

Newsletter

Mathematics & Statistics



ISSUE 01/05

FEBRUARY / MARCH 2005

This Newsletter

- Welcome
- Papers Published
- Book Accepted
- Papers and Posters Presented
- Papers Accepted
- Paper Submitted
- Linda Moore - Sir James Hight Memorial Prize 2004
- Kyoko Fukuda Awarded MSc & PhD Scholarship
- Charles (Qinglin) Hu - Msc Scholarship
- Canterbury Medical Research Foundation (CMRF) Grant 2005 - 2006
- Department Research Funds
- Erskine Fellowship Accepted
- General
- Department Visitors

The gem cannot be polished without friction, nor man perfected without trials.

Confucius

WELCOME TO:

- ✧ Professor Jotun Hein and Dr Annamette Hein who are visiting for 3 months on an Allan Wilson Centre sabbatical package. Jotun is Professor of Bioinformatics at Oxford University (Statistics) and is working mostly with Mike Steel.
- ✧ Professor Vincent Moulton and Dr Katharina Huber (University of East Anglia) who are here for the first term under the Erskine programme, working mostly with Charles Semple and Magnus Bordewich.
- ✧ Michelle Swenson from University of Texas, who is visiting until June and who is working on supertree theory.
- ✧ Burkard Polster who is here till June 10 on an Erskine Fellowship. Burkard is here with his wife Anu and their two children (1 and 2). Burkard is giving lectures for Maths in Perspective and will be joining Bill Baritomba on his "Dance of Mathematics" journeys around Canterbury. Burkard is in Room 605.

PAPERS PUBLISHED

B. Polster and G.F. Steinke; On the Kleinewillinghöfer types of flat Laguerre planes. Results Math. 46, 103--122 (2004).

Daniel H. Huson, Tobias Dezulian, Tobias Kl'pper, Mike A. Steel Phylogenetic Super-Networks from Partial Trees IEEE/ACM Transactions on Computational Biology and Bioinformatics. Vol 1(4): 151--158(2004).

D.S. Bridges and L.S. Vita, "A general constructive proof technique", Elec. Notes in Theor. Computer Science 120, 31-43, 2005.

BOOK ACCEPTED

Douglas Bridges and Luminata Vita: Techniques of Constructive Analysis, Universitext, Springer New York.

PAPERS AND POSTERS PRESENTED

Lee, D.S., Iyengar, S., Czanner, G. and Roscoe, J. (2005). Bayesian wavelet representation of neuron signals via perfect sampling. 2nd IMS-ISBA Joint Meeting, January 12-14, Bormio, Italy.

Shaw, G.M., Chase, J.G., Lee, D.S., Bloomfield, M., Doran, C.V., Lin, J. and Lotz, T. (2005). "Peak and range of blood glucose are also associated with ICU mortality". Proceedings of the 34th Critical Care Congress, Society of Critical Care Medicine (SCCM), January 15-19, Phoenix, Arizona. (Also in Critical Care Medicine, Vol 32(12), pp. A125).

Shaw, G.M., Chase, J.G., Lee, D.S., Hooper, E., Rudge, A.D. and Agogue, F. (2005). "Emerging methods for sedation and agitation management in critical illness". Proceedings of 34th Critical Care Congress, Society of Critical Care Medicine (SCCM), January 15-19, Phoenix, Arizona. (Also in Critical Care Medicine, Vol 32(12), pp. A97).

Chase, J.G., Rudge, A.D., Shaw, G.M. and Lee, D.S. (2004). "Sedation management in the critically ill using dynamic systems modelling". New Zealand Mathematics Society (NZMS) Colloquium and MISG SIAM, December 6-8, Dunedin, New Zealand (invited).

PAPERS ACCEPTED

G.F. Steinke; A classification of 4-dimensional elation Laguerre planes of group dimension 10. Adv. Geom. - (to appear).

R.K. Beatson and H.-Q. Bui, Mollification formulas and implicit smoothing, to appear in Advances in Comp. Maths.

H.-Q. Bui and R.S. Laugesen, Affine systems that span Lebesgue spaces, to appear in J. Fourier Anal. Appli.

M. Steel, Should phylogenetic models be trying to 'fit an elephant'? Trends in Genetics.

PAPER SUBMITTED

T. Thierer and M. Steel, A characteristic function approach for phylogenies on binary characters, to Bioinformatics.

LINDA MOORE SIR JAMES HIGHT MEMORIAL PRIZE 2004

Linda Moore was awarded the Sir James Hight Memorial Prize in History for her thesis "Gender Counts: Men, Women and Electoral Politics in New Zealand, 1893-1919" in December 2004. The prize is awarded annually for excellence in history and to honour a research student who has displayed an outstanding love of learning. Accounts of electoral politics and voting in early 20th century NZ, have seldom considered gender. Moore trialled five methods for ecological inference and as such her work is a significant NZ contribution (the first quantitative contribution) in this area; awarded a High Distinction. Moore's thesis was also the first to be jointly supervised by math/stat (I Hudson) and by history (Professor Miles Fairburn). Linda is now working for NZ Statistics (Chch then off to NZ Stat Wellington).

Irene Hudson

KYOKO FUKUDA AWARDED MSc & PhD SCHOLARSHIP

In December 2004 Kyoko Fukuda obtained a High Distinction for her Master's thesis "New Improved Methods for Application & Interpretation of SSA: A case study of climate and air pollution in Christchurch, NZ". Fukuda identified unique structures, not seen to date, in climate-pollution research. Fukuda developed a method to assess eigentriple similarity, novel work which she presented at the American Statistical Association, Computational Environmetrics Conference, Chicago, 2004. She was awarded a UC PhD scholarship and in April commences PhD work on statistical environmetrics with Irene and researchers in forestry and geography. Well done!

