on Image Processing, 17 March 2010)

PAPERS PUBLISHED

Gianna Agro, Frank Lad & Guiseppo Sanfilippo: *Sequentially forecasting economic indices using mixture linear combinations of EP distributions* (Journal of Data Science Vol 8 # 1, pp 101-126, 2010)

Ronald Begg & David Wall: *On a multi-compartment age-distribution model of cell growth* (IMA Journal of Applied Mathematics 2010, 1-27, doi: 10.1093/imamat/hxq010)

Bradley, B A & Lee D S: *Accuracy of approximate methods of uncertainty propagation in seismic loss estimation.* (Structural Safety 32(1), 13-24, 2010)

Bradley, B A & Lee, D S: *Component correlations in structure-specific seismic loss estimation* (Earthquake Engineering and Structural Dynamics, 39(3), 237-258, 2010)

G F Steinke: *Sisters of some 4-dimensional elation Laguerre planes of group dimension 10* (Monatshefte für Mathematik v159, 407-423, 2010)

G F Steinke: *A characterisation of certain elation Laguerre planes in terms of Kleinewillinghofer types* (Results in Mathematics v57, 43-51, 2010)

P L Wilson & J Meyer: *A spring-dashpot system for modelling lung tumour motion in radiotherapy* (Computational and Mathematical Methods in Medicine, Vol 11, Issue 1 March 2010, pages 13-26).

SUCCESS FOR NEW INTRODUCTORY STATISTICS COURSE

The introduction of a new introductory statistics course (STAT101) in both semesters one and two this year marks a change in the way statistics is taught in this department. Developed by the Statistics team after a series of meetings, and with the assistance of the University Centre for Teaching and Learning, the course has fewer classroom-style lectures and more emphasis on using computers to work with data. Lectures are videoed and tutors assist with weekly examples classes practising the material covered in lectures in addition to supporting students in the weekly computer-based tutorials.

The course is designed to be flexible enough to cope with the differing learning styles and backgrounds of our students and is structured in such a way that students requiring extra help can get the assistance they need, whilst those who wish to may work remotely as the tutorials are available on line at any time.

The implementation of this course run by Irene David has been so successful that Irene and HoD Jennifer Brown have been invited to present two papers at the 8th International Conference on Teaching Statistics (ICOTS8) in Slovenia in July.

ICOTS, which is organised by the International Association for Statistical Education, is held every four years and is designed to give statistics educators and professionals an opportunity to present their research and exchange information and ideas. The 2010 conference is seen as a great chance to demonstrate the success of our new course – the way in which it is taught, its flexibility and its accessibility.
