ROYAL STATISTICAL SOCIETY

DATA | EVIDENCE | DECISIONS

RSS International Conference

for all statisticians and users of data

Conference directory

5 – 8 September 2016, Manchester

www.rss.org.uk/conference2016

Welcome

It is my great honour to welcome you all to Manchester for the **2016 RSS Conference**! We have chosen Manchester as our venue for this year's Conference as it is the 2016 European City of Science, reflecting its contribution to scientific discovery, innovation and industry. I am particularly looking forward to visiting the Museum of Science and Industry for the Welcome Reception and getting a feel for the city's achievements in these fields.

Myself and the rest of the Conference Board have produced an impressive line-up of invited and contributed sessions, which have been fully streamed into their relevant fields, distinguished plenary speakers, as well as a comprehensive selection of professional development sessions. We are also delighted to have a Ordinary Meeting at Conference for the first time ever!

This year, the Government Statistical Service (GSS) Conference will run alongside the RSS Conference, giving you the freedom to attend sessions at either Conference on Thursday. The GSS Conference has some excellent speakers from both inside and outside government and I hope that you will all take advantage of this unique opportunity. The two conferences will also be coming together at the Conference Dinner which will take place at The Monastery, a truly stunning venue and the perfect way to close the RSS Conference.

The RSS Conference remains a conference that welcomes all statisticians and users of data, providing a crucial platform for the discussion and debate of statistical topics. It is an opportunity for networking, or just catching up with friends. I hope that you have an inspiring and productive conference!

Jen Rogers
RSS Honorary Officer, Meetings and Conferences

Don't forget to download the conference app!

Go to **http://bit.ly/RSS-app** on an iPhone, iPad or Android device. You will be taken to the correct app store to download the app. The url is case sensitive.

Or **scan** this **QR code**

General event information

Badges

Conference attendees are asked to wear their badges and lanyards at all times while in the Conference. Catering staff may not be able to serve individuals who cannot be identified as conference attendees.

Lost badges will be replaced at the discretion of the conference organisers. A replacement fee may be charged.

Catering (Daytime)

Lunch as well as tea/coffee at the mid-morning break and the mid-afternoon break is provided as part of your conference fee. Lunch will be served in Eats Restaurant on the ground floor of University Place (adjacent to the exhibition/poster area). Morning and afternoon refreshments, as well as dessert at lunchtime, will be served in the exhibition area in The Drum (ground floor University Place).

Dietary requirements

For those attendees who have notified the organisers of special dietary requirements* the following arrangements will be made:

- Lunchtimes – please ask a member of catering staff
- Thursday night dinner – please make yourself known to the RSS staff at the registration when you arrive at the venue.

Please note that at both the receptions on Monday evening and Wednesday evening canapés are being served

- The conference organisers have tried to cater for all dietary requirements, however for some social events the venues may be limited on what they can accommodate. If you are concerned about this, please contact the RSS conference team.

*** N.B.** There will be vegetarian options provided at lunchtime and the evening receptions which do not require any special arrangements but for the conference dinner vegetarians should talk to the RSS registration staff as above.

Luggage

A luggage store will be available in 2.217 on the second floor of University Place.

Mobile phones

We ask that you switch your mobile phones and other hand held devices to silent when you are in sessions.

Photography and Recording sessions

The Society will have a photographer taking photographs in many sessions and at social events. The Society may use photographs taken in publications and in future publicity materials. If you would prefer your photograph not to be used in this way please contact the conference office.

Please note that the Society will also be recording a number of key sessions during the conference which will be made available from the Society's website in due course.

Registration and information desk

The registration desk can be found in The Drum (ground floor of University Place) opposite the main entrance from Oxford Road.

The Registration desk will open at the following times:

Monday 5 September	**3pm – 6.30pm**
Tuesday 6 September	**8.30am – 6pm**
Wednesday 7 September	**8.30am – 7pm**
Thursday 8 September	**8.30am – 2pm**

Session locations

Plenary sessions will be held in Lecture Theatre B. All other sessions will be held in one of 7 rooms on the first, second, third and fourth floors of University Place.

Social events

If you have booked to attend one of the evening social events this will be indicated on your conference badge. There are no tickets for these events, however you will be required to present your badge on entry to the Welcome Reception and the Conference Dinner, and will only be served at the Awards/Poster Reception if you are wearing your badge.

Please refer to the information board next to the registration desk for details of the coach transfers to the conference dinner. As the dinner is fully booked please do not board the coaches unless you have a place at the dinner.

Speakers desk

For speakers wishing to submit their presentations during the conference, the speakers' desk will be located adjacent to the registration desk in The Drum (ground floor of University Place).

Stewards

RSS stewards (in white RSS t-shirts) and RSS staff members (identified by their badges) will be happy to assist you throughout the conference.

Twitter

You can follow the conference on Twitter: **RSSAnnualConf** – please use the hashtag **#RSS2016Conf**

Wi-fi Access

The University of Manchester provides free wi-fi access – attendees will find a unique username and password on their conference badges which will enable connection to the '**UoM wifi**' network. *Please note both the username and password are case sensitive and must be entered in full. After 10 minutes of inactivity you will be automatically logged out.*

Exhibitors at RSS 2016 Conference

WILEY is a global provider of knowledge and knowledge-enabled services that improve outcomes in areas of research, professional practice and education. Through the **Research** segment, the Company provides digital and print scientific, technical, medical, and scholarly journals, reference works, books, database services, and advertising. The **Professional Development** segment provides digital and print books, online assessment and training services, and test prep and certification. In **Education**, Wiley provides education solutions including online programme management services for higher education institutions and course management tools for instructors and students, as well as print and digital content.

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offer a range of analytics services to the pharmaceutical, medical diagnostics and devices companies, biotechnology, CROs, biobanks and healthcare providers. Our team provide data management, programming and statistical support for research studies including predictive modelling, clinical trials, data exploration and real-world data. Our team have specialist experience in biomarker discovery and development, precision medicine and software development.

Our services have one common aim – to add value to your data.

CAMBRIDGE UNIVERSITY PRESS is a not-for-profit organisation that advances learning, knowledge and research worldwide. It is an integral part of the University of Cambridge and for centuries has extended its research and teaching activities through a large range of academic and educational books, journals, and digital products.

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ROYAL STATISTICAL SOCIETY **2017 Conference Glasgow** – visit the stand to find out more about next year's host venue, share your ideas for the programme and pick up some Glasgow goodies.

Minitab is the leading statistical software for quality improvement and statistics education and is used at more than 4,000 colleges and universities worldwide. Our latest release, Minitab 17, is packed with new and improved statistics that give you more analytical power and greater insight. The expanded Assistant menu guides users through hypothesis tests, regression, DOE, measurement systems analysis, control charts, and capability analysis—and helps interpret the results. Visit **www.minitab.com** for more information.

RSS Lounge: located in the foyer on the 1st floor. Come and join RSS staff and members for refreshments during conference breaks. Every day, we have a schedule of 'drop in sessions' so do pop by and see what's on, or just come and have a chat.

