

Conference Directory

RSS International Conference 2026

THE UK'S ANNUAL SHOWCASE FOR STATISTICS & DATA SCIENCE

BOURNEMOUTH 7-10 September

ALL WELCOME

Conference co-headline supporters:



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For more details visit: rss.org.uk/conference2026 @rssannualconf.bsky.social



RSS International Conference

A **WELCOMING** and **INCLUSIVE** event
for all statisticians and data scientists

A polite reminder to all:

- Be courteous and respectful
- Be professional
- Be kind to others

*The RSS does not tolerate harassment
of conference participants in any form.*



rss.org.uk/conduct



Welcome

It is a great pleasure, on behalf of the RSS Conference Board, to welcome you to Bournemouth for the RSS International Conference 2026.

The conference was due to come to Bournemouth in 2020, before Covid required it to move online, so it is especially pleasing that we have finally made it here. Over the next four days, statisticians from academia, government, industry and beyond will come together. Whether this is your first RSS Conference or one of many, I hope you will find it a welcoming place to share your work, encounter new ideas and enjoy Bournemouth.

I hope the conference will provide opportunities not only to learn about new developments, but also to exchange ideas and make new connections. I encourage you to ask questions, visit sessions outside your usual area and introduce yourself to people whose work interests you. With contributions from people at many career stages, I hope everyone will feel able to take an active part.

The programme reflects the breadth of modern statistics and data science, from new methodological research to applications, communication, education and professional

development. We are delighted to welcome Bhramar Mukherjee, Dame Sheila Bird, Gordana Radojevic, Simon French, Finn Lindgren, Ron Wasserstein and Leonhard Held as our keynote speakers. Alongside the keynote sessions is a rich programme of invited and contributed sessions, workshops, rapid-fire talks and posters, covering medicine, the environment, official statistics, business and industry, social science, artificial intelligence, statistics education, and methods and theory. I hope that this range of subjects will allow everyone to find plenty that is directly relevant to their work, as well as something unexpected that sparks a new interest.

There will also be many opportunities to continue conversations beyond the formal sessions. The conference opens with a pre-conference workshop for early-career researchers, followed by the opening keynote and welcome reception. On Wednesday, the RSS Awards Ceremony will celebrate outstanding contributions to statistics, before the Barnett Lecture and the awards and poster reception. Congratulations to all this year's award recipients.

I encourage you to explore the posters and talk to their authors. The conference concludes on Thursday evening

with dinner at Bournemouth Pavilion, offering a final opportunity to celebrate and catch up with colleagues.

This conference is possible only because of the hard work and generosity of the many people who have contributed to its programme and organisation. My thanks go to the RSS Conference Board, session organisers, speakers, chairs, poster presenters, sponsors, exhibitors, volunteers and venue staff. I am particularly grateful to Paul Gentry and the conference team for coordinating such a large event.

To help everything run smoothly, I ask speakers to arrive in good time, introduce themselves to their chairs and keep within their allocated time. Please speak to the RSS team or a conference volunteer if you need assistance.

I hope you have an enjoyable conference and leave Bournemouth with new ideas, new connections and renewed enthusiasm for statistics.



Dr Helen Ogden

Programme Chair
RSS 2026 Conference

General event information

Badges

Conference attendees are asked to always wear their badges and lanyards while in the conference venue.

The badges provided are intended to last for the duration of the conference, however if your badge gets damaged, please go to the registration desk where a replacement can be printed.

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

Bags and Security

The venue security staff will be undertaking bag checks on entry to the centre, therefore please only bring necessary items into the venue to avoid delays. Please avoid bringing large bags and suitcases to the venue – they will need to be searched.

Please do not leave any bags unattended around the venue.

Cloakroom

There is a cloakroom in the main foyer by registration for coats and bags. This is operated by the venue and there will be a charge for depositing items in the cloakroom.

The Society accepts no responsibility for any items which may be lost or damaged.

Conduct policy

The Society operates an event conduct policy and requires attendees to always adhere to the policy while in the conference and its associated events. The full text of the policy can be found at rss.org.uk/conduct.

If you wish to raise concerns or complaints under this policy, please contact the registration desk or reach out to a member of RSS staff who can be identified by their badges.

rss.org.uk/conference2026
[@rssannualconf](https://twitter.com/rssannualconf) [bsky.social](https://www.bsky.social)

Conference app

The conference app is where you can view the most up to date information about the conference programme, plan your conference diary, message other attendees, submit feedback and questions.

A link with login details will be sent to all attendees in advance of conference – the email will go to the email address you used to register (please check your junk/spam folders). The conference app is provided by Brief2Event using the CrowdComms platform.

There will be a help desk for any issues with accessing the app situated near to the registration desk in the Windsor foyer.

Daytime catering

Lunch as well as tea/coffee on arrival, at the mid-morning break and the mid-afternoon break is provided as part of your conference fee.

All refreshments will be served in the Windsor Hall.

There may be queues for refreshments, especially at lunchtime, so we do ask you to be patient and stagger your arrival at the serving points wherever possible.

There will be multiple serving points – indicated on the plan on page 11 – please make use of all of them as this will keep the queues shorter.

The organisers have arranged for as much seating as possible to be available in the catering area but there will not be enough for everyone at the same time. Please be considerate of those who require somewhere to sit.

Dietary requirements

At lunchtimes for those attendees who have notified the organisers of special dietary requirements* please go to one of the serving points where a member of catering staff will be able to assist.

For the conference dinner please collect a place card on arrival at the Bournemouth Pavilion.

The conference organisers have passed all dietary requirements notified to us during registration to the venues for lunches and the conference dinner, however it is not always possible to provide dietary options for the other evening social events. If you are concerned about this, please contact the RSS conference team.

Menu information will be provided in the conference app.

* *There will be vegetarian options provided at lunchtime which do not require any special arrangements.*

Evening social events

There are no tickets for these events, however, please only attend if you have pre-booked during online registration as we are only catering for the number of people booked.

If you are not sure whether you have booked, please contact conference@rss.org.uk in advance of conference or ask at the registration desk.

Both the welcome reception and dinner venues are around 5 minutes' walk from the conference centre.

Exhibition

Please make time to visit our exhibitors.

The exhibitors' stands are in the Windsor Hall alongside the catering area. This area will be open at the following times:

TUESDAY 8 SEPTEMBER	8.15AM – 5.00PM
WEDNESDAY 9 SEPTEMBER	8.30AM – 7.30PM
THURSDAY 10 SEPTEMBER	8.30AM – 4.00PM

Local information

Information about the local area and amenities, including maps and guides, can be found here: www.bournemouth.co.uk

Meeting areas

Apart from the seating available in the Windsor Hall alongside the exhibition there are meeting areas available around the centre that can be used for informal meetings including the Bayview Gallery, Chine Lounge and the Windsor Bar.

Mobile devices

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

Photography and filming sessions

The Society will have a photographer taking photographs in many sessions and at social events. The Society may use photographs taken in conference reports, publications and in future publicity materials. If you would prefer your photograph not to be used in this way, please contact Paul Gentry, Head of Conferences & Events p.gentry@rss.org.uk.