Irene Hudson

CHARLES (QINGLIN) HU MSc SCHOLARSHIP

Charles (Qinglin) Hu has been successful in obtaining a UC MSc scholarship (2005). Charles is progressing work on tracking of deer population in NZ. He has been supervised by Irene and Hamish Cochrane (Forestry/Environmental Science) as of March 2004. We congratulate him!

Irene Hudson

CANTERBURY MEDICAL RESEARCH FOUNDATION (CMRF) GRANT 2005 - 2006

A team from Christchurch School of Medicine & Health Sciences (Heitger et al), Physics (Watts) and Math/Stat (Hudson) were awarded a CMRF grant on "Mathematical and Image methods for Advanced MR imaging after mild closed head injury". This project essentially funds the brain image research commenced by PhD Michael Chappell in 2004 and jointly supervised by Drs Watts (Phys) and Hudson (Math/Stat). Michael works also at CPIT.

Irene Hudson

DEPARTMENT RESEARCH FUNDS

Congratulations to the following who had/have been awarded grants towards conference expenses:

- ✧ Michael Plank – MISG Conference which was held in Massey, Albany on the 24-28 January 2005; the ANZIAM Conference which was held on 30 January-3rd February in Napier; and the International Workshop on Algebra and Geometry at Victoria University in Wellington on February 9-10 2005.
- ✧ Gunter Steinke (The universal covering group of $SL(2, P)$ as group of automorphisms of geometries) and Michael Plank – International Conference: Geometry, Interactions with Algebra and Analysis held at the University of Auckland, February 14-18 2005.
- ✧ Ben Martin - Oberwolfach Meeting "Groups and Geometry" being held in Oberwolfach, Germany, 6-12 March 2005; NZMRI Summer Workshop "Geometry: Interactions with Algebra and Analysis" held in Napier 8-15 January 2005; "International Workshop on Algebra", Victoria University in Wellington on the 9-10 February; "Geometry: Interactions with Algebra and Analysis", at the University of Auckland on the 8-14 February. Ben gave talks entitled "Completely reducible subgroups of reductive algebraic groups" and "Complete reducibility, geometric invariant theory, and a question of Serre" in Wellington and Auckland respectively.
- ✧ Qui Bui – Approximation and Harmonic Analysis Conference, held in Auckland, 8-11 February 2005; Special Semester on "Modern method of time-frequency analysis" at the ESI, Vienna 1-10 June – talk entitled "Non-orthogonal expansions and greedy algorithms".
- ✧ Charles Semple – The Annual New Zealand Phylogenetics Meeting which was held in Whitianga 12-17 February 2005.
- ✧ Douglas Bridges to give a talk "Journeys in to Apartness Space" at the ASL Annual Meeting being held at Stanford University 19-22 March 2005, and to attend the ASL Spring Meeting in San Francisco 23-26 March 2005.
- ✧ Rick Beatson – To give a seminar to the Department of Mathematics at the University of Otago.
- ✧ Irene Hudson (Gendered counts of historical voting in NZ 1892-1919: A rigorous statistical ecological inference approach), Easaw Chacko and Murthy Mittinty (Bootstrap variance estimation for two stage cluster designs with imputed data) to attend the 55th Session of the International Statistical Institute 2005, 5-12 April, being held in Sydney.

ERSKINE FELLOWSHIP ACCEPTED

Neil Watson will be hosting Professor Stephen J. Gardiner, of University College Dublin, who has accepted an invitation to visit Canterbury in July and August of 2006. Stephen's interests lie in the areas of Potential Theory, Function Theory, and Harmonic Approximation. For further details, visit his webpage at <http://mathsa.ucd.ie/staff/sjg/>.

SLEEPLESS NIGHTS

It has been a clucky month in the office with Julie and Sarah's sisters opting for some sleepless nights. Sarah's first nephew arrived on the 2nd February at 4.31am, and Julie's 7th niece on the 19th February at 4.37pm.



Ashton Vincent Witcomb



Nico Georgina Daly

DEPARTMENT VISITORS

Current Visitors	Name of Organization	From	To	Room	Extn
Prof. Claude Belisle	Université Laval	15 Dec 2004	30 Jun 2005	501	8376
Prof. Vincent Moulton Dr Katherine Huber	University of East Anglia	7 Feb 2005	9 Apr 2005	607	8875
Prof. Jotun Hein Dr Annamette Hein	University of Oxford	5 Jan 2005	8 Apr 2005	620	7431
Dr Burkard Polster	Monash University	21 Feb 2005	10 Jun 2005	605	8028
Prof. Greg Reid		28 Jan 2005	28 Mar 05	502	7663
Visitors due to arrive	Name of Organization	From	To	Room	Ext No
Prof. James Oxley Prof. Geoff Whittle	Louisiana State University Victoria University, Wellington	14 Mar 2005	18 Mar 2005	710	7694
Associate Professor Richard Laugeson	University of Illinois	1 Jun 2005	16 Aug 2005	607	8875
Prof. Daniel Naiman	John Hopkins University, Maryland	9 Jul 2005	14 Aug 2005	710	7431
Prof. Dominic Welsh	University of Oxford	1 Sep 2005	1 Dec 2005	620	7431