Exhibition Plan

1 Wiley

2 Taylor & Francis/CRC Press

3 Exploristics

4 Cambridge University Press

5 Oxford University Press

6 SAGE (Wednesday/Thursday)

7 Glasgow – 2017 Conference

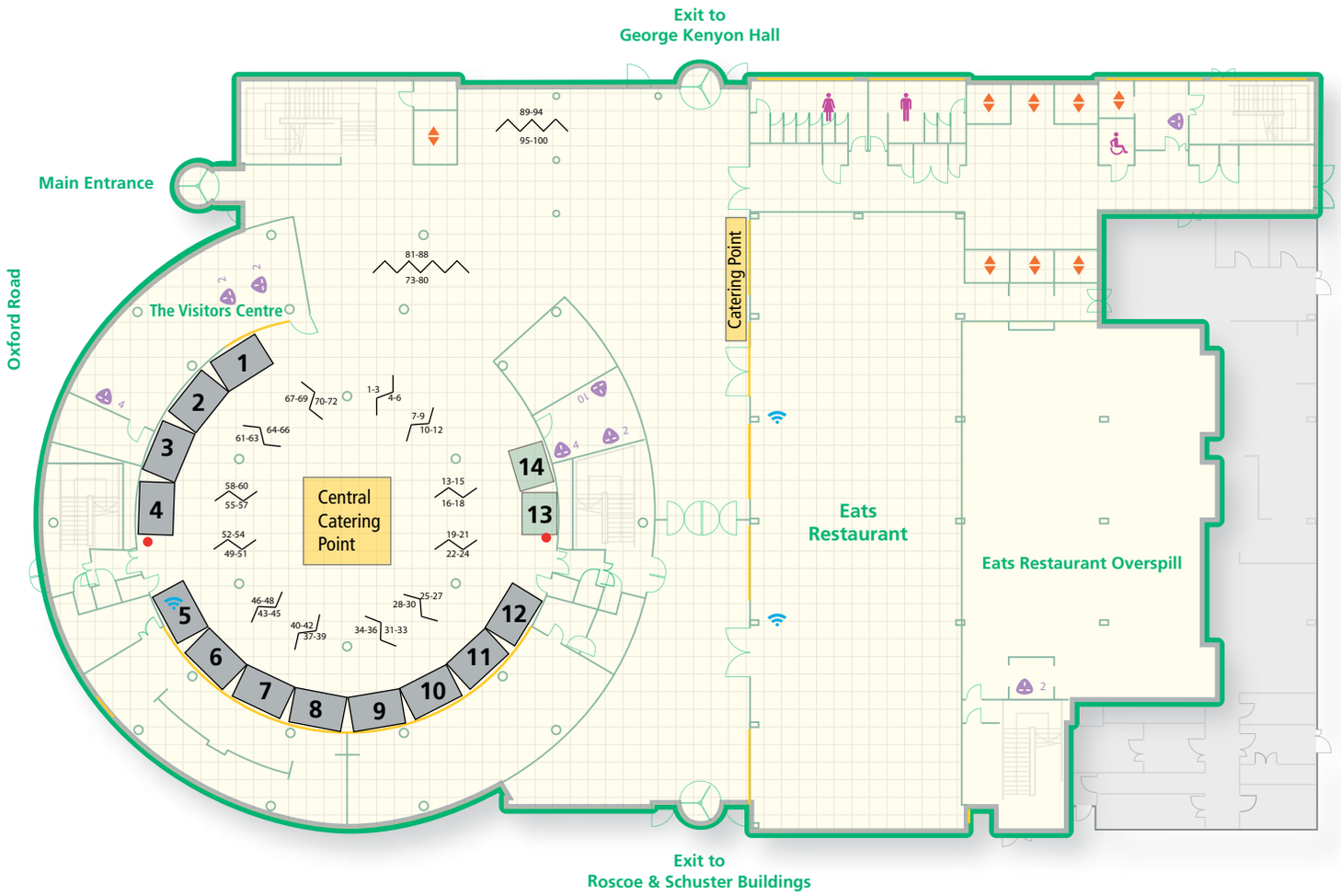
8 Minitab (Wednesday/Thursday)

9 Administrative Data Research Centre – England (GSS Conference)

10 Mango Solutions (GSS Conference)

11 Office for National Statistics (GSS Conference)

12 ESRI UK (GSS Conference)



G floor

Lift

Toilets

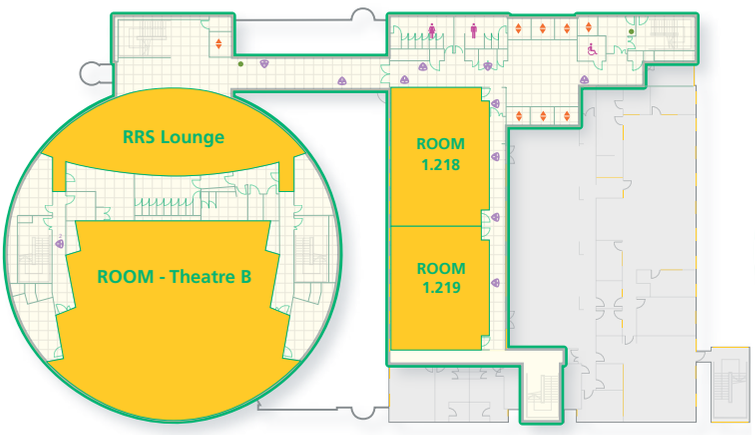
Power Point

WiFi

Fire Call Point

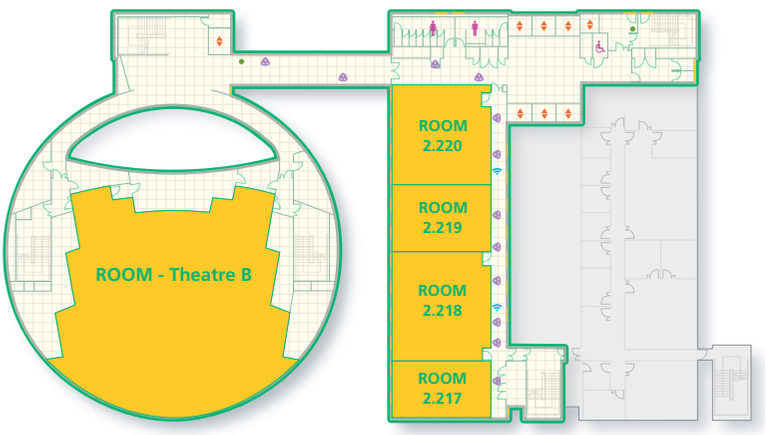
Refuge Call Point

Venue plan



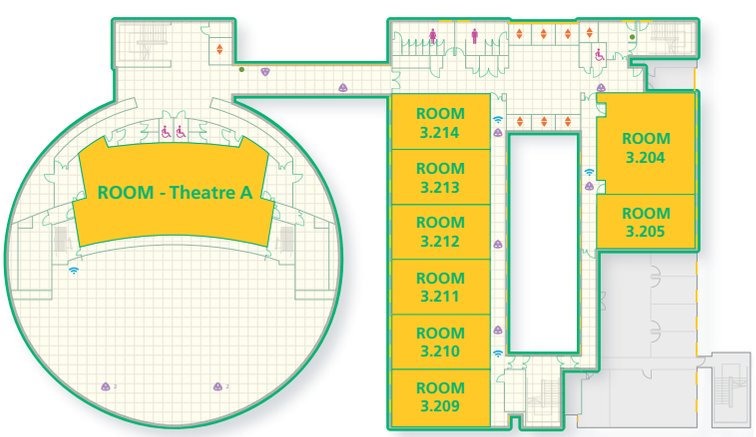
1st floor

Lift
Toilets
Power Point
WiFi
Fire Call Point
Refuge Call Point



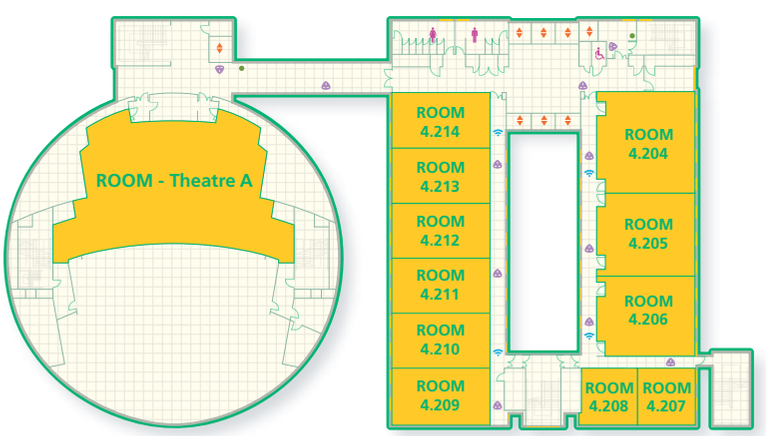
2nd floor

Lift
Toilets
Power Point
WiFi
Refuge Call Point



3rd floor

Lift
Toilets
Power Point
WiFi
Fire Call Point
Refuge Call Point



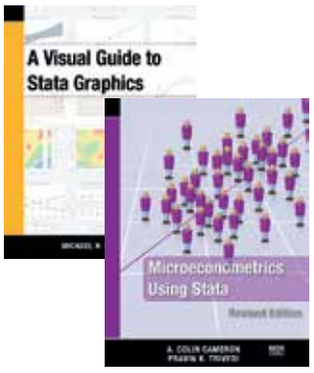
4th floor

Lift
Toilets
Power Point
WiFi
Fire Call Point
Refuge Call Point

Stata 14 is a complete, integrated statistical package that provides everything you need for data analysis, data management, and graphics. With both a point-and-click interface and a powerful, intuitive command syntax, Stata is fast, accurate, and easy to use. All analyses can be reproduced and documented for publication and review.