Please note that the Society is filming a selection of keynote and invited sessions in the Solent Hall, the recordings of which will then be made available on the Society's YouTube channel.

Poster presentations

Posters will be on display in the Windsor Hall throughout the conference. The poster reception on Wednesday evening will provide an opportunity to speak with the authors – the final list of posters being presented will be available on the conference app and on information boards in the venue.

Presentation desk

For speakers wishing to submit or amend their presentations during the conference and for poster presenters registering their poster the presentation desks are in the Windsor Bar area behind registration.

Quiet/Prayer Room

If you require a quiet space to get away from the noise of conference or need to somewhere to pray, you will find space allocated in the Solent Hall Dressing Rooms on the ground floor - please respect other users of the rooms.

Registration desk

The conference registration desk can be found in the Windsor foyer by the main entrance and will be open at the following times:

MONDAY 7 SEPTEMBER	3.00PM – 6.30PM
TUESDAY 8 SEPTEMBER	8.15AM – 6.00PM
WEDNESDAY 9 SEPTEMBER	8.30AM – 6.00PM
THURSDAY 10 SEPTEMBER	8.30AM – 4.00PM

Session locations

Plenary sessions will be held in the Solent Hall. All other sessions will be held in the conference rooms and suites on the two levels of the centre.

Please give yourself plenty of time to get to your chosen session before it starts.

ALL sessions are open to all attendees registered to attend on the relevant day (unless otherwise stated).

Stewards and staff

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

Timings for presentations

The following timings for presentations will **normally** apply:

- **Keynote talks:** 50 minutes **including** time for questions and discussion
- **Invited talks:** 20-30 minutes **plus** time for questions and discussion
- **Contributed talks:** 20 minutes **including** time for questions and discussion
- **Rapid-fire talks:** 5 minutes with **no** questions or discussion

Wi-Fi access

Free wifi is available in the venue.

