

# MATHEMATICS AND STATISTICS

# NEWSLETTER

Summer 2006

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## WELCOMES AND GOODBYES

- Welcome to Mike Atkinson from the University of Otago, Dunedin, New Zealand, who is spending his sabbatical leave in St Andrews, visiting the Algebra and Combinatorics Research Group and CIRCA. He is currently giving a lecture series on Pattern Classes of Permutations. Mike will stay in St Andrews until the end of this year.
- Welcome to all the summer students in all research groups. Summer students in the Algebra and Combinatorics Research Group this year are Michael Matthes, Andrew Ferguson, Dorothy Winn, Andreas Weinert, Phillip Felton and Adam Calhoun. Undergraduate students working at CREEM this summer are Dave Miller, who is using his programming skills to add new features to the Distance software we give away to wildlife biologists, and Richard Parker, who is working on methods for fitting and comparing models of wildlife population dynamics; both are under the supervision of Len Thomas.
- Goodbye to Delaram Kahrobaei who has moved back to New York to take up a post at New York City College of Technology. We wish her all the best for the future.
- James Trimble will be leaving us after only 1 year as a PhD student in order to take up teacher training in Edinburgh. We wish him all the best for the future.

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## CONGRATULATIONS

- Congratulations to Gavin Donnelly on the successful defence of his PhD thesis “Magnetohydrodynamic oscillations in the solar corona” at the end of April.

- Barry Ridge has been awarded an MPhil degree on his dissertation on “Techniques for computing the exact Hausdorff measure with application to a Sierpinski sponge in  $R^3$ ”. Barry is now pursuing a PhD in computer vision at the University of Ljubljana.
  - At the International Biometric Conference last month, the paper entitled “Spatial models for line transect sampling” by Sharon Hedley and Steve Buckland was awarded best paper for 2004-05 by the Journal of Agricultural, Biological and Environmental Statistics.
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## SEMINARS, LECTURES, RESEARCH VISITS

- Ersin Ozugurlu gave a seminar at BAMC 2006 meeting in Keele University on April 24-27th, entitled “Interaction of two unequal-intensity vortices in quasi-geostrophic flows”. He also gave a talk at the 19th Scottish Fluid Mechanics meeting in Aberdeen on May 24th.
- Brigitta von Rekowski gave a talk at MIST/UKSP 2006 meeting in Aberystwyth (10–13 April), and a talk at 36th COSPAR Scientific Assembly, held on July 16-23 in Beijing.
- Irena Vorgul attended the 13th International Congress on Plasma Physics in Kiev in May and presented two posters.
- Peng-Fei Chen gave an invited seminar in MSSL at University College London on May 4, and another one in DAMTP at University of Cambridge on May 15, 2006.
- The National Centre for Statistical Ecology (a joint centre between St Andrews, Kent and Cambridge) had its first annual workshop in St Andrews May 15-19. Over 40 people attended, mostly from Kent, Cambridge and St Andrews, but also Stephen Baillie and Steven Freeman from the BTO, Ian Jolliffe, a meteorological statistician, John Simmonds and Rob Fryer from the Marine Laboratory at Aberdeen, Paul Blackwell from University of Sheffield, and Giacomo Tavecchia from IMEDEA in Italy. Workshop sessions on methods for fitting models of population dynamics to time series of data early in the week were followed by conference-style talks, with a very full and stimulating programme. For light relief, there was an excursion up East Lomond on the Wednesday afternoon.

- Martyn Quick spoke at the Heriot-Watt/Edinburgh Algebra Seminar on 16th May. On 19th-20th May, he attended Groups in Galway 2006 as an invited speaker and gave a talk entitled “Groups whose proper quotients are virtually abelian”. Colin Campbell also attended this meeting.
- Freda and David Kemp gave invited seminars on Modelling Over- and Under-Dispersion Using  $q$ -Distributions (Freda) and Parameter Estimation for Some  $q$ -Hypergeometric Distributions (David) at McMaster University, Hamilton, Ontario in late May, and attended the Annual Meeting of the Statistical Society of Canada. In late June, they were both invited speakers at the International Conference on Mathematical and Statistical Modeling (ICMSM 2006) in honor of Enrique Castillo at the University of Castilla-La Mancha, Ciudad Real, Spain. Freda’s paper was on The Discrete Half-Normal Distribution and David’s was on Parameter Estimation for Certain  $q$ -Hypergeometric Distributions.
- Nik Ruskuc, Sophie Huczynska, Vince Vatter, Steve Waton, Robert Brignall and Fiona Brunk attended the Fourth International Conference on Permutation Patterns in Reykjavik, Iceland, 12-16 June. Vince, Steve and Robert gave well-received lectures at the conference. Following the conference, Michael Albert from the University of Otago, Dunedin, New Zealand, visited St Andrews for three weeks. The next conference in the series will be hosted by St Andrews in June 2007.
- Ruth King and Len Thomas gave talks at a meeting of the General Applications Section of the Royal Statistical Society in London in June, and again at the International Biometrics Congress in Montreal in July. Ruth’s talks were on Bayesian estimation of closed population size using Markov Chain Monte Carlo methods; Len’s were on Bayesian estimation of grey seal population dynamics using particle filtering methods.
- Fiona Brunk attended the Postgraduate Combinatorial Conference on 21-23 June in Cardiff, where she gave talk entitled “Intersecting sets of partial permutations”. Fiona has bravely agreed to host the next conference in this series at St Andrews next summer.
- Irena Vorgul and Alan Cairns attended the European physical society Conference on Plasma Physics in Rome in June and were co-authors in a number of poster and oral presentations.

- Gary Mullen (Penn State University) visited Sophie Huczynska at the end of June. He gave a Pure Mathematics Colloquium entitled “Value sets of polynomials over finite fields” on 28th June.
- Nik Ruskuc and Alan Cain attended the Heriot-Watt Semigroup Day on 5 July. Alan delivered an invited lecture on their recent joint work.
- Colin Campbell and George Phillips attended the Twelfth International Conference on Fibonacci Numbers and their Applications which was held at San Francisco State University from 17-21 July. Colin spoke on “Search techniques, Fibonacci lengths and centro-polyhedral groups” and George spoke on “On the Zeckendorf representations of powers of Fibonacci numbers”. The series began in 1984 and the fifth conference was held in St Andrews in 1992.
- Ineke De Moortel gave an invited seminar entitled “Numerical Simulations of 3D Magnetic Reconnection due to Footpoint Motions” at the Culham Laboratory on 21st July and visited Bob Rosner in Chicago from 28th July till 5th August.
- Alan Hood and Ineke De Moortel attended the UK Solar Community Meeting held in Manchester on 24th July. Alan chaired the meeting.
- John O’Connor reports that on 31st July the MacTutor History of Maths archive celebrated his birthday by downloading a record 548,664 pages in a single day.
- Alan Cairns will give an invited talk at an International Workshop on Frontiers in Plasma Physics being held in Trieste at the end of August.
- Alan Cairns has been invited to speak at a meeting being held in Aberdeen in September to mark the 150th anniversary of the appointment of James Clerk Maxwell to a chair in Aberdeen.
- Sophie Smout has been appointed as a post-doctoral research associate to work with Ruth King on “Demography and Heterogeneous Data: New Approaches to Ecological Process Models”. She will start her position on 1st January 2007.

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## NEXT ISSUE

Please send material for the next Newsletter to: [mcsupdate@mcs.st-andrews.ac.uk](mailto:mcsupdate@mcs.st-andrews.ac.uk)