Advanced features include:

- Multilevel models
- Dynamic panel data regressions
- Structural equation modelling
- Binary, count & censored outcome
- ARCH
- Survey data
- Treatment effects
- Bayesian analysis, and much more!



Training Courses

We hold an array of training courses throughout the year. Our next upcoming school:

Stata Winter School 12-17 December 2016

- Course 1: Introduction to Stata and Data Management
- Course 2: Data Visualisation through Stata
- Course 3: Analysing Panel Data using Stata
- Course 4: Visualising Regression Models using Stata

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Full Programme

All conference sessions are organised in streams. For ease of reference, each stream is represented by a colour in the programme:

- Communicating Statistics
- Data Science & computing
- Environment
- Geostatistics
- Industry & Commerce
- Medical Statistics
- Methods & Theory
- Official Statistics
- Other
- Plenary
- Professional Development
- Social Statistics
- Spatial Statistics
- Statistics & the law
- Statistics in Sport

Listings correct at time of publication

Monday 5 September

16:30 – 17:30

Professional Development: The Young Statistician's Guide to the Conference

Room 2.218

Organised by the RSS Young Statisticians Section

The session is designed to help attendees both new and old get to grips with the conference programme, and provide a rundown of some of the YSS conference highlights.

18:30 – 21:00

Welcome Reception
Museum of Science & Industry

Manchester welcomes conference attendees over drinks and canapés

Tuesday 6 September

08:30 - 09:00

Professional Development - The Young Statistician's Guide to the Conference

Room 3.204

Organised by the RSS Young Statisticians Section

The session is designed to help attendees both new and old get to grips with the conference programme, and provide a rundown of some of the YSS conference highlights.

09:00 - 10:00

1.1 Contributed - Methods & Theory: GLMs and Compositional Data

Room 1.218

How to get along With Sum 1: Generalized Linear Models for Compositional Data
David Firth (University of Warwick, UK)

High-dimensional Inference for Gamma and Inverse-Gaussian GLMs
Hassan Pazira (University of Groningen)

A parametric approach to count zeros imputation in compositional data sets
Javier Palarea-Albaladejo (Biomathematics & Statistics Scotland)

1.2 Contributed - Medical Statistics: Surrogacy and Prediction

Room 2.218

Using multiple biomarkers to inform personalised treatment recommendations in randomised trials
Matthias Pierce (University of Manchester)

Clinical Prediction in Defined Populations: when and how to aggregate existing models
Glen Martin (University of Manchester)

Toward quantification of the strength of surrogate biomarkers from observational clinical studies
Gabriela Czanner (University of Liverpool)

1.3 Contributed - Social Statistics: Missing Data

Room 2.219/2.220

Handling missing data models in the presence of weighting
Harvey Goldstein (University of Bristol)

How to impute missing confounders when using propensity scores
Jonathan Bartlett (AstraZeneca, UK)

Multilevel modelling approach to analysing socioeconomic status longitudinal data and compensating for missingness
Adrian Byrne (University of Manchester)

1.6 Contributed - Official Statistics: Productivity & Tax

Room 4.205

Far from equilibrium: Wealth reallocation in the United States
Alexander Adamou (London Mathematical Laboratory)

Seeing the trees for the wood: a cohort approach to tracking the evolution of productivity
Michael Anyadike-Danes (Aston Business School and Enterprise Research Centre)

Productivity statistics and the economy
Geoff Tily (Trades Union Congress)

1.7 Contributed - Industry & Commerce: Evaluating Customers and Supply Chains

Room 4.206

Bimax Algoritm: Using Bicluster Analysis to Improve Reference Class Forecasting
Gloria Gheno (Ca' Foscari University, ECLT)

Developing a Multivariate Bullwhip Effect Measure
Chaitra Nagaraja (Fordham University, USA)

Rapid Quantification of Specification Risk for Scorecards
Alan Forrest (Royal Bank of Scotland, UK)

10:10 - 11:10

PLENARY 1

Statistical Paradises and Paradoxes in Big Data

Lecture Theatre B

Chair: Richard Emsley (University of Manchester)

Speaker: Xiao-Li Meng (Dean, Graduate School of Arts and Sciences, Harvard University, USA)

11:10 - 11:40 **Refreshments - The Drum**

11:40 - 13:00

2.1 INVITED - Methods & Theory: Recent Advances in time/space modelling

Room 1.218

Organised by Chenlei Leng (University of Warwick)

Chair: Chenlei Leng (University of Warwick)

Discrete Longitudinal Data Modelling with a Mean-Correlation Regression Approach
Cheng Yong Tang (Temple University, US)

Kriging Over Space and Time Based on a Latent Reduced Rank Structure
Qiwei Yao (London School of Economics and Political Science, UK)

The Statistical Analysis of Neuroimaging Data
John Aston (Cambridge)

2.2 INVITED - Medical Statistics: Uncertainty vs Utility: the statistical fulcrum of health informatics

Lecture Theatre B

Organised by University of Manchester, The Health eResearch Centre, The Farr Institute of Health Informatics

Chair: Matthew Sperrin (University of Manchester)

Uncertainty vs. Utility: the statistical fulcrum of Health Informatics
Iain Buchan (University of Manchester)

High resolution data in mental health: the good, the bad and the ugly
Maximilian Kerz (King's College London, UK)

Analysing Primary Care Databases: a synergy of health informatics and traditional statistics
Evangelos Kontopantelis (University of Manchester)

Misinformation vs. information: the statistical modelling of health data
Damon Berridge (Swansea University Medical School)

2.4 INVITED - Data Science: Statistical and Computational Challenges in Data Science

Room 2.219/2.220

Organised by the RSS Statistical Computing Section

Chair: Rebecca Gillick (Lancaster University)

Data Science: Where Computation and Statistics Meet?
Neil Lawrence (University of Sheffield)

The Automatic Statistician: Statistical and Computational Challenges
Zoubin Ghahramani (University of Cambridge)

Discussant: Mark Girolami (Warwick University)

2.5 INVITED - Spatial Statistics: Identifying spatio-temporal trends & clusters in disease risks

Room 2.218

Organised by the RSS Statistical Computing Section

Chair: Nema Dean (University of Glasgow)

Some Challenges in the Analysis of Spatially Referenced Survival Data (and Some Possible Solutions)
Benjamin Taylor (Lancaster University)

A general methodological framework for identifying disease risk spatial clusters based upon mixtures of temporal trends
Gary Napier (University of Glasgow)

Challenges in understanding the spatio-temporal epidemiology of norovirus infection in England using routine public health surveillance data
Helen Clough (University of Liverpool)

2.6 INVITED - Official Statistics: More from less? Can we maintain and develop the quality and availability of health and care statistics at a time of austerity?