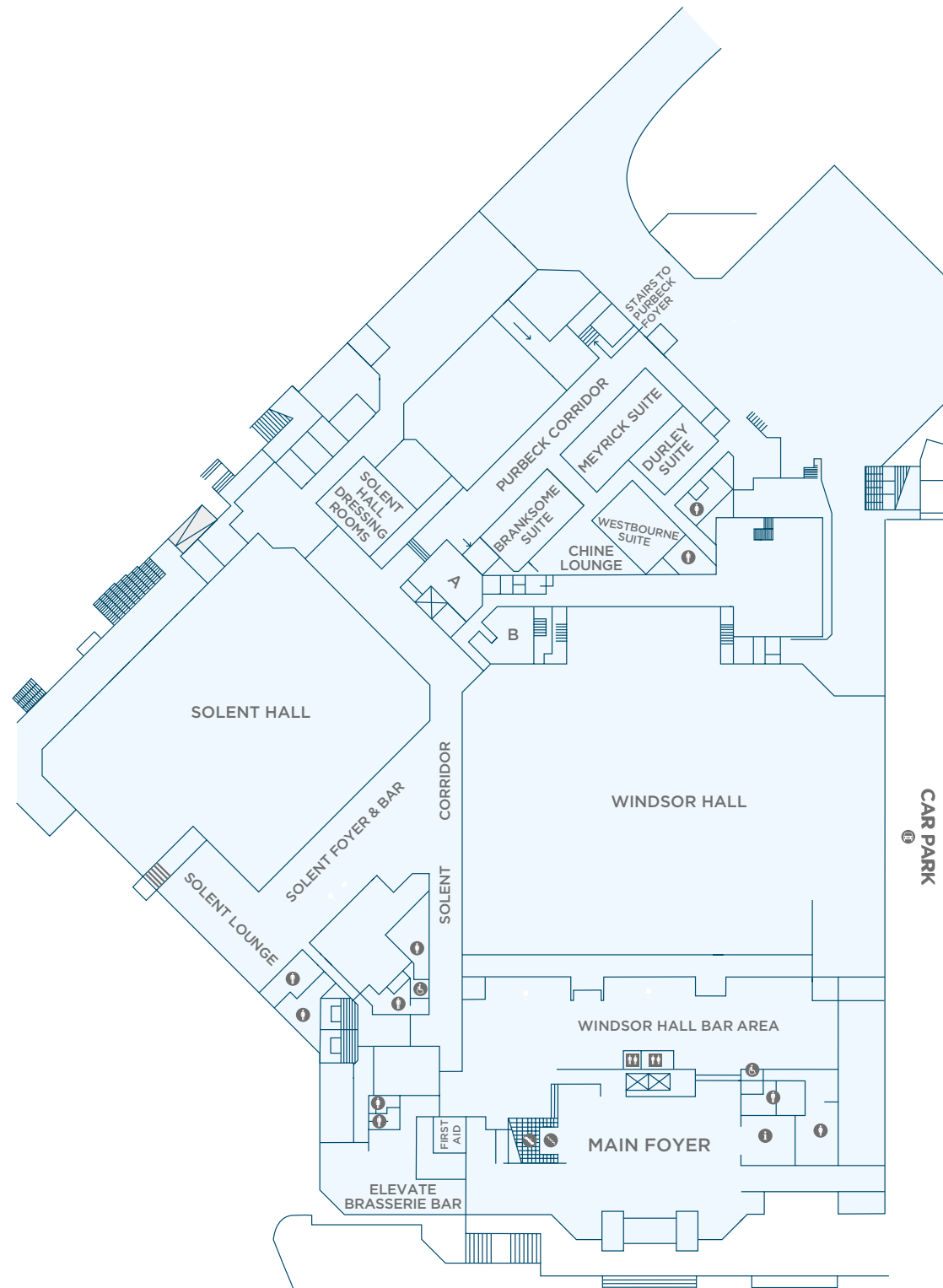
Select: _ BIC _ Public

Please follow the prompts on the screen/landing page to connect

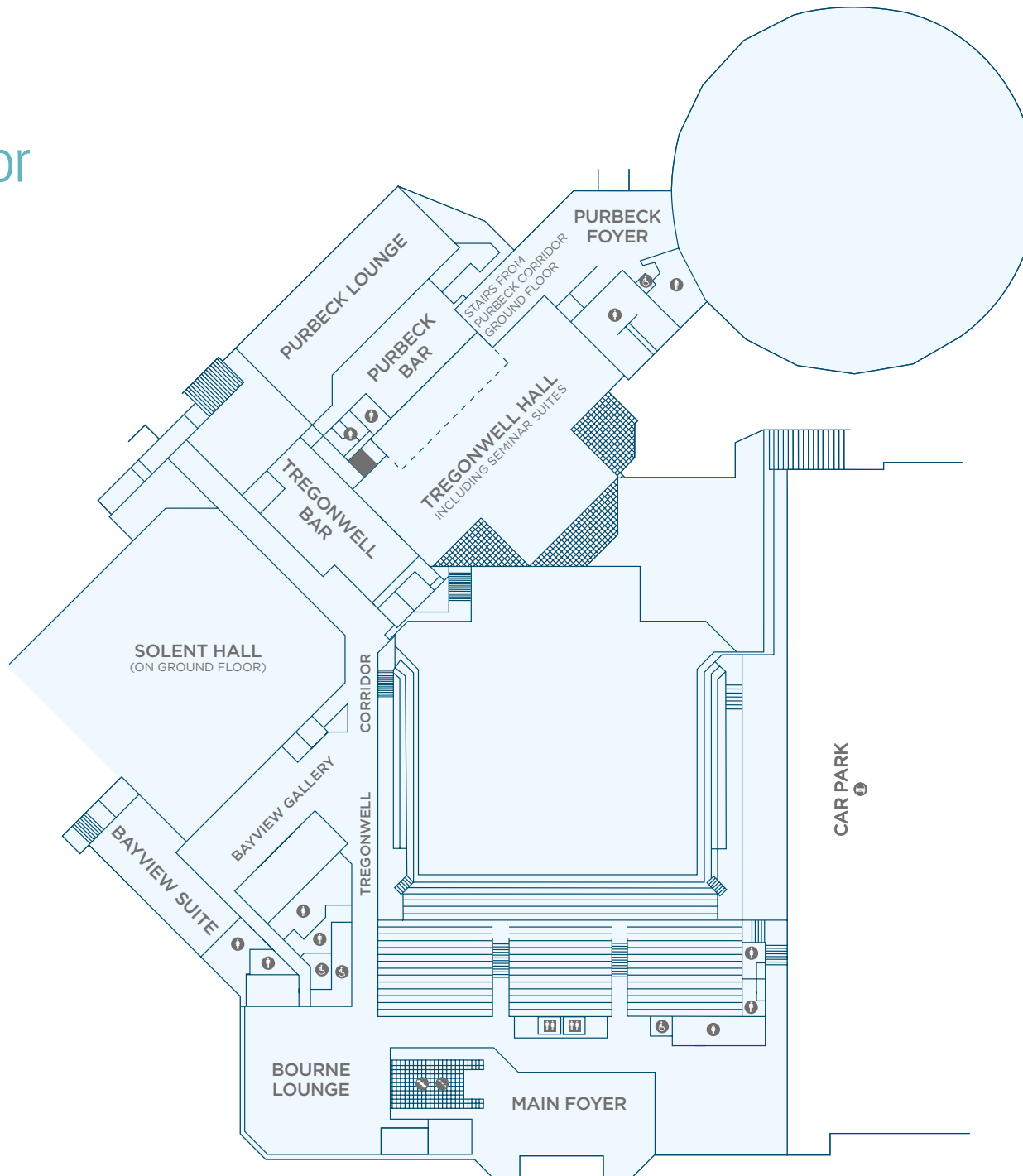
Please note this will **not** be suitable for large downloads or streaming.

Venue Plans

Ground floor



First floor



Exhibitors at RSS 2026 Conference

1 SAIL Databank

Co-headline supporter

The SAIL Databank, based at Swansea University, is a world-leading Trusted Research Environment (TRE) that enables researchers to securely access and analyse anonymised, population-scale data for public benefit. For nearly 20 years, SAIL has brought together a rich range of routinely collected data from health, social care, education, housing and other public services, creating opportunities for innovative research that can inform policy, improve services and enhance people's lives.

SAIL provides a secure, privacy-protecting environment where approved researchers can work with linked data while maintaining the highest standards of information governance and data security. Its experienced multidisciplinary team provides expertise in data acquisition, linkage, management, analysis and research support, helping organisations turn complex data into meaningful evidence.

Working with universities, government, the NHS, charities, industry and research organisations across the UK and internationally, SAIL supports collaborative, data-intensive research across a wide range of disciplines.

SAIL is committed to enabling responsible data use, fostering innovation and collaboration, and delivering research with real-world impact. Its trusted approach demonstrates how data can be used safely and effectively to address important societal challenges and improve outcomes for people and communities.

saildatabank.com



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2 Timberlake

Timberlake is a global brand with over forty years of experience and expertise as a supplier of statistical, econometric and forecasting software packages; the delivery of quality training courses; and a consultancy service provider. We provide a total solution to our diverse range of clients across the fields of statistics, econometrics, forecasting, quantitative and qualitative research, epidemiology, finance, political and social sciences as well as data visualisation.

Our vision is to be a world class provider of cutting edge statistical, econometric and operational research software and training solutions. Investment in our core values and staff is fundamental to our success. We support all of our customers to be the best in class of their field, globally.

timberlake.co.uk

timberlake

3 UK Data Service

The UK Data Service is the UK's leading data repository, providing access to the nation's largest collection of social, economic and population data.

We support researchers, analysts, policymakers, educators and students to discover, access and use trusted data to generate insights that shape policy, inform decision-making and advance research.

Our expert team provides guidance, resources and training to help researchers develop the skills and confidence to work with data securely, responsibly and effectively. From finding and accessing data to managing, sharing and reusing research outputs, we support researchers throughout the data lifecycle.

Visit our stand to find out how the UK Data Service can support your research.

Our team will be available to demonstrate how to access our data, explain our services and share opportunities to develop your data skills. Whether you are planning your next project, developing your data skills or looking for advice on best practice; we are here to help you make the most of data.

ukdataservice.ac.uk



4 The Office for Statistics Regulation (OSR)

The Office for Statistics Regulation (OSR) is the independent regulator of official statistics in the UK. We work to ensure that statistics produced by government are trustworthy, high quality and provide real value to society. As the regulatory arm of the UK Statistics Authority, we are independent of government ministers and separate from the organisations that produce statistics.

We set the standards for official statistics through the Code of Practice for Statistics and assess how well producers meet those standards. Through our regulatory work, we champion the responsible production and use of statistics across the UK. Our Vision - Statistics should serve the public good.

We believe statistics serve the public good when they are trustworthy, high quality and relevant, helping people to better understand the world around them and make informed decisions. By promoting confidence in statistics and encouraging their effective use, we help ensure that statistics inform debate, support accountability and enable better outcomes for society.

statisticsauthority.gov.uk



5 Jumping Rivers

Jumping Rivers has delivered quality data insights from day one. Based in Newcastle and founded in 2016, the company is bringing a fresh approach to the world of data analytics. Our trainers and consultants come with over 100 years combined experience in R, Python, Stan, Scala and other programming languages. We have worked with some of the largest (and smallest) companies in the world.

jumpingrivers.com



6 Oxford University Press (OUP)

Oxford University Press (OUP) is the world's leading university press with the widest global presence. Our academic publishing programme serves scholars, teachers and researchers, publishing important and rigorous research and scholarship across subject areas stretching from History to Life Sciences to Economics.

corp.oup.com



7 Cambridge University Press (CUP)

Cambridge University Press is a not-for-profit publisher that dates from 1534. We are part of the University of Cambridge and our mission is to unlock people's potential with the best learning and research solutions. Visit our stand to discuss publishing with us, browse our publications and get a discount.

cambridge.org/rss2026



8 International Centre for Mathematical Sciences

The International Centre for Mathematical Sciences, Edinburgh advances the mathematical sciences by fostering collaborations between researchers and disseminating their discoveries and stimulating the impact of mathematical innovation on the world, promoting interactions with other disciplines and industry; ICMS contributes to the future of the mathematical sciences through the training and support for the next generation of mathematicians; and to build and connect international research communities, encouraging their diversity and dynamism.

