

Dept. of Applied Statistics, The Harry Pitt Building,
The University, Whiteknights Road, Reading, Berks, RG6 2FN
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17th Research Students' Conference in Probability and Statistics

Monday 21st March - Thursday 24th March
With thanks for the generous sponsorship of:

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CONFERENCE TIMETABLE

Monday 21st March

- 14:00-18:00 Conference registration, Wessex Hall foyer
15:00-17:00 Tea and coffee
17:00 Bar open
18:30 Dinner
20:00 Bar quiz
- 08:00-08:45 Breakfast
09:00-09:15 Single Session
09:00-09:15 *Welcome*. Professor Roger Williams, Vice-Chancellor of Reading University.

Tuesday 22nd March

Parallel sessions

- 09:15-09:35 Jon Barry (Lancaster)
A lobster learning experiment.
Chair: Norman Dalgleish
- 09:35-09:55 Gareth Staton (Oxford)
Predicting the distribution of tsetse flies in Africa.
- 09:55-10:15 Louise Burt (Reading)
Hazard in the Caribbean.
- 10:15-10:35 Adnan Mander (Sheffield)
Spatial competition of plants.
- 10:35-10:55 Angela Dhibasi (Glasgow)
Models for the spatial distribution of wildlife populations.
- 10:55-11:15 Tea and coffee

Parallel sessions

- 09:15-09:35 Ben Jordan (Durham)
The two-house leprechaun problem.
Chair: Uli Hirth
- 09:35-09:55 Simon Garside (Lancaster)
State-space modeling of road traffic networks.
- 09:55-10:15 Amanda Hardie (Exeter)
A fresh, new look at Markov decision processes.
- 10:15-10:35 Ester Yan (Imperial)
Markov models for handwritten digit recognition.
- 10:35-10:55 Husnain Bokhari (Bradford)
Non-homogeneous Poisson models for computing software reliability.

Session A Chair: Norrah Al-Kandari

- 11:15-11:35 Ben Gordon (Sheffield)
Looking at outliers in multivariate data.

Session B Chair: Sue Todd

- 11:15-11:35 Nicola Camp (Sheffield)
The Gibbs sampler approach to determining genetic mechanisms of traits.

Session A (continued)

- 11:35-11:55 Kay Penny (Aberdeen)
Statistical analysis of multivariate laboratory data in clinical trials.
- 11:55-12:15 James Shaw (Edinburgh)
Contaminant detection in visual inspection of seed samples.
- 12:15-12:35 Richard Saldaña (Oxford)
A quasi-Newton procedure for estimating the parameters in a hierarchical interaction model.
- 12:35-12:55 David Laws (Newcastle)
Multivariate screening designs.
- 13:00 Buffet lunch

Session A
Chair: Jo Chen

- 14:00-14:20 Gary Brown (Birmingham)
Masking.
- 14:20-14:40 Gareth Ambler (Sussex)
Analysing myocardial infarction data with varying coefficient models.
- 14:40-15:00 Konstantinos Skouras (University College, London)
TBA
- 15:00-15:20 Aishah Hanzah (Bristol)
Some robust procedures for parameter estimation in generalized linear models.
- 15:20-15:40 Adam Crisp (University College, London)
Nonregular likelihoods in heteroscedastic regression models.
- 15:40-16:10 Tea and coffee

Session A
Chair: Shafeegah Abdullah

- 16:10-16:30 Stephen Corcoran (Oxford)
Some aspects of empirical likelihood theory.
- 16:30-16:50 Elizabeth Ackenley (Lancaster)
Maximum likelihood fitting of non-exponential family regression models.
- 16:50-17:10 Phil Bowtell (Reading)
The problem with circles is ...

Session B (continued)

- 11:35-11:55 Heather Cordell (Oxford)
Statistical methods in the genetic analysis of type 1 diabetes.
- 11:55-12:15 Aruna Bansal (Sheffield)
Genetic algorithm approach to ordering loci.
- 12:15-12:35 Jonathan Tyrer (Sheffield)
Patterns for evolutionary stable strategies.
- 12:35-12:55 Ryan Cheal (Bath)
E-M algorithms in pedigree analysis.

Session B
Chair: Helen Millins

- 14:00-14:20 Chris Weir (Glasgow)
Clinical diagnosis of the acute stroke syndrome.
- 14:20-14:40 Roshini Sooryaratchi (Reading)
Comparison of survival curves when the hazards are not proportional.
- 14:40-15:00 Sue Todd (Reading)
Confidence interval calculation for a sequential clinical trial of binary responses.
- 15:00-15:20 Margaret Macleod (Glasgow)
Record linkage and the West of Scotland cohort study.
- 15:20-15:40 Seyed Sanei (Liverpool)
Statistical methods in cohort studies.