Room 4.205

Organised by the RSS Official Statistics Section and the Health Statistics User Group

Chair: Deana Leadbeter (Chair, Health Statistics User Group)

Panel Members Include:

- Scott Heald (NHS National Services Scotland)
- Jamie Jenkins (Office for National Statistics)
- Richard Laux (UK Statistics Authority)
- John Morris (Welsh Government)
- Chris Roebuck (Health and Social Care Information Centre)

2.7 INVITED - Industry & Commerce: Current statistical challenges in business and finance

Room 4.206

Organised by the RSS Official Statistics Section and the Health Statistics User Group

Chair: TBC

Current challenges in applying statistics in financial markets
Mark Nebelung (Global Systematic Solutions)

Illusive Independence and the consequences when modelling human interactions with business
Tim Drye (Data Talk Ltd)

2.8 Professional Development: Do we need courses on statistics for data scientists and data science for statisticians?

Room 3.204

Organised by the RSS Quality Improvement Section

Chair: Stuart McKendrick (Head of RSS Training)

Speakers: Nigel Marriott, Richard Pugh (Mango)

13:00 - 14:00 **LUNCH - EATS Restaurant**

13:00 - 14:00 **LUNCH - Young Statisticians Reception - Room 1.219**

14:00 - 15:00

3.1 Contributed - Methods & Theory: Statistical Mathematics

Room 1.218

Random Projection Ensemble Classification
Timothy Cannings (Statistical Laboratory, University of Cambridge, UK)

The Elliptically Symmetric Angular Gaussian distribution: a new distribution for modelling data on the sphere
Simon Preston (University of Nottingham)

A multiresolution analysis of the rate of a point process
Youssef Taleb (Imperial College London, UK)

3.2 Contributed - Medical Statistics: Applications of Statistics

Room 2.218

The efficiency of using embedded trials to investigate participant retention: an example using social pressure to affect retention in a health cohort study
Sarah Rhodes (University of Manchester)

Endogenous estimation of hospital waiting list dynamics
Daniela Bond-Smith (Centre for Genetic Origins of Health and Disease, University of Western Australia, and Sydney Children's Hospitals Network, Australia)

Data linkage and statistical modelling to provide stratified risk assessment for HAI
Kim Kavanagh (University of Strathclyde, UK)

3.3 Contributed - Social Statistics: Outliers and clustered outcomes

Room 2.219/2.220

Detecting outliers in weighted univariate survey data
Anna Pauliina Sandqvist (KOF Swiss Economic Institute / ETH Zürich, Switzerland)

A generalization of Chao's lower bound estimator for zero-truncated one-inflated count data with an application to domestic violence data
Dankmar Boehning (Southampton Statistical Sciences Research Institute, UK)

Understanding 'Don't Know' Responses in Surveys Using Interviewer Paradata – A Cross National Analysis
Kingsley Purdam (Manchester University, UK)

3.4 Contributed - Data Science: Applications to online data

Lecture Theatre B

Online syndromic surveillance of gastroenteritis
Elizabeth Buckingham-Jeffery (University of Warwick, UK)

Using machine learning techniques to clean web scraped price data via cluster analysis
Hassan Pazira (University of Groningen)

PageRank and the Bradley–Terry model
David Selby (University of Warwick, UK)

14:00 - 16:00

3.5 Professional Development - Research Funding Workshop

Room 3.204

Organised by the RSS Young Statisticians Section

Thinking of applying for research funding? Representatives of Wellcome Trust, Cancer Research UK, MRC and NIHR will present on funding opportunities available to statisticians and tips for putting together a good application. Successful NIHR doctoral fellows will also give insight into the application process and the secrets of success. The session will end with a panel discussion so bring your questions on all things funding!

14:00 - 15:00

3.6 Contributed - Official Statistics: Inflation

Room 4.205

Modelling and Forecasting Inflation Rate Volatility
Christoph Weiss (Judge Business School)

Drivers of measured, perceived and expected inflation
Jens Mehrhoff (Deutsche Bundesbank)

3.8 Professional Development - How statisticians can make an impact in the workplace and develop their careers - "A journey into the uncertain: Identifying and Modelling Risk in Financial Services"

Room 4.206

Organised by the RSS Professional Statisticians Forum (PSF)

In this presentation **Ashley Kanter (Analytics Manager, Aviva)** will describe his experience working in the finance sector. In particular, he will describe how uncertainty features strongly in the structure and pricing of pensions - and how statisticians are well placed to tame it.

15:10 - 16:10

4.1 Contributed - Methods & Theory: Bayesian Time Series Analysis

Room 1.218

A Bayesian approach to measuring the non-stationarity of a time series
Sourav Das (University of Bristol, UK)

Bayesian outlier detection in non-Gaussian AutoRegressive time series
Maria Eduarda Silva (Universidade do Porto & CIDMA, Portugal)

Bayesian Quantile Regression for Discrete Data
Xi Liu (Brunel University London, UK)

4.2 Contributed - Medical Statistics: Clinical Trials

Lecture Theatre B

Outcome selection in clinical trials – looking back at the problems and moving forward with solutions
Paula Williamson (University of Liverpool, UK)

Complexities of running mediation analysis in a randomised controlled trial with two active treatment arms
Katy Sivyer (University of Oxford)

How early stopping for futility in clinical trials can affect the estimated treatment effect
Stephen Walter (McMaster University, Canada)

4.3 Contributed - Social Statistics: Polls and Europe

Room 2.219/2.220

Predicting the 2016 UK EU membership referendum
Timothy Martyn Hill (LV)

Are Regions More Important than Countries in Analyses of Eurostat Surveys?
Neil Spencer (University of Hertfordshire)

4.5 Contributed - Spatial Statistics: Modelling of environments

Room 2.218

Estimating changes in earthquake occurrence rates
Rakesh Paleja (Shell, United Kingdom)

Modelling blinking fluorophores in Super Resolution Microscopy
Lekha Patel (Imperial College London)

Does increasing road lighting increase road injuries?
Paul Marchant (Leeds Beckett University, United Kingdom)

4.6 Contributed - Official Statistics: Measuring school performance and statistical literacy

Room 4.205

Evaluating the Provision of School Performance Statistics: A Two-Sided Matching Model of School Choice
Thilo Klein (OECD/PARIS21)

Making School Performance Make Sense
Paul Askew

An Indicator for Statistical Literacy based on National Newspaper Archives
Thilo Klein (OECD/PARIS21)

4.7 Contributed - Industry & Commerce: Compression, Compaction and Visualisation

Room 4.206

Statistics with a Human Face- Visualisation
Liberty Vittert (University of Glasgow)

Estimation of reservoir compaction using surface displacement measurements
Stijn Bierman (Shell Global Solutions NL, Netherlands)

Compression of High Frequency Acoustic Data using Wavelet Analysis
Tim Park (Shell)

4.8 Professional Development: How to write for a public audience

Room 1.219

Presented by Robert Matthews

Robert Matthews is an award-winning journalist, former Fleet Street columnist and a visiting professor in mathematics. He will show how to choose what to write about, how to convey it in an engaging way - and how to pitch it to the press office, the media, and "Significance", of which he is an editorial board member. The workshop is suitable to anyone in academia or the specialist professions interested in public outreach.

16:10 - 16:25

Bitesize session: Introduction to AIMS

Room 3.204

Organised by the Young Statisticians Section

Speaker: Jane Hutton (University of Warwick)

Find out about volunteering with the African Institute of Mathematical Sciences (AIMS)

16:10 - 16:30 **Refreshments - The Drum**

16:30 - 17:50

5.1 INVITED - Methods & Theory: Intractable Likelihood

Room 1.218

Organised by Ruth King (University of Edinburgh)

Chair: Zoubin Ghahramani (University of Cambridge)

Small ScaLE and Large ScaLE: Developments in the Scalable Langevin Exact Algorithm
Murray Pollock (University of Warwick, UK)

Bayesian nonparametric approaches to quantifying dependence between random variables
Sarah Filippi (University of Oxford, UK)

Scaling MCMC algorithms to big data problems using parallel computing
Chris Nemeth (Lancaster University)

5.2 INVITED - Medical Statistics: Evaluation of non-randomised health policy interventions

Room 1.219

Organised by the RSS Primary Health Care Special Interest Group

Chair: Gillian Lancaster (Lancaster University)

Assessing the impact of Be Clear on Cancer campaigns – which methods are best?
Carolynn Gildea (Public Health England)

Regression based quasi-experiment when randomisation is not an option: interrupted time series analysis
Evangelos Kontopantelis (University of Manchester, UK)

Propensity score matching for selection of local areas as controls for evaluation of effects of alcohol policies in case series and quasi case-control designs
Frank de Vocht (University of Bristol)

5.3 Invited - Social Statistics - Confronting risk: Statistical perspectives on life, death and disaster

Room 2.219/2.220

Organised by Significance magazine

Chair: Timandra Harkness

How risky is our intuition for risk?
Xiao-Li Meng (Harvard University)

Predictions, disasters and "Dirty Harry"
Robert Matthews (Aston University)