The ICMS stimulates and promotes the mathematical sciences through diverse workshops and research-focused activities in our outstanding facilities in central Edinburgh. Our vibrant events programme attracts leading mathematical scientists from the UK and internationally.

ICMS also organises other mathematical activities, such as our very popular Research-in-Groups programme, allowing small groups of mathematical scientists to come together to work on a project without distraction; an extensive knowledge exchange programme; public engagement; and our innovative Mathematics for Humanity programme using mathematics for the benefit of society.

icms.ac.uk



Exhibitors at RSS 2026 Conference

9 Amelco UK Ltd

Founded in 2006 by veterans of the global financial sector, Amelco's legacy in the gambling industry is built on a deep understanding of quantitative analysis and high-frequency trading. We apply this expertise to develop bespoke trading and sportsbook solutions for leading operators, including Fanatics, Hard Rock Bet, Entain, and Flutter Entertainment. Our end-to-end platform is the result of nearly two decades of development, designed to meet the rigorous demands of today's gambling market.

With offices in London, Poland and Hungary, Amelco draws on world-class technical talent to deliver some of the most advanced modular solutions available. Our proprietary systems are engineered for speed and scale, providing best-in-class pricing, execution and risk management. This data-driven approach, combined with our commitment to technical excellence, ensures our global partners receive industry-leading technology and service.

Since 2024, we have significantly expanded our quantitative research team, bringing in seasoned quants from leading firms while also developing graduate talent. This investment is laying the foundation for world-class in-house pricing capabilities and the next generation of innovation.

amelco.co.uk



rss.org.uk/conference2026
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10 Taylor & Francis/CRC Press

CRC Press publishes books and digital resources in science, technology, engineering, mathematics, and medicine. We aim to broaden thinking and advance understanding in the sciences. To do this, we cover both established and emerging topics. We publish across all established and emergent STEM and Medicine topics including AI and machine learning, drug delivery, IT security, data science, genetics, gaming and animation, energy, climate change and sustainability, robotics, and much more. Our Chapman & Hall imprint publishes books in statistics, data science, and mathematics. We publish for researchers, academics, professionals, and students. Across Taylor & Francis, we also publish over 2,500 journals, including many in statistics and data science.

taylorandfrancis.com routledge.com



11 The Royal Society

The Royal Society is the national academy of sciences in the UK. It is a Fellowship of many of the world's most eminent scientists and our activities include giving grants, policy research, holding scientific meetings and publishing. Our journals, including the world's longest-running scientific journal, the Philosophical Transactions, welcome submissions of research, reviews and theme issue proposals in all areas of statistics. We offer high-quality peer review, exceptional author service and free open access via our Subscribe to Open model, as well as the opportunity to join a rich authorship history including the likes of Darwin, Faraday and Newton. Find out more by visiting us in the exhibition.

royalsociety.org



A Royal Statistical Society

Founded in 1834, the Royal Statistical Society is one of the world's most respected organisations championing the power of data to inform understanding, shape policy, and drive decisions for the public good.

Our 10,000+ members span academia, industry, and government, united by a shared commitment to statistical excellence and evidence-based thinking. Membership connects you to a prestigious network of peers, mentors and thought-leaders, often across sectors you wouldn't otherwise encounter.

From shaping public policy on issues like COVID-19, official statistics, and climate change, to volunteering in sections and organising conferences and events, our community plays a vital role in advancing the field and its impact.

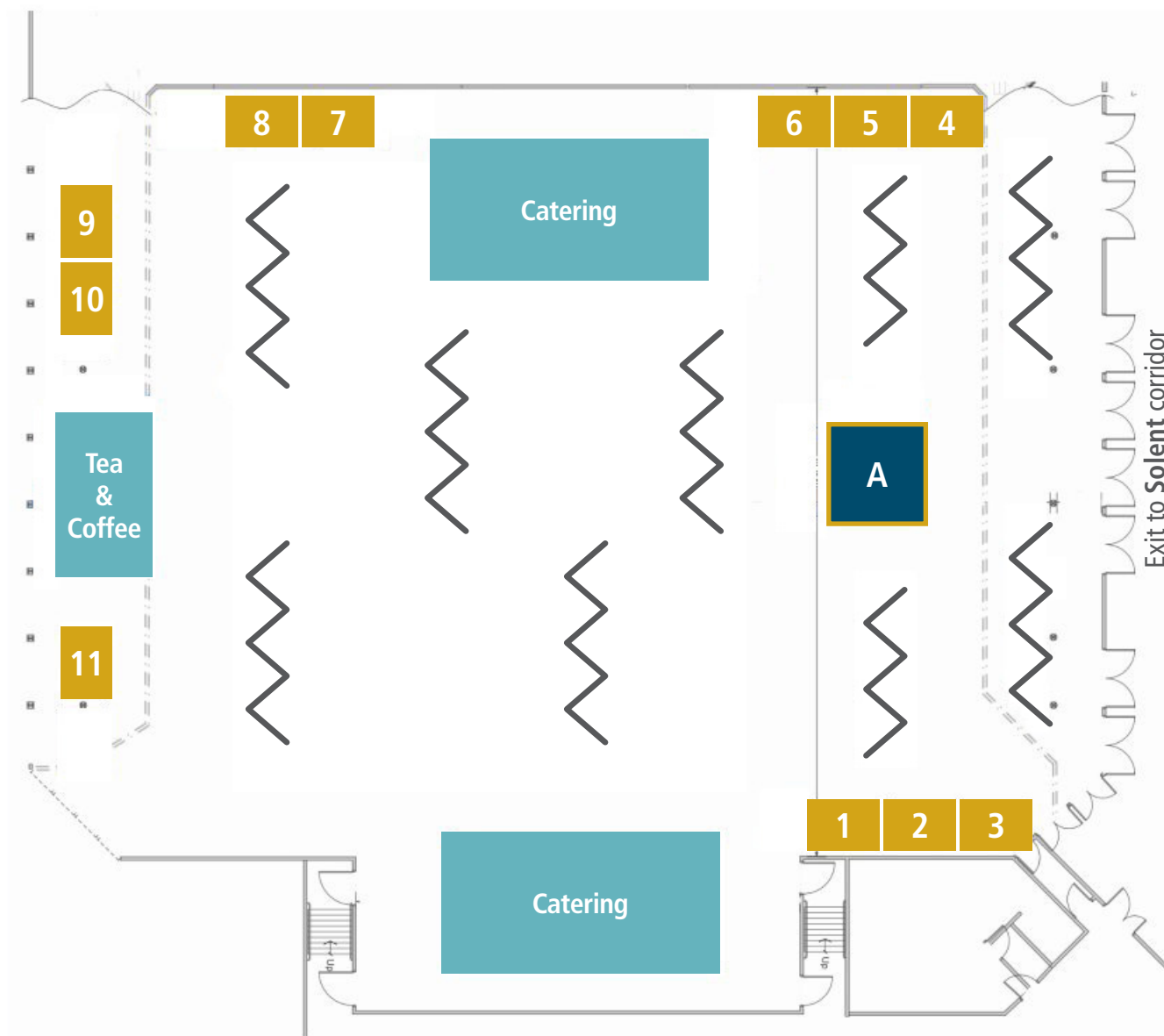
Together, we're building a world where data is at the heart of understanding and decision-making.