Parallel Sessions

Session B
Chair: Gordon Hay

- 16:10-16:30 Emma McCoy (Imperial)
The discrete wavelet transform and power-law processes.
- 16:30-16:50 Anastasia Kakou (University College, London)
TBA
- 16:50-17:10 Sean Phayre (Strathclyde)
The role of spatial temporal modelling in the world of self similarity.

Session A (continued)

- 17:10-17:30 David Brown (University College, London)
TBA
- 17:30-17:50 Abdol Kasekh (Sheffield)
Diagnostics in functional error in variables model.
- 18:00 Bar open
- 19:00 Dinner
- 20:00 Meet the sponsors' session

08:00-08:45 Breakfast

Wednesday 23rd March

Parallel Sessions

Session A

Chair: Heather Cordell

- 09:00-09:20 Gordon Hay (Strathclyde)
Modelling the spread of HIV among injecting drug users.
- 09:20-09:40 Alex McConnachie (Glasgow)
The statistical analysis of exercise test data.
- 09:40-10:00 Helen Milins (Reading)
The use of cluster analysis to describe the food consumption of middle-aged Scots.
- 10:00-10:20 Barbara Murray (Glasgow)
Statistical analysis of low birthweight in Glasgow.
- 10:20-10:40 Cariona Hayes (Glasgow)
Comparing surgical performance.
- 10:40-11:10 Tea and Coffee

Session A
Chair: Andrew Holmes

- 11:10-11:30 Christine Sexton (Southampton)
Designs for quality improvement experiments.
- 11:30-11:50 Tim Holliday (Birmingham)
Design and analysis of engine mapping experiments.

Session B (continued)

- 17:10-17:30 Andrew Kyprianou (Sheffield)
Martingale convergence in the branching random walk.
- 17:30-17:50 Sivarajalingam Janarthanan (Sheffield)
Central limit results in spatial branching processes.

Parallel Sessions

Session B

Chair: Phil Bowtell

- 09:00-09:20 Kah Khoo (Kent)
Testing of heteroscedasticity in time series.
- 09:20-09:40 Brian Moretta (Heriot-Watt)
Coupling on a single link.
- 09:40-10:00 Uli Hirth (Royal Holloway and Bedford)
Probabilistic methods in number theory.
- 10:00-10:20 Gholiam Mohshami Borzadaran (Sheffield)
Some characterisation results based on Bhattacharyya matrices and the Fisher information.
- 10:20-10:40 Saïd Rezakhat (Queen Mary and Westfield)
An upper bound for the expected number of real zeros of a random algebraic polynomial.

Parallel Sessions

Session B
Chair: James Carpenter

- 11:10-11:30 Neil Spencer (Lancaster)
Using lagged multilevel models to analyse data from schools: an example.
- 11:30-11:50 Andrew Prevost (Southampton)
Multilevel structures require multilevel models - but how?

Session A (continued)

- 11:50-12:10 John Quigley (Paisley)
Reliability engineering of complex electronic systems.
- 12:10-12:30 Khizar Khan (Bradford)
Using optimisation methods to scale examination marks.
- 12:30-12:50 Felix Lam (Imperial)
Forecasting default loss of loan agreements by using statistical models.
- 13:00 Buffet lunch

Session A

Chair: Jon Barry

- 14:00-14:20 Anthony Ledford (Lancaster)
Near independence in multivariate extremes.
- 14:20-14:40 Norman Dalgleish (Edinburgh)
Complex demodulation.
- 14:40-15:00 Joe Otten (Sheffield)
Storm models.
- 15:00-15:20 Mark Dixon (Lancaster)
Statistical analysis of extreme sea-levels around the UK.
- 15:20-15:40 Paul Hutchinson (St. Andrews)
Classification of daily ozone curves.
- 15:40-16:10 Tea and coffee

Session A

Chair: Richard Saldanha

- 16:10-16:30 Teresa Smith (MRC, Cambridge)
Bayesian graphical modelling applied to random-effects meta-analysis.
- 16:30-16:50 Adão Hengges (Sheffield)
Predictive distributions in binary models with missing data.
- 16:50-17:10 Marc Kennedy (Nottingham)
Bayesian inference on random functions.