Statistics of disaster near-misses
Gordon Woo (RMS, UK)

5.4 INVITED - Data Science: Theory and Methods of Data Science

Lecture Theatre B

Organised by the Alan Turing Institute

Chair: TBC

Scalable inference for a full multivariate stochastic volatility model
Petros Dellaportas (University College London)

Topological Data Analysis at the ATI
Ulrike Tillmann (University of Oxford)

Bernstein-von Mises theorem and high dimensional nonidentifiable possibly misspecified models
Natalia Bochkina (University of Edinburgh)

5.5 INVITED - Spatial Statistics: Spatial Statistics for tropical disease control

Room 2.218

Organised by Michelle Stanton (Liverpool School of Tropical Medicine)

Chair: Michelle Stanton (Liverpool School of Tropical Medicine)

Geostatistical modelling of the relationship between microfilariae and antigenaemia prevalence of lymphatic filariasis infection
Emanuele Giorgi (Lancaster University, UK)

Mapping progress in malaria control with spatial statistics (with application to a large scale serological survey from Cambodia)
Ewan Cameron (University of Oxford)

Advances in mapping malaria for elimination: fine resolution modelling of Plasmodium falciparum incidence
Victor Alegana (University of Southampton)

5.6 INVITED - Official Statistics: The New World of User Engagement - Understanding the opportunities and challenges of new approaches to user engagement, and what they can add to existing methods of user engagement

Room 4.205

Organised by the Statistics User Forum as a tribute to Sir Claus Moser, Director of the Central Statistical Office from 1967 to 1978, who died on 4 September 2015

Chair: Jenny Church (Chair, RSS International Development Section; former Chair, Statistics User Forum)

The international perspective on user engagement
Dev Virdee (Statistics User Forum and Independent Consultant)

Communications Strategies for User Engagement
Christine Cawthorne (CrocStar Media Limited)

The role of social media and the Twittersphere
Nick Woodhill (Good Practice Team – GSS Professional Support)

Producer perspective
Tom Davies (Head of Client Statistics, Department for Work and Pensions)

User perspective
Deana Leadbeter (Statistics User Forum and Chair, Health Statistics User Group)

User engagement strategy and direction of travel
Chris Lines (Head of Communications, UKSA / ONS)

5.7 INVITED - Methods & Theory: Recent advances in Monte Carlo Methods

Room 4.206

Organised by Axel Gandy (Imperial College London)

Chair: Axel Gandy (Imperial College London)

Non-Parametric Control Functionals to Improve Monte Carlo Integration
Mark Girolami (University of Warwick)

Super-efficient sampling using Zig Zag Monte Carlo
Joris Bierkens (University of Warwick)

Rolling MCMC: Safe, Efficient Updating of Bayesian Models
Din-Houn Lau (Imperial College London)

5.8 Professional Development - Pre-Ordinary Meeting

Room 3.204

Organised by the RSS Young Statisticians' Section

The speakers will give an introduction to some of the statistical topics covered in the paper to be presented at the following Ordinary Meeting with an aim to enable young statisticians (and those less familiar with the topics) to join in with the discussions following the Ordinary Meeting.

18:00 - 20:00 **Royal Statistical Society Annual General Meeting**

Lecture Theatre B

Followed by

PLENARY 2

Ordinary Meeting - Should we sample a time series more frequently? Decision support via multirate spectrum estimation

Lecture Theatre B

Guy P Nason and Ben Powell (University of Bristol, UK)

Duncan Elliott (Office for National Statistics, Newport, UK)

Paul A Smith (University of Southampton, UK)

20:30 til late **Pub Quiz Night -** Blackdog Ballroom, 11 New Wakefield St, Manchester M1 5NP

PUB *QUIZ* NIGHT

Tuesday 6 September from 8.30pm

Venue: Blackdog Ballroom, 11 New Wakefield St, Manchester M1 5NP

All welcome!

Come and enjoy a few casual drinks with fellow attendees, and try your hand at our general knowledge quiz – there'll be prizes for the winning and losing teams, plus free drinks vouchers for all participants!

Teams will be arranged on the night.

Event organised by the Young Statisticians Section (YSS) and generously supported by ATASS Sports.

atass sports

Wednesday 7 September

09:00 - 10:00

6.1 Contributed - Methods & Theory: Missing Data

Room 1.218

Outcome-sensitive Multiple Imputation: a Simulation Study
Evangelos Kontopantelis (University of Manchester, UK)

Justifying the Fully Conditional Specification imputation procedure
Finbarr Leacy (Royal College of Surgeons in Ireland)

Efficient estimation in semiparametric regression with missing responses
Ursula U. Mueller (Texas A&M University, United States)

6.2 Contributed - Medical Statistics: Meta-analysis

Lecture Theatre B

The albatross plot: a novel graphical tool for presenting results of diversely reported studies in a systematic review
Sean Harrison (School of Social and Community Medicine, University of Bristol)

Individual participant data meta-analysis for external validation and recalibration of a prognostic model
Joie Ensor (Keele University)

Comparison of methods for measurement error correction: Regression calibration, multiple imputation and Bayesian methods
Christen Gray (LSHTM, UK)

6.3 Contributed - Social Statistics

Room 4.205

Educational Qualifications Yields as Employment Risk: an Empirical Analysis on the Horizontal Inequality
Flavio Santi (University of Trento)

Nurse effects in survey biomarkers
Alexandru Cernat (University of Manchester)

Evaluation of student performance through a multidimensional latent class IRT model with nonignorable missingness
Leonardo Grilli (University of Florence, Italy)

6.4 Contributed - Trial Design

Room 2.219/2.220

Demographic and other influences on the efficacy of water conservation measures on water consumption patterns in student residences
Deirdre Toher (University of the West of England)

Experiment Design and Analysis Using Pre-planned Orthogonal Contrasts
Colin Birch (Animal and Plant Health Agency, UK)

Challenges in designing and analysing trials in road safety
Kevin McRae-McKee (Transport Research Laboratory, UK)

6.5 Contributed - Spatial Statistics: Uncertainty and correlation

Room 2.218

Dynamic chloropeths for representing the uncertainty in spatial estimates
Geoffrey Jones (Massey University, New Zealand)

On Surface Estimation under Gaussian Subordination
Sucharita Ghosh (Swiss Federal Research Institute WSL, Switzerland)

A Case-Study Comparison of Methods for Factor Analysis of Spatially Correlated Multivariate Responses
Samuel Oman (Hebrew University of Jerusalem, Israel)

6.6 Contributed - Official Statistics: Crime and outliers

Room 1.219

A comparison of automatic outlier detection methods for time series
Cathy Jones (Office for National Statistics, UK)

Examples of recent innovations in official crime surveys: responding to the changing nature of crime, user needs and legislation
Daria Gromyko (Home Office, UK)

6.8 Professional Development: Maximising the impact of your published research

Room 3.204

Organised by John Wiley & Sons

The session will be of interest to all researchers publishing their work in academic journals or publications like Significance Magazine, but will be especially of interest to early career researchers who wish to raise their own profiles via their published work.