rss.org.uk



Exhibitor Plan

BOURNEMOUTH
7-10 September 2026



Exhibitor key

- | | |
|----|---|
| 1 | SAIL Databank |
| 2 | Timberlake |
| 3 | UK Data Service |
| 4 | The Office for Statistics Regulation (OSR) |
| 5 | Jumping Rivers |
| 6 | Oxford University Press (OUP) |
| 7 | Cambridge University Press (CUP) |
| 8 | International Centre for Mathematical Sciences (ICMS) |
| 9 | Amelco UK Ltd |
| 10 | Taylor & Francis/CRC Press |
| 11 | The Royal Society |
| A | Royal Statistical Society |

Wellbeing at RSS 2026

This year at conference, we are partnering with EventWell to deliver Wellbeing sessions during breaks in the programme:

Breathe & Recharge – Guided Breathwork (15 minutes)

Take a moment to reset with a guided breathwork session designed to help you recharge for the rest of the day. Using simple, accessible breathing techniques, you'll learn how to release tension, increase focus, support digestion after lunch, and boost energy levels without leaving your chair.

Suitable for everyone, with no previous experience required.

Chair Yoga – Relax & Reset (15 minutes)

Step away from the demands of the conference and enjoy a gentle chair yoga session designed to ease physical tension and calm the mind. Through simple seated stretches, mindful movement and relaxation techniques, you'll release stiffness from the neck, shoulders and back while improving posture, circulation and concentration.

Suitable for all abilities and everyday clothing – no equipment or previous experience needed.

These sessions will take place in the Solent Lounge at the times listed opposite

In addition to the EventWell sessions, RSS staff will be leading a 5km jog on Tuesday morning.

Schedule

TUESDAY 8 SEPTEMBER

7.30am	5km jog, meet outside the Bournemouth International Centre
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1:35 – 1:50pm	Breath work in the Solent Lounge
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3:25 – 3:40pm	Chair yoga in the Solent Lounge
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WEDNESDAY 9 SEPTEMBER

1:35 – 1:50pm	Breath work in the Solent Lounge
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3:25 – 3:40pm	Chair yoga in the Solent Lounge
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RSS International Conference 2027

THE UK'S ANNUAL SHOWCASE
FOR STATISTICS & DATA SCIENCE

ICC WALES 6-9 September

SUBMISSIONS
FOR INVITED
SESSIONS
NOW OPEN

The RSS conference brings together the statistics and data science community from across the UK, Europe and around the world to share knowledge and learn about latest developments.

With attendees from over 30 countries and all sectors using statistics and data, this is a must-attend event for professionals, researchers, students and everyone interested in the impactful application of statistics and data science.

As usual, the conference programme will feature top keynote speakers, invited topic sessions, professional development workshops, contributed and rapid-fire talks, and poster presentations, as well as many opportunities for networking.

For more details visit: rss.org.uk/conference2027



Sponsors

Co-headline supporters



MSD Sharp & Dohme LLC, Rahway, NJ, USA

At MSD, we are united around our purpose: We use the power of leading-edge science to save and improve lives around the world. For more than 130 years, we have brought hope to humanity through the development of important medicines and vaccines. We aspire to be the premier research-intensive biopharmaceutical company in the world and are at the forefront of research to deliver innovative health solutions that advance the prevention and treatment of diseases in people and animals. We foster a diverse and inclusive global workforce and operate responsibly every day to enable a safe, sustainable and healthy future for people and communities worldwide.

Central to this mission are our people. Whether creating medicines to address the world's most urgent health challenges, developing technology-based healthcare solutions, or helping ensure access to essential vaccines, they are united by a commitment to innovation and improving patients' lives. At MSD, you'll find rewarding opportunities, diverse experiences, and an unwavering commitment to ethics and integrity. As part of our team, you'll collaborate with talented colleagues whose sense of purpose complements your own.

[msd.com](https://www.msd.com)

[@rssannualconf.bsky.social](https://rss.org.uk/conference2026)



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SAIL is committed to enabling responsible data use, fostering innovation and collaboration, and delivering research with real-world impact. Its trusted approach demonstrates how data can be used safely and effectively to address important societal challenges and improve outcomes for people and communities.

saildatabank.com

Supporting sponsors



Awards & Poster Reception sponsor

Smith Institute is an Oxford-based consultancy specialising in advanced mathematics, statistics, data science, and artificial intelligence. Our mission is to deliver a positive impact for the economy, environment, and society.

For over 28 years, we have supported clients across government, energy, transport, space, and consumer goods with their most complex challenges. Our work includes improving the operation of the electricity system, optimising satellite capacity, forecasting consumer demand, supporting effective infrastructure planning, and independently verifying the algorithms used in spectrum auctions.

We combine mathematical expertise with an understanding of each client's operating environment to turn analysis into action and support critical strategic and operational decision-making.

smithinst.co.uk



Event sponsor

Jumping Rivers has delivered quality data insights from day one. Based in Newcastle and founded in 2016, the company is bringing a fresh approach to the world of data analytics. Our trainers and consultants come with over 100 years combined experience in R, Python, Stan, Scala and other programming languages. We have worked with some of the largest (and smallest) companies in the world.

jumpingrivers.com



Sports Statistics Day sponsor

Founded in 2006 by veterans of the global financial sector, Amelco's legacy in the gambling industry is built on a deep understanding of quantitative analysis and high-frequency trading. We apply this expertise to develop bespoke trading and sportsbook solutions for leading operators, including Fanatics, Hard Rock Bet, Entain, and Flutter Entertainment. Our end-to-end platform is the result of nearly two decades of development, designed to meet the rigorous demands of today's gambling market.

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amelco.co.uk



Quiz night sponsor

Phastar is an award-winning biometrics and data science CRO, trusted by pharma, biotech, and medical device companies worldwide. With a global team of data specialists, we bring expertise, precision, and pace to every trial—because behind every data point is a patient waiting for treatment.

We don't just deliver on-time, high-quality data; we partner with you to turn complexity into clarity. Leveraging best-in-class technology, AI-enhanced analytics, advanced statistical methods, and deep therapeutic expertise, we accelerate regulatory approvals, ensure compliance with global standards, and seamlessly mitigate risk.