Session B (continued)

- 11:50-12:10 Pedro Silva (Southampton)
Estimating distribution functions with auxiliary information using poststratification.
- 12:10-12:30 Irini Moustaki (LSE)
Latent models with mixed manifest variables.
- 12:30-12:50 Saghir Bashir (MRC, Cambridge)
Mismeasurement of independent variables in epidemiology.

Parallel Sessions

Session B

Chair: Kah Khoo

- 14:00-14:20 Sara Morris (Lancaster)
An application of the one-dimensional K-function.
- 14:20-14:40 Eileen Wright (Glasgow)
Estimating median survival times using nonparametric smoothing techniques.
- 14:40-15:00 Julia Kelsall (Lancaster)
Kernel estimation of a density ratio.
- 15:00-15:20 Seokyoung Hahn (Manchester)
Bootstrap choice of the smoothing parameters in kernel based estimation of density derivatives.
- 15:20-15:40 Dave Signorini (Open University)
Kernel methods for binary regression.

Parallel Sessions

Session B

Chair: Dorn Neary

- 16:10-16:30 Simon Fear (Liverpool)
Missing data in repeated binary measures.
- 16:30-16:50 Nicola Spiers (De Montfort)
Self-rated health as a risk marker for health outcomes in elderly populations.
- 16:50-17:10 Michael Smith (Ken)
The design of a cross-over trial with many periods.

Session A (continued)

- 17:10-17:30 Darren Wilkinson (Durham)
Bayes linear covariance belief revision.
- 17:30-17:50 Eduardo Gutierrez-Peña (Imperial)
Conjugate parametrizations for natural exponential families.
- 18:00-23:45 Bar open
- 19:00 Conference dinner

08:00-08:45 Breakfast

Thursday 24th March

Session B (continued)

- 17:10-17:30 Christopher Sutton (Leicester)
Repeated measurements of covariates in interval-censored survival data.
- 17:30-17:50 Rory Wolfe (Southampton)
The use of ordinal response models in telecommunications research.

Parallel Sessions

Session A
Chair: Louise Bart

- 09:00-09:20 Andrew Holmes (Glasgow)
Hallucinating schizophrenics - imaging transient thoughts.
- 09:20-09:40 Steven Zimeras (Bradford)
Markov random fields in image analysis.
- 09:40-10:00 Gayle Allum (Bradford)
The analysis of remotely sensed archaeological data.
- 10:00-10:20 Paul Greenfield (Bristol)
TBA
- 10:20-10:40 John Gavin (Bath)
Sub-pixel restoration.
- 10:40-11:10 Tea and Coffee

Session A
Chair: Marc Kennedy

- 11:00-11:30 Dom Neary (Reading)
The Gibbs sampler and repeated ordinal measures.
- 11:30-11:50 Karen Vines (MRC, Cambridge)
Bayesian analysis of case-control studies.
- 11:50-12:10 Boris Choy (Imperial)
Random effect models with Gibbs sampler.

Parallel Sessions

Session B
Chair: Karen Vines

- 09:00-09:20 James Carpenter (Oxford)
Confidence regions for parameters in implicit models.
- 09:20-09:40 David Golya (Sheffield)
Environmental Extremes.
- 09:40-10:00 Fiona Tweedie (West of England)
The Cusim controversy.
- 10:00-10:20 Niall Adams (Liverpool John Moores)
Parallel aspects of computer-intensive statistical methods.
- 10:20-10:40 Maria Efstathiou (Imperial)
Efficient simulation of marginal posterior distributions.

Session B
Chair: Michael Smith

- 11:10-11:30 Baodong Zhao (Reading)
Design for two-way blocking for variaty trials.
- 11:30-11:50 Luzia Trinca (Reading)
Blocking response surface designs.
- 11:50-12:10 Poivearp Chingpu (Goldsmiths)
A group theoretic approach to $(4x4)$ semi-latin squares.

Session A (continued)

12:10-12:30 Simon Foulkes (Bristol)
MCMC - regenerative simulation.

12:30-12:50 Jouni Kuha (Southampton)
Simulation methods of estimation for models with covariate measurement error.

13:00 Buffer lunch

Session B (continued)

12:10-12:30 Abdol-Rahim Shadlaze (Southampton)
Nonparametric tests for interaction in a two-way layout with one observation per cell.

CONFERENCE CLOSES

The welcome address and all session A talks will be held in the large lecture theatre in the Faculty of Letters and Social Sciences (FOLSS) building. All session B talks will be held in the small lecture theatre in the FOLSS building. Tea and coffee will be served on the first floor balcony. Booklets of abstracts will be issued on arrival.