Presenter: Jemma Blow (Associate Marketing Manager, John Wiley & Sons)

10:10 - 11:30

7.1 INVITED - Methods & Theory: Recent advances in statistical learning

Room 1.218

Organised by Idris Eckley (Lancaster University)

Chair: Idris Eckley (Lancaster University)

How many communities are there?
Yi Yu (University of Cambridge)

Inference with Kernel Embeddings
Dino Sejdinovic (University of Oxford, UK)

Consistent Sequential Learning Algorithms for Highly Dependent Time Series
Azadeh Khaleghi (Lancaster University, UK)

7.2 INVITED - Medical Statistics: Causality for medical statistics

Lecture Theatre B

Organised by RSS Medical Section

Chair: Nuala Sheehan (University of Leicester)

Causality, Interaction and Observational Studies
David Cox (Nuffield College, Oxford)

Causal inference with 0%, 50% and 100% invalid instruments
Jack Bowden (University of Bristol, UK)

Efficacy and mechanisms evaluation using instrumental variables
Richard Emsley (University of Manchester, UK)

09:00 - 10:00

7.3 INVITED – Social Statistics: Advances in segregation analysis

Room 4.205

Organised by the RSS Social Statistics Section in collaboration with the ESRC AQMeN Research Centre

Frontiers in residential segregation
Nema Dean (University of Glasgow)

Developing a spatially disaggregated, multiscale index of dissimilarity: residential segregation between Asian and White British school children in England
Richard Harris (University of Bristol)

Diversifying but not integrating: Entropy-based measures of local segregation in Philadelphia
Rory Kramer (Villanova University)

7.4 INVITED - Data Science: Tech Giants

Room 2.219/2.220

Organised by the RSS Young Statisticians Section

Chair: Sarah Nolan (University of Liverpool)

Modern Computing - Controlling the Data Explosion

Jonny Hancox (Intel)
PSOne to PS4: The changing landscape of video game data and analysis

Aidan Fitzgerald (Sony Interactive Entertainment, UK)
Big data and Machine Learning in today's analytical landscape

Bianca Furtuna (Microsoft)

Title TBC
Daniel Bergquist (Google)

7.5 INVITED - Geostatistics: Compositional Data Analysis

Room 2.218

Organised by the International Association for Mathematical Geosciences (IAMG)

Chairs: Vera Pawlowsky-Glahn (University of Girona) & Jennifer McKinley (Queen's University Belfast)

The log-ratio approach to compositional data analysis
Juan José Egozcue (U. Politecnica de Catalunya)

Compositional geostatistics
Vera Pawlowsky-Glahn (University of Girona)

A compositional approach to investigating the relationship between environmental factors and health
Jennifer McKinley (Queen's University Belfast)

7.6 INVITED - Official Statistics: Innovation@ work in official statistics

Room 1.219

Organised by Eurostat

Chair: Mariana Kotzeva (Deputy Director General, Eurostat)

Data to Knowledge: Challenges and Opportunities for Official Statistics
Emanuele Baldacci (European Commission, DG ESTAT, Luxembourg)

Mixed-Mode Experiments in a panel survey – changes in response behaviour
Tiina Orusild (Statistics Sweden, Sweden)

Deriving the Demographics of Twitter Users and exploring methods reduce bias in the data
Thomas Smith (Office for National Statistics)

7.7 INVITED - Statistics & the Law: Statistics & the Law

Room 4.206

Organised by the RSS Statistics and the Law Section

Modelling Activity Level Evidence using Chain Event Graphs
James Smith (University of Warwick)

Uncertainty in likelihood ratios for forensic DNA evidence
Bruce Weir - University of Washington

Title TBC
Alicia Carriquiry (Iowa State University)

7.8 Professional Development: Promoting your work online with social media and more

Room 3.204

Organised by Scott Keir (Royal Statistical Society)

Presenter: Nicola Osborne (University of Edinburgh)

In this interactive workshop we'll explore opportunities for engaging with your audience(s) through social media. We'll delve into a wide range of social and new media tools, communities and approaches, with both practical guidance and examples to inspire your own ideas.

11:30 – 12:00 **Refreshments - The Drum**

12:00 – 13:00

PLENARY 3

Barnett Lecture: The Carbon Club: Measuring and mapping carbon dioxide from remote sensing satellite data

Lecture Theatre B

Chair: Richard Emsley (University of Manchester)

Speaker: Noel Cressie (National Institute for Applied Statistics Research Australia (NIASRA), University of Wollongong, Australia)

13:00 - 14:00 **LUNCH - EATS Restaurant /The Drum**

13:05 - 13:20

Annual General Meeting of the RSS Statistics & the Law Section

Room 4.206

14:00 - 15:00

8.1 Contributed - Methods & Theory: Longitudinal Data

Room 1.218

A joint semiparametric mixed model for longitudinal data involving time-varying covariates
Reza Drikvandi (Imperial College London, UK)

A time-scale for cohorts with long follow-up
Margaret Hurley (University of Central Lancashire, UK)

Identifying disease progression using longitudinal discriminant analysis
David Hughes (University of Liverpool

8.2 Contributed - Medical Statistics: Probability Weighting

Room 2.218

Optimal probability weights for inference with constrained precision
Michele Santacatterina (Karolinska Institutet, Sweden)

Improving prognostic accuracy with large, complex datasets from multiple sources and the merging process
Christopher Cheyne (University of Liverpool, UK)

Propensity score methods in the estimation of treatment effect modification in observational studies
Antonia Marsden (University of Manchester)

8.3 Contributed - Social Statistics: Applied

Room 4.205

Modelling Euromillions sales
Rose Baker (University of Salford, UK)

What influences driver frustration? - An experimental study of factors associated with driver frustration and overtaking intentions
Kevin McRae-McKee (Transport Research Laboratory)

Investigating the impact of Alcohol Consumption on Health and wellbeing in an ageing population (ELSA)
Rosemary McNiece (Kingston University)

8.4 Contributed - Data Science: Changepoints and distributions

2.219/2.220

Distinguishing between long memory and changepoint models: A spectral classification procedure
Rebecca Killick (Lancaster University, UK)

Developments in Changepoint Analysis: Nonparametric and Parallelisation
Kaylea Haynes (Lancaster University, UK)

8.6 Contributed - Official Statistics: Journeys through Data

Room 1.219

Telling stories with data- Recent advances in integrating data science to improve data dissemination and communication of official statistics at local level
Agnieszka Plywaczyk (London Borough of Hounslow)

The Migrant Journey: a Home Office analysis of the paths that migrants take through the UK immigration system
Katie Fisher (Home Office)

Improving comparability - demystifying official statistics through harmonisation
Suzanne Ellis (Office for National Statistics)

8.8 Professional Development: A statistician's guide to influencing Parliament

Room 3.204

Chair: Roeland Beerten (RSS Director of Policy & Public Affairs)

Speakers: Gary Hart (Parliamentary Outreach Team),
Christl Donnelly (Imperial College London)

The session will comprise of a presentation on how the UK Parliament works, followed by a discussion on working with and influencing the Parliamentary process.

15:10 - 16:30

9.1 INVITED - Methods & Theory: Journal of the Royal Statistical Society Series B Editors' Invited Session

Lecture Theatre B

Organised by Piotr Fryzlewicz and Ingrid Van Keilegom (Series B Editors RSS Journal)

Chair: Guy Nason (University of Bristol)

Truncated Linear Models for Functional Data
Giles Hooker (Cornell University, United States)

Hypothesis Testing for Automated Community Detection in Networks
Purnamrita Sarkar (University of Texas, Austin, United States)

Generalized additive and index models with shape constraints
Yining Chen (London School of Economics and Political Science)

9.2 INVITED – Medical Statistics: Efficient Clinical trial designs

Room 2.218

Organised by RSS Medical Section

Details TBA

9.3 INVITED - Social Statistics: Organising Big Data's contribution to policy

Room 1.218

Organised by the Manchester Statistical Society

Chair: John Rigby (University of Manchester)

Organising big data's contribution to policy
John Rigby (University of Manchester, UK)

What Policy makers want from big data:
Stian Westlake (Executive Director of Policy and Research, Nesta)

What policy analyst and scholars are doing in Europe and US:
Professor Peter van den Besselaar (VU University Amsterdam)
Professor Philippe Laredo (Université Paris-Est Marne-la-Vallée)
Professor Kaye Husbands Fealing (Georgia Institute of Technology)

What are the limits?
Professor Natalie Shlomo (University of Manchester)

9.4 INVITED – Data Science: Data Science and statistics – how to make the marriage work?

Room 2.219/2.220

Organised by the RSS Quality Improvement Section

The opportunities and threats to learned societies from the widening data science field
Peter Diggle (RSS President, Lancaster University)

The data science Venn diagram
Neil McIvor (Deputy Director, Statistical Services Division, Department for Work and Pensions)

How can statisticians meet the practical data science needs of business and industry?
Shirley Coleman (Industrial Statistics Research Unit, Newcastle University)

Discussant and facilitator for panel debate: Radouane Oudrhiri
(Founder, CTO and President of Systonomy)

9.6 INVITED - Official Statistics: Bringing official statistics to a wide audience

Room 1.219

Organised by Nick Woodhill, GSS Good Practice Team

Bringing official statistics to a wider audience – what needs to be done?
Alan Smith (Financial Times)

Title TBC
Julie Brown (Head of Profession, Department for Transport)

Titles TBC
Will Moy (Full Fact)

9.7 Professional Development: Becoming an expert witness

Room 3.204

Organised by the RSS Statistics and the Law Section

Expert evidence, statements and liaison with lawyers
Colin Aitken (The University of Edinburgh)

My experiences as an expert witness
David Balding (UCL)

Becoming an expert witness
Tim Clayton (Forensics & Security Division, LGC)

16:30 - 17:00 **Refreshments - The Drum**

17:00 - 18:00

PLENARY 4

Campion (President's Invited) Lecture

Lecture Theatre B

Statistical insights into the West African Ebola outbreak
Christl Donnelly (Imperial College London on behalf of the WHO Ebola Response Team)

18:00 - 19:30

Royal Statistical Society Awards Ceremony

Lecture Theatre B

Presentations of Society Honours will be followed by short talks from some of the Society's new Honorary Fellows. For full details of the recipients please see the insert in the back of the directory.