Our proven track record in transforming complex data into clear, actionable intelligence enables you to accelerate drug development. With scalable, tailored solutions, we expedite trials, bringing life-changing therapies to patients faster.

phastar.com

Full Programme

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

	Applications in Business, Industry & Finance
	Break
	Communicating & Teaching Statistics
	Data Science & AI
	Environmental & Spatial Statistics
	Invite only
	Medical Statistics
	Methods & Theory
	Networking
	Official Statistics & Public Policy

	Other
	Other Applications of Statistics
	Plenary
	Professional Development
	Rapid Fire
	Social Statistics
	Prize winners

The programme here is correct at the time of going to print. –

Please check the conference app and the online programme for updates to speakers and rooms.

<https://virtual.oxfordabstracts.com/event/76886/program>

Day 1 Monday 7 September

12:45 - 17:00

Professional Development

Pre-conference workshop for early career researchers

Bay View Suite

A Random Walkthrough Statistical Investigations: Chance, Choice, and Discovery – Rachel Hilliam

Career talks from a university, EPSRC, industry and a freelancer

Presentations on RSS membership and publications

Story telling with data visualisation - Nicola Rennie

Pre-booking required with payment

Organised by RSS Young Statisticians Section

17:30 – 18:40

Plenary

Welcome to conference

followed by

Keynote 1: Ethics, Community, Communication, and Capacity Building: The Four Quadrants of Being a Public Health Statistician

Solent Hall

Bhramar Mukherjee – Yale University, USA

Standing at this transformative moment for data science and artificial intelligence (AI), it is hard to predict the role that statistics and statisticians will play in the next ten years. In this lecture, I would argue that the four foundational quadrants of public health (Ethics, Community, Communication and Capacity Building) are critical to our profession. I will share examples of the role a statistician can play in each quadrant.

Ethics: AI algorithms and systems developed on exclusionary datasets and biased training corpora can lead to erroneous conclusions and misguided policies, furthering outcome disparities. Statisticians can play a pivotal role in mitigating systematic sources of bias by considering imperfect data and design into our inferential framework— an expertise that few other quantitative disciplines possess. I will share recent work on data equity to make this point. Community: Statisticians are well-positioned to lead efforts in creating, curating, collecting new and better data and pioneering scientific studies. I will share my experiences of building community partnerships in statistics and launching field studies, a path less travelled by a biostatistician. Collecting new data is crucial in the age of generative AI. Communication: The transformative experience of modelling the SARS-CoV-2 trajectory in India for three years and engaging extensively with global media platforms taught me valuable lessons in scientific communications. It is important that we, as statisticians claim our lane and be present in the public eye as a primary and essential form of science and serve as a trusted source of credible information. Finally, Capacity Building is the only thing that outlives our finite careers. I will share my experience of running an undergraduate summer health data science program for more than a decade in the United States and creating an adapted version of the program for early career researchers in India. This program has recruited more than 200 professionals into the field of statistics. I hope there will be something of interest in at least one of these quadrants for the learned audience.

19:00 - 20:30

Networking

Welcome Reception

Key West Bar & Grill, Bournemouth Pier

Requires pre-booking

Day 2 Tuesday 8 September

09:00 – 10:00

Professional Development

Developing your data skills: How to keep learning with Tidy Tuesday

Bourne Lounge

In this session, a brief introduction to TidyTuesday will be given alongside some tips for how you might approach the data and decide on what you want to focus on. The remainder of the session will be an interactive workshop where participants will be using either R or Python (or another language of their choice) to practice data wrangling and visualisation using TidyTuesday data.

By the end of the session, participants will have developed their data skills, started creating a portfolio piece, and feel more confident about sharing their projects and work with others.

Nicola Rennie - Office for National Statistics, UK

Naomi Penfold - NHS Education for Scotland, UK

Devi Chandran - Bays Consulting, UK

Organised by Nicola Rennie for Software, Technology and Reproducibility in Statistics (STARS) group

Day 2 Tuesday 8 September

09:00 – 10:00

Data Science & AI

Contributed: Applications of Advanced Data Science & AI Methods

Bay View Suite 2

A Unified Framework for Data Center Energy Consumption Forecasting
Mafalda Sá Ferreira - Center for Mathematics and Applications (NOVA Math), Lisbon, Portugal

The Networked Data Lab: Using Novel Data Linkage to Reduce Health Inequalities

Jessica E Butler - NHS Grampian, UK & University of Aberdeen, UK

Performance of models for monitoring sustainable development goals from earth observation: A meta-regression

Joep Burger - Statistics Netherlands

Environmental & Spatial Statistics

Contributed: Spatial and spatio-temporal methods for surveillance and service mapping

Durley Suite

Multi-View Kernel Logistic Regression with Temporal Attention for Spatio-Temporal Electricity Theft Detection

Oluranti Adedamola Afolabi - The Polytechnic Ibadan, Nigeria

Spatiotemporal Analysis and Climate-Driven Predictive Modelling on Lassa Fever Outbreaks in Nigeria: A One Health Approach.

Uchenna P Ogoke - University of Port Harcourt, & African Centre of Excellence for Public Health and Toxicological Research, Rivers State, Nigeria

Mapping healthcare accessibility using open geospatial data and routing models

Alex Westwood - Office for National Statistics, Newport, UK

Medical Statistics

Contributed: Joint models

Tregonwell Hall Suite 2

Biomarkers and Ventilator-Associated Complications: A Robust Joint Model with Independent Degrees of Freedom

Alexander Brown - Queen's University Belfast, UK

Goodness-of-Fit Checks for Joint Models

Jeremy MG Taylor - University of Michigan, USA

Methods & Theory

Contributed: Bayesian and generalised inference for flexible models

Tregonwell 1

A Generalized Bayesian Framework for Estimating Equations Using Quasi-Likelihood

Taban Baghfalaki - The University of Manchester, UK

Bayesian Simultaneous Credible Bands for Polynomial Regression

Fei Yang - The University of Manchester, UK

Bayesian Nonparametric Density Estimation: A Dirichlet Process B-Spline Mixture Model Approach

Lienze Peng - Bayes Business School, City St George's University of London, UK

Methods & Theory

Contributed: Methods for sparse, heavy-tailed, and high-dimensional data

Meyrick Suite

Beyond Pearson's Approximation: Exact Chi Square Methods for Sparse Discrete Data

Paul Wilson - University of Galway, Ireland

Estimating Heavy-Tailed Preference Heterogeneity in Discrete Choice Models via the Student's t-Distribution

Oisín O'Donghaile – Queen's University Belfast, UK

A Structured Estimator for large Covariance Matrices in the Presence of Pairwise and Spatial Covariates

Martin Metodiev - Université Clermont Auvergne, CNRS, Laboratoire de Mathématiques Blaise Pascal, Aubière, France

Official Statistics & Public Policy

Contributed: Administrative Data Analytics: Health, Disability & Labour Outcomes

Bay View Suite 1

Integrated Employment Support and Psychological Therapy: Causal Evidence on Labour Market Outcomes from England's NHS Talking Therapies Programme

Klaudia Tucker-Rzepnicka - Office for National Statistics, Newport, UK

Feasibility research into using administrative data and predictive modelling to produce disability status estimates for England