Rooms should be vacated by 9.30am on 24th March and the keys returned to reception. An area will be provided for luggage to be left.

Next year's conference will be held at Keele College, Oxford University from the 26th to the 29th of March.

Book displays during the conference by Wiley and Chapman and Hall. With thanks to Wiley for donation of the display books to the conference.

List of Participants

Name	Research Interest	Year	Talk	Exeter			
Aberdeen S. Abdullah Noriah Al-Kandari Kay Penny	Time series Multivariate analysis Multivariate analysis, outliers in multivariate data	1 1 2	N N Y	Exeter Amanda Hardie Anwer Khurshid Ken Powell	Cows, cows in Operational Research, dairy farm models Biostatistics Wavelet analysis, Fourier transforms	2 3 1	Y N N
Bath Ryan Cheal Jonathan Denne John Gavin	Pedigree analysis, Monte Carlo Markov chain methods Sequential methods Image analysis	3 1 2	Y N Y	Glasgow Caledonian Jim Lewsey	Experimental design (statistical power, unbalanced designs, Teguchi)	1	N
Birmingham Gary Brown Gary Heslop Tim Holliday	Regression diagnostics Medical statistics Industrial statistics	3 1 2	Y N Y	Glasgow Angela Dhiblasi Cautona Hayes Andrew Holmes Margaret Macleod Alex McConnachie Barbara Murray Athene Polymenis Chris Weir Eileen Wright	Spatial statistics Surgical audit Image processing, medical imaging Record linkage Statistical analysis of exercise test data Variable selection Mixture distributions Expert systems Survival analysis: nonparametric smoothing methods	1 3 3 2 1 3 1 1 3	Y Y Y Y Y Y N Y Y
Bradford Gayle Allum S.M.H. Bokhari K. H. Khan	Analysing archaeological images/data Reliability and software reliability Optimisation for parametric estimation in reliability models	1 1 2	Y Y Y	Goldsmiths' College, London Poly E. Chigbu	Design of experiments	2	Y
Steven Zimeras Yong Z. Zubairi	Medical image processing Medical statistics	1 1	Y N	Heriot-Watt Isabel Cordeiro Brian Moreta Douglas Wright	Stochastic processes, multiple state models Loss networks Financial modelling	2 3 1	N Y N
Bristol Rus Bowater Chung Chang Simon Foulkes	Image analysis Stochastic analysis Application of Markov chain Monte Carlo simulation methods to generalised linear models Image analysis Robust regression methods	1 1 2 3	N N Y Y	Imperial College S. T. Boris Choy Maria Efstathiou Eduardo Gutierrez Felix Lam Emma McCoy Ester Yan	Bayesian statistics Bayesian inference Bayesian inference / smoothing Bayesian statistics / Time series analysis Spectral analysis, wavelets Gibbs sampler (MCMC) simulation	2 2 3 3 3 2	Y Y Y Y Y Y
Hywel Jones Athanasios Lopotatzidis Ian Smith	"Semi-parametric" regression Functional data analysis	1 1 1	N N N	IPH, Cambridge Jane Skinner	Medical statistics (esp. error in exposure measurements, counter-matched case-control studies)	1	N
City Masoud Roudbari	Model building	2	N	Keele Alison Pryce	Time series (Medical applications)	3	N
De Montfort Nicola Spiers	Analysis of longitudinal categorical data with regard to the health of elderly populations	2 (PT)	Y	Kent K. S. Khoo Michael Smith	Time series Analysis, experimental design, cross-over trials	3 3	Y Y
Durham Ben Jordan Darren Wilkinson	Stochastic processes, Markov decision processes The theory and application of Bayes linear methods	2 2	Y Y	Lancaster Elizabeth Ackerley	Spatial statistics Spatial statistics (crustaceans) Extreme value modelling State-space modelling	3 (PT) 4 3 2	Y Y Y Y
Edinburgh Norman Dalgleish James Shaw	Time series and climate Outlier detection in multivariate data	3 3	Y Y	Jon Barry Mark Dixon Simon Gerstide Louise Harper Julia Kelsall	Spatial and extreme modelling Spatial epidemiology, smoothing	1 1 2	N N Y