19:30 - 21:00

Poster Reception - The Drum

Please see the insert in the back of the directory for the full list of posters being presented.

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KEEN ON
MATHS?
ROYAL
STATISTICAL
SOCIETY
DATA | EVIDENCE | DECISIO

Thursday 8 September

09:00 - 10:00

10.1 Contributed - Methods & Theory: Markov Chains

Room 1.218

MCMC for weakly identifiable targets from matrix functions
Thomas House (University of Manchester)

The Computation of Mean First Passage Times for Markov Chains
Jeffrey Hunter (Auckland University of Technology, New Zealand)

Visualization of distance measures implied by forecast evaluation criteria
Robert Kunst (Institute for Advanced Studies, Austria)

10.2 Contributed - Medical Statistics: Informative observation

Lecture Theatre B

Extensions in Robust Joint Modelling
Lisa McCrink (Queen's University Belfast, UK)

Application of Marginal Structural Models to unbalanced logitudinal health data (Clinical Cohort): A simulation study
Edmore Chamapiwa (University of Manchester)

Time dependent ROC for disease incidence using multivariate markers under informative censoring
Cuiling Wang (Albert Einstein College of Medicine, United States)

10.3 Contributed - Social Statistics: Global Development

Room 4.205

Lot Quality Assurance Sampling for improving health systems in the developing world: a decision-making tool to empower health officers and inform health policy
Caroline Jeffery (Liverpool School of Tropical Medicine, UK)

The social context of youth's use of modern contraceptives in Kenya: a multilevel analysis
Elsie Akwara (University of Southampton)

Reaping digital dividends or emerging digital divide?
S Sujarwoto (University of Brawijaya)

10.5 Contributed - Environment Statistics: Sea

Room 2.218

Extremal spatial dependence of North Sea storm wave environments
Monika Kereszturi (Lancaster University)

An evolutionary spectra approach to model land/ocean nonstationarities
Stefano Castruccio (Newcastle University, UK)

Multi-dimensional Bayesian adaptive regression splines for marginal extreme value analysis
David Randell (Shell)

10.6 Contributed - Sport Statistics: Detection and Prediction

Room 4.206

Statistical Methodology for Age-Adjustment of the GH2000 Score Detecting Growth Hormone Misuse
Dankmar Boehning (Southampton Statistical Sciences Research Institute, UK)

In-play forecasting of win probability in One-Day International cricket: A dynamic logistic regression model
Muhammad Asif (University of Malakand)

10.7 Contributed - Communicating Statistics: Novel approaches to teaching statistical investigation

Room 1.219

Teaching Statistics to Train Statisticians: a practical based approach to developing statistical thinking and communication
Rosemary McNiece (Kingston University, UK)

A Socio-Medical Data-based Introductory Statistics Course
Murray Aitkin (University of Melbourne, Australia)

Is more statistics good for everyone?
Rhys Jones (Cardiff University)

10:10 - 11:30

11.1 INVITED - Methods & Theory: Probabilistic and statistical techniques for electrical power systems

Room 1.219

Organised by the RSS Applied Probability Section

Chair: John Moriarty (Queen Mary University of London)

Modelling and prediction of network time series
Marina Knight (University of York)

Structural Price Modeling and Forward Curve Calibration in Modern Electricity Markets
Michael Coulon (University of Sussex, UK)

11.2 INVITED - Medical Statistics: What do the experts believe? Use of prior elicitation to aid decision making in drug development and health technology assessment

Lecture Theatre B

Organised by Nicky Best (GSK) with conjunction with the PSI Scientific Committee

Using prior elicitation to support decision making in drug development at GSK
Nicky Best (GSK, United Kingdom)

Bayesian prior elicitation: an application to the MYPAN trial in childhood polyarteritis nodosa
Lisa Hampson (Lancaster University, UK)

Integrating multiple sources of evidence to estimate cost-effectiveness
Richard Lilford (University of Warwick)

Advantages and disadvantages of different mathematical techniques for aggregating individual priors
Sam Watson (Warwick University)

Discussant: Andrew Thomson (European Medicines Agency)

11.3 INVITED - Social Statistics: Statistical Analysis of Social Networks

Room 4.205

Organised by Johan Koskinen (University of Manchester)

Exploratory Data Analysis for Multiplex Networks with DISTATIS
Giancarlo Ragozini (University of Naples Federico II)

Efficient Bayesian computation for ERGMs
Alberto Caimo (Dublin Institute of Technology)

Social network analysis
Nial Friel (University College Dublin)

11.4 INVITED - Data Science: Unpacking data visualisation

Room 2.219/2.220

Organised by the RSS Social Statistics Section

Title TBC
Helen Kennedy (University of Sheffield)

Not Just Pretty Pictures: The Whats and Whys of Data Visualisation For Learning From Data
Jonathan Minton (University of Glasgow)

Data Visualisation and the Newsroom
Alan Smith (Financial Times)

11.5 INVITED - Environment Statistics: Papers from the Journal of the Royal Statistical Society

Room 2.218

Chair: Harvey Goldstein

An SPDE Based Model for Large Space-Time Data Applied to Precipitation Postprocessing
Fabio Sigrist (Lucerne University of Applied Sciences and Arts)

Estimating the health benefit of reducing indoor air pollution in a randomized environmental intervention using principal stratification
Amber Hackstadt (Vanderbilt University Medical Center, United States)

Modelling heatwaves in central France: a case-study in extremal dependence
Hugo Winter (EDF Energy)

11.6 INVITED - Statistics in Sport: Recreational, Professional and Sports Betting

Room 4.206

Organised by the RSS Statistics in Sport Section

Chair: Alun Owen (University of Worcester)

A statistical model of the effect of training on performance in road cycling
Phil Scarf (University of Salford, UK)

trackeR: Infrastructure for Running and Cycling Data in R
Hannah Frick (University College London)

Followed by panel discussion on the use of statistics in sports betting

11.7 INVITED - Communicating Statistics: communicating statistics to non-specialist university students

Room 1.219

Organised by Meena Kotecha (RSS Education Committee and LSE)

Livening up statistics teaching rooms by "LOL"
Meena Kotecha (The London School of Economics and Political Science, UK)

Stats buddy: helping non-statisticians to help their students learn medical statistics
Jamie Sergeant (University of Manchester)

University students reading life sciences and statistical thinking
Matina Rassias (University College London (UCL), UK)

11:30 - 12:00 **Refreshments - The Drum**

12:00 - 13:00

12.1 Contributed - Methods & Theory: Predictive Inference

Room 1.218

Nonparametric predictive inference for diagnostic test thresholds
Manal Alabdulhadi (Durham University, UK)

Predictive Inference with Copulas for Bivariate Data
Tahani Coolen-Maturi (Durham University, UK)

Nonparametric predictive inference for future order statistics
Hana Alqifari (Durham University)

12.2 Contributed - Medical Statistics: Analysis of Clustered Data

Room 4.205

Bayesian Hierarchical Modelling of the Intra-cluster Correlation Coefficient for a Cluster-Randomised Trial
Svetlana Tishkovskaya (University of Central Lancashire, UK)

The role of cluster size and intra-cluster correlations when adjusting for covariates in the analysis of cluster randomised trials
Neil Wright (Queen Mary University of London, UK)