Matthew Minifie - National Statistician's Office, Newport, UK

Feasibility research into using administrative health data sources to predict general health status

Tolu Adedire - Office for National Statistics, Manchester, UK

Day 2 Tuesday 8 September

09:00 – 10:00

Other Applications of Statistics

Contributed: Modelling Football's Competitive Nature

Tregonwell Hall

Mind the gap: investigating competitive balance in the Women's Super League

Jessica Hargreaves - University of York, UK

Evaluating the Influence of Fans on Home Advantage in European Football Using Mixed-Effects Models

Brendon Bhagwandeem - The University of the West Indies, St. Augustine, Trinidad and Tobago

Modelling bookings in association football

Tara R Broughton - University of York, UK

Part of the Sports Statistics Day sponsored by Amelco UK Ltd



Social Statistics

Contributed: Surveys and Wellbeing Insights

Branksome Suite

Transforming disability data collection in Wales: Embracing the social model of disability

Ieuan Davies - Welsh Government, Cardiff, UK

Consumer Wellbeing in Digital Commerce: Insights from Online Grocery Shopping of Individuals with Diabetes

Zhen Zhu - University of Kent, Canterbury, UK

Are interviewer administered follow-ups of web non-respondents still needed to maximise data quality? Evidence from the UK Household Longitudinal Study

Peter W F Smith - University of Southampton, UK

Professional Development

Improving your workflow with Positron and Posit Assistant

Purbeck Lounge

Positron is Posit's newer IDE, built for data science and analysis with R and Python as equals, and Posit Assistant is the AI assistant built into it. Through hands on demonstrations and exercises, this workshop introduces both for exploratory data analysis and code development. Suitable for anyone already comfortable with R or Python, and those looking for a new favourite IDE.

Organised & presented by Kia Mack, Jumping Rivers

10:10 – 11:00

Plenary

Keynote 2: Modus operandi: during five decades of epidemics & as biostatistician behind bars

Solent Hall

Influential study designs, persistence and communications designed to influence are the reflective theme of this keynote address. Success was not inevitable, as failures illustrate

Dame Sheila Bird - MRC Biostatistics Unit, Cambridge & University of Edinburgh College of Medicine & Veterinary Medicine, UK

11:00 – 11:30

Refreshment break

Windsor Hall

11:30 – 12:50

Communicating & Teaching Statistics

Take the lead: How health data and statistics can inspire, enable and connect communities

Purbeck Lounge

Over the past year, HDR UK has launched Take the Lead, a national programme supporting under-served communities across the UK to explore how data can improve health and wellbeing. From within a research-focused institution, we have built a public-facing initiative that rethinks who can lead conversations on health data and statistics.

Our session will take an honest look at the challenges and opportunities of this model, sharing insights from Take the Lead and beyond. Delegates will hear from two Take the Lead grant recipients, Sarah Clay from Voices of Hope and Julianna Smith from Health in the Margins CIC, alongside programme lead Anna Woolman and health data and AI researcher Ralph Ackyea, as they discuss the practicalities of engaging new audiences at scale and within research. Most importantly, this is a chance to hear directly from communities who rarely have a voice in data and statistics conversations.

To aid discussion, we will prepare a short "1-2-4-All" interactive activity, splitting delegates into small groups alongside our speakers and asking them to discuss questions such as "How can statistics be community-led?", "What opportunities are there for good community engagement in statistics?", etc.

Through this approach, we aim to create a safe, welcoming space for questions, ideas and concerns. By the end, we hope delegates leave with a clearer understanding of the barriers under-served communities face and feel empowered to engage these audiences in their own work.

Organised by Anna Woolman for Health Data Research UK (HDR UK) and Public Engagement in Data Research Initiative (PEDRI)

Day 2 Tuesday 8 September

11:30 – 12:50

Data Science & AI

10 key skills for Data Science that universities are failing to teach

Bay View Suite 2

There's been an explosion in Data Science degrees and postgraduate programs and they are not equipping students with the correct skills for actually practicing data science in industry. A combination of poor syllabus and being taught by non-data scientists gives graduates the wrong skills and results in poor job prospects. We'll go through the top 10 skills that all data scientists need to be successful and why they should be taught by people with experience.

Organised by Janet Bastiman and Will Browne for RSS Data Science and AI Section

Environmental & Spatial Statistics

Advances in Auxiliary-Driven Spatially Balanced Sampling Durley Suite

The observational units in many studies—from biological and environmental fields to forestry and beyond—have an explicit spatial location. Additionally, timely and freely accessible data from satellite imagery, aerial photographs, and other remote-sensing sources are becoming increasingly available. In such settings, the importance of spatially balanced sampling is well established, as it helps to accurately capture spatial heterogeneity and to improve the efficiency of survey-based estimates. Furthermore, integrating available auxiliary information is particularly important for further enhancing estimation efficiency.

Auxiliary-driven two-step spatially balanced sampling
Emilia Rocco – University of Florence, Italy

Spatially balanced clusters with prescribed sizes at the unit level
Fabio Carrer – Swedish University of Agricultural Sciences, Sweden

Implicit stratification through spatially balanced sampling designs
Francesco Pantalone – University of Southampton, UK

Organised by Chiara Bocci and Emilia Rocco, University of Florence, Italy

Medical Statistics

Statistical inference for biophysical modelling in healthcare Branksome Suite

The talks in this session will present three recent and methodologically challenging applications of surrogate modelling and statistical inference in complex biophysical systems for a range of healthcare problems, from pulmonary hypertension (high blood pressure in the lungs) to a range of cardiovascular diseases. They will also discuss advances in statistical methodology, from history matching to adaptive multi-fidelity emulation. Overall, the session will provide an overview of the current state of the art in statistical inference for biophysical modelling, both methodologically and in terms of clinical applications in healthcare.

Multifidelity modelling in statistical inference problems
Mihaela Paun - University of Southampton, UK

From Biophysical Modelling to Machine Learning: Virtual Populations for Pulse Wave-Based Cardiovascular Assessment
Jordi Alastruey - King's College London, UK

Uncertainty quantification for high-dimensional, distributed influence biophysical models
Alejandro Diaz - University College London, UK

Organised by Dirk Husmeier, University of Glasgow

Day 2 Tuesday 8 September

11:30 – 12:50

Methods & Theory

Statistical inference in genomics

Purbeck Bar

Variation within genomic datasets offers a wealth of information on underlying processes at different scales: biological, cellular, demographic, evolutionary. Untangling these processes has motivated the development of many innovative statistical techniques going all the way back to Fisher. In this session we will explore some recent developments in statistical inference from genomic data. Current challenges include the computational constraints that arise from ever-growing dataset size, scalable statistical methods for reconstruction of genealogical histories, phenotype prediction from genotypic scores, fairness and bias in genomic prediction, and complex issues arising from real data such as sequencing error and missingness.

Statistical learning for allele frequency time series data

Jere Koskela - Newcastle University, UK

A statistical test for genetic ancestry-specific performance disparities in variant effect predictors

Brieuc Lehmann - UCL, UK

Distinguishing false positives from real gene-by-gene interactions

Anastasia Ignatieva - University of Oxford, UK

Organised by Paul Jenkins on behalf of RSS Computational Statistics & Machine Learning Section

Methods & Theory

Perspectives on causation and the foundations of modelling: part I

Tregonwell Hall Seminar Suite 2

Part I of this two-part session (continued on Wednesday) will emphasise conceptual aspects associated with causation and the foundations of modelling, with reference to recent research.

Title TBC

Rhian Daniel - Cardiff University, UK

Testing Semiparametric Models

Rajen D Shah - University of Cambridge, UK

Confidence sets of causal models

Charlotte Edgar - Imperial College London, UK

Organised by Heather Battey, Imperial College London

Official Statistics & Public Policy

Population dynamics: Leveraging Administrative and Emerging Data Sources to better measure the movement of people

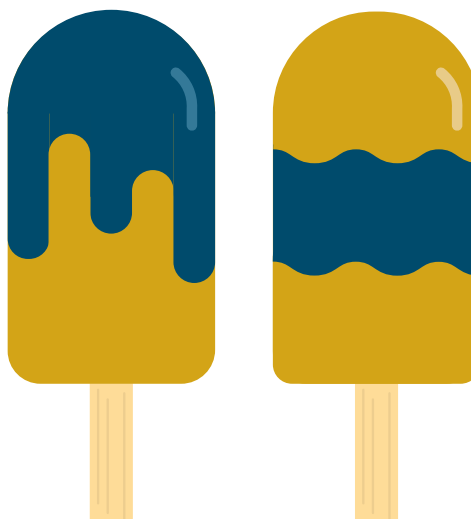
Bay View Suite 1

Residential moves are one of the most significant drivers of demographic change at the local level, yet measuring them accurately remains a challenge. This session will showcase new analysis and methodological advances aimed at improving estimates of internal migration within the UK. We will present our work to date, which seeks to harness a broader range of government administrative data sources, including tax and health records, to enhance the precision and accuracy of UK population estimates.

Looking ahead, we will explore the potential of innovative data sources such as mobile phone records. With near-universal mobile phone ownership and the ability to capture almost real-time location data, these sources offer unprecedented opportunities to understand population mobility patterns. However, their use raises important practical, ethical, and commercial considerations for National Statistical Institutes (NSIs), which we will discuss.

Finally, we will consider how new data on population flows—both for UK and international residents—enables us to move beyond the traditional “usual resident” concept. By incorporating temporary mobility, or moves lasting between 1 and 12 months, we can provide richer insights into population dynamics including seasonal changes, supporting more informed and impactful decision-making across government and society.

Organised by Cath Bremner for Office for National Statistics, UK



Day 2 Tuesday 8 September

11:30 – 12:50

Other Applications

Statistical modelling in sport

Tregonwell Hall

Sport is an integral part of everyday life, and sports data present unique opportunities and challenges for statisticians. This session offers valuable insights for both sports enthusiasts and statisticians, highlighting innovative methods at the intersection of theory and practice in this dynamic and rapidly evolving field. Presenters will showcase cutting-edge statistical methodologies applied across a variety of sports, showcasing bespoke models for sports applications and data-driven solutions to real-world problems.

Speakers:

Ian McHale - University of Liverpool, UK

James Reade - University of Reading, UK

Lisa McFetridge - Queens University Belfast, UK

Organised by Jessica Hargreaves for RSS Statistics in Sport Section

Part of the Sports Statistics Day sponsored by Amelco UK Ltd



Professional Development

Embedding Equity: Experiences, Challenges, and Impact of Athena Swan Initiatives in Statistics

Bourne Lounge

Athena Swan initiatives continue to play a central role in advancing gender equality and fostering inclusive cultures within academic and research environments. Across statistical sciences, departments and institutions are engaging with Athena Swan frameworks in diverse ways—implementing targeted actions, evaluating structural barriers, and developing evidence-based approaches to promote equitable career progression. This discussion panel will explore current practices, successes, and persistent challenges in Athena Swan work within the statistics community. Through shared experiences, participants will examine what meaningful change looks like, how data can guide interventions, and how departments can sustain momentum beyond award cycles. The session aims to provide a collaborative space for reflection, practical insight, and forward-looking strategies that strengthen equality, diversity, and inclusion in our field.

Ioanna Papatsouma - Imperial College London, UK

Ayse Ulgen - Nottingham Trent University, UK

Madhuchhanda Bhattacharjee - University of Manchester, UK

Organised by Ioanna Papatsouma for RSS EDI Advisory Group

Social Statistics

JRSS-A Editors' Invited Session

Meyrick Suite

In this session, three talks will present three recent papers in Journal of the Royal Statistical Society, Series A: Statistics in Society. The papers mirror the diversity of JRSS-A publications, all demonstrating how statistical thinking, design and analyses play a vital role in life and benefit society.

Real-time modelling of the SARS-CoV-2 pandemic in England 2020–2023: a challenging data integration

Daniela De Angelis - University of Cambridge

Estimating the population size of persons contending with homelessness using electronic health records

Laura Cowen - University of Victoria

Embrace the noise: it is ok to ignore measurement error in a covariate, sometimes

Daniel Millimet - Southern Methodist University

Organised by the editors of Series A of the Journal of the Royal Statistical Society

Day 2 Tuesday 8 September

11:30 – 12:50

Methods & Theory

New statistical paradigms for generative AI

Tregonwell Hall Seminar Suite 1

Over the past decade, advances in deep learning and neural network architectures, including transformers, have revolutionised the generation of synthetic content from prompts and training data. Large language models (LLMs) such as ChatGPT, Gemini and Claude are transforming how we learn, work and communicate, while generative AI methods based on GANs, score matching and diffusion models now produce high-quality text, images, audio and video. Yet the black-box nature of these systems raises significant concerns, including misinformation, deepfakes and academic dishonesty.

Efficient and minimax optimal in-context learning with transformers
William Underwood - University of Warwick, Coventry, UK

Kernelized Advantage Estimation: From Nonparametric Statistics to LLM Reasoning
Chengchun Shi - London School of Economics, UK

Learning the score under shape constraints
Rebecca Lewis - University of Oxford, UK

Organised by: Oliver Feng, London School of Economics

Official Statistics & Public Policy

Building public confidence in official statistics: a proactive and reactive approach

Solent Hall

Statistics should serve the public good. To do this, they need to inspire trust and confidence among their direct users, and the wider population whose data are included in them and or who are affected by the decisions made that are based on them.

The UK Office for Statistics Regulation (OSR) provides independent regulation of all official statistics produced in the UK and aims to enhance public confidence in statistics produced and used by the government. This requires a dual approach, which incorporates proactive and reactive actions, delivered in partnership with others across the statistical system.

This session will introduce diverse elements of OSR's work that support public confidence in official statistics.

Francesca Gaunt, Office for Statistics Regulation – to speak on research insights regarding building public confidence and trust in official statistics.

Penny Babb, Office for Statistics Regulation – to speak on the Code.

Ed Humpherson, Office for Statistical