Gillian Lancaster	Generalised linear modelling use of census data to create deprivation indices & related problems	1	N			
Anthony Ledford	Extremes and ecological applications	2	Y			
Sara Morris	Spatial epidemiology	3	Y			
Michael Robinson	Extreme values	1	N			
Pete Sewart	Graphical models, longitudinal data	1	N			
Neil Spencer	Multilevel models in educational research	3	Y			
Leeds						
M. R. Faghini	Shape analysis and spatial analysis	2	N			
M. Mohammadzadeh	Statistical spatial data analysis	2	N			
Leicester						
Chris Sutton	Survival data	5 (PT)	Y			
Liverpool						
Simon Fear	Categorical longitudinal data	2	Y			
Seyed Sanei	Biostatistics (statistical methods in cohort studies)	2	Y			
Liverpool John Moores						
Niall Adams	Computer-intensive statistics, parallel processing, automated chromosome classification	2	Y			
LSE						
Irini Moustaki	Latent models, measurement error in surveys	2	Y			
Manchester						
Seokyoung Hahn	Nonparametric density estimation	2	Y			
Manchester Metropolitan						
Jez Penzer	Time series (calculating likelihood function for multivariate models with incomplete data)	2	N			
MRC Biostatistics Unit, Cambridge						
Saghir Bashir	Mismeasurement error	1	Y			
Teresa Smith	Meta-analysis, Bayesian methods, cervical cancer	3	Y			
Karen Vines	Bayesian methodology (esp. Gibbs sampler), epidemiology	2	Y			
Newcastle						
Rahim Chinipardaz	Discriminant analysis in time series	2	N			
Simon Greatrix	Screen designs using decision theory	3	N			
David Laws	Multivariate and queuing	3	Y			
H. Mahjub	Optimal sequencing of a collection of screens	1	N			
Cariona McCrone	Generalised linear models, bioassay	1	N			
Yadollah Mehrabi	Medical statistics	1	N			
Nourad Mousavinasab	Time series (outliers and change point)	2	N			
Azami Zaharim						
North London						
G. Portides	GLM's, robust regression	2	N			
Northumbria						
Eunan Conway		1	N			
Nottingham						
Marc Kennedy	Bayesian numerical analysis, Bayesian computation	2	Y			
Eliwyn Powell	Modelling of extreme wind speeds	1	N			
Open University						
Dave Signorini	Nonparametric smoothing	2	Y			
Keming Yu	Conditional smooth quantile estimation, nonparametric smooth method	1	N			
Oxford						
James Carpenter	Medical statistics, Monte Carlo inference, bootstrapping	2	Y			
Stephen Corcoran	Likelihood theory	2	Y			
Heather Cordell	Statistical methods in genetics	2	Y			
Caroline Kalkandara	Classification and neural networks	1	N			
Richard Saldanha	Multivariate analysis, expert systems	3	Y			
Gareth Staton	Spatial statistics, image analysis, classification, applications in physical and biological sciences	2	Y			
Paistley						
John Quigley	Reliability engineering of complex electronic systems	1	Y			
Queen Mary and Westfield College, London						
S. Rezkhan	Random power series	2	Y			
Reading						
A. Adnan	Applied statistics	1	N			
Phil Bowtell	Non-linear functional relationships	2	Y			
Louise Burt	Spatial and geological statistics	3	Y			
Julian Higgins	Meta analysis / Medical statistics	1	N			
Norberto Lavoretti	Design of experiments, linear models	2	N			
Heien Millins	Epidemiology	3	Y			
Don Neary	Ordinal repeated measures, the Gibbs sampler	3	Y			
Bernard North	Survival analysis	1	N			
Roshini Sooriyarachchi	Sequential methods and decision making at interim inspections	3	Y			
Lee Tang	Experimental design	1	N			
Sue Todd	Sequential analysis, clinical trials	3	Y			
Luiza Trinca	Design of experiments	2	Y			
Pi-wen Tsai	Experimental design	1	N			
B. Zhao	Experimental design	3	Y			
Royal Holloway and Bedford New College, London						
Uti Hirtz	Probability and probabilistic number theory	1	Y			
Sheffield						
Artina Bansal	Mathematical/statistical applications to genetics	1	Y			
Nicki Camp	Medical and biological mathematics (esp. genetics)	2	Y			
David Golva	Extreme values	2	Y			
Ben Gordon	Outliers in data	3	Y			
Adão Henges	Medical diagnosis, Bayesian inference, logistic regression	3	Y			
S. Janarthanan	Branching processes, probability theory	1	Y			
Andrew Kyritsiou	Branching processes	1	Y			
Ade Mander	Cellular automata and statistics	1	Y			
Gholiam Borzadaran	Characterization in statistical inference	1	Y			