Risk prediction for clustered data with few events
Menelaos Pavlou (University College London, UK)

12.3 INVITED - Research Students Conference Prize winners

Room 2.219/2.220

An Alternative Approach to Calibration in Survey Sampling
Gareth Davies (Cardiff University)

A Markov Random Fields approach to the Gating of Flow Cytometry Data
Kevin Brosnan (University of Limerick)

Clustering Nonstationary Circadian Plant Rhythms using Locally Stationary Wavelet Representations
Jessica Hargreaves (University of York)

12.4 Contributed - Data Science: Model selection

Room 3.204

Iteratively reweighted adaptive lasso for conditional heteroscedastic time series with applications to AR–ARCH type processes
Florian Ziel (European University Viadrina Frankfurt (Oder))

Model selection in sparse multi-dimensional contingency tables
Susana Conde (University of Manchester, UK)

Markov chain sampling for algorithmic leveraging
Keith Knight (University of Toronto, Canada)

12.5 Contributed - Environment Statistics: Cattle / Air Pollution

Room 2.218

A compositional mixed model for methane production from cattle
Javier Palarea-Albaladejo (Biomathematics & Statistics Scotland)

A common singular spectrum analysis of bovine tuberculosis incidence in Great Britain
Theo Pepler (University of Glasgow, UK)

Modelling non-linear exposure-response and non-linear lagged-response with respect to exposure to air pollution and cause-specific mortality risk
Matthew Gittins (University of Manchester)

12.6 Contributed - Sport Statistics: Modelling Championship Performance

Room 4.206

Modelling perfectly competitive football leagues
John Fry (Sheffield Hallam University, UK)

Consistent Bradley-Terry model for fair standings in football leagues and other round-robin tournaments
David Firth (University of Warwick, UK)

Formula for success: Multilevel modelling of Formula One Driver and Constructor performance, 1950-2014
Andrew Bell (University of Sheffield)

12.8 Professional Development: STEM Showcase

Room 1.219

Organised by the Young Statisticians Section

The session will present examples of effective and engaging statistical activities that have been developed and run in schools, and will be relevant to both early career statisticians and those interested in becoming STEM ambassadors and/or volunteering in schools.

13:00 - 14:00 **LUNCH - EATS Restaurant**

13:05 - 13:20 **Bitesize lunchtime session: Getting to know the RSS Education Committee**

Room 1.219

14:00 - 15:20 **13.1 INVITED - Methods & Theory: Bench-marking in Clustering**

Room 1.218

Organised by the British Classification Society and International Federation of Classification Societies

Benchmarking in cluster analysis: Preview of a white paper
Iven Van Mechelen (University of Leuven, Belgium)

Benchmarking in cluster analysis: An introduction to the International Federation of Classification Societies (IFCS) Cluster Benchmark Data Repository
Nema Dean (University of Glasgow, UK)

Discussant: Berthold Lausen (University of Essex)

13.2 INVITED - Methods & Theory: ASA Statement on P-values and statistical significance: Development and Impact

Lecture Theatre B

Organised by the American Statistical Association

Speakers:
Valen Johnson (Texas A&M University)
Regina Nuzzo (Gallaudet University)
Stephen Senn (Luxembourg Institute of Health)

13.3 INVITED - Social Statistics: Paradigms in non-random sampling

Room 2.219/2.220

Organiser and Chair: Natalie Shlomo (University of Manchester)

Who Tweets? First Steps in Understanding and Evaluating Representation on Twitter
Luke Sloan (Cardiff University)

Missing Non-Voters and Misweighted Samples: Explaining the 2015 Great British Polling Miss
Jonathan Mellon (University of Oxford)

Web-based Probability Panel in the UK
Joel Williams (TNS BRMB)

13.4 INVITED - Data Science: Applications of machine learning in biostatistics

Room 3.204

Organised by the RSS Medical Section

Chair: Jonathan Bartlett (AstraZeneca)

Applying Machine Learning Methods to Improve Analyses of Medical Research Studies
Daniel Stahl (King's College London)

Targeted Statistical Learning for Health Care Spending
Sherri Rose (Harvard, USA)

Estimating the comparative effectiveness of longitudinal treatment regimes: an application of targeted maximum likelihood estimation in critical care
Noemi Kreif (London School of Hygiene and Tropical Medicine, UK)

13.5 INVITED - Spatial Statistics: Functional data analysis for earth observation

Room 2.218

Organised by The International Environmetrics Society (TIES)

Chair: Marian Scott (University of Glasgow)

Globolakes; Functional Clustering of MERIS lake water quality data using adaptive smoothing.
Ruth O'Donnell (University of Glasgow, UK)

Functional data methods for ozone: trends and forecasting
Serge Guillas (UCL)

Functional data methods for uncertainty analysis of atmospheric measurements
Francesco Finazzi (University of Bergamo, Italy)

Discussant: Claire Miller (University of Glasgow)

13.7 INVITED - Communicating Statistics: Statistical education in schools

Room 1.219

Organised by Olivia Varley-Winter (Royal Statistical Society)

How should statistics be taught? Findings from University of Manchester's Teleprism research project and evaluation of MEI's Core Maths
Maria Pampaka (University of Manchester)

What has changed? Statistical content of the new Mathematics A Level in England
Neil Sheldon (RSS Vice President – Education and statistical literacy)

How should statistics be taught? Findings from Cambridge Assessment's international and curriculum research
Ellie Darlington and Jess Bowyer (Cambridge Assessment)

15:20 - 15:50 **Refreshments - The Drum**

15:50 - 16:50

14.1 Contributed - Methods & Theory: Multivariate Problems

Room 1.218

New multiple testing procedures for discrete test statistics
Alex Lewin (Brunel University London, UK)

Centering and the Use of Additional Information When Calibrating in the Presence of Random Effects
Samuel Oman (Hebrew University of Jerusalem, Israel)

14.2 Contributed - Medical Statistics: Survival Analysis

Room 4.205

Multi-Parameter Regression Models and Non-proportional Hazards
Kevin Burke (University of Limerick, Ireland)

An innovative permutation approach to testing for survival curves
Roberto Fontana (Polytechnic of Turin)

Flexible parametric survival models and time-series analysis for extrapolating time-varying treatment effects in health technology assessment.
Benjamin Kearns (University of Sheffield)

14.3 Contributed - Social Statistics: Identification and estimation

Room 3.204

Age-period-cohort analysis: can statistical methods solve the identification problem?
Andrew Bell (University of Sheffield)

A general three-step method for estimating the effect of multiple latent categorical predictors on a distal outcome
Yajing Zhu (London School of Economics and Political Science, UK)

Producing and interpreting estimates of the prevalence of female genital mutilation in England and Wales
Alison Macfarlane (City University London, UK)

14.6 INVITED - Significance Writing Competition Winners

Room 2.219/2.220

On the frequency of America in America
Adam Kashlak (University of Cambridge, UK)

How to mend a broken heart with stem cells and discrepancies?
Hakim-Moulay Dehbi (Imperial College London)

Queen Elizabeth II - an Extreme Event monarch?
Anastasia Frantsuzova (City University/St Andrews)

14.7 Contributed - Communicating Statistics: E-learning

Room 1.219

Taking the sting out of stats: Teaching and communicating stats effectively for e-learners
Eirini Tatsi (University of Derby, Online Learning, UK)

Creating a statistical analysis assistant using Stat-JR
William Browne (University of Bristol, UK)

Teaching statistics to non-statisticians on a fully online master of public health programme: past, present and future
Isla Gemmell (University of Manchester, UK)

17:00 - 17:50

PLENARY 5

Significance Lecture: Lost in translation – Why statisticians and policymakers need to speak the same language

Lecture Theatre B

Dame Anne Glover (University of Aberdeen)

17:50 – 18:00

Close of Conference

Peter Diggle (Royal Statistical Society) and John Pullinger (UK National Statistician)

ROYAL STATISTICAL SOCIETY

DATA | EVIDENCE | DECISIONS

We hope you enjoyed the 2016 RSS International Conference. Next year's conference will take place in Glasgow, Scotland from 4-7 September 2017. See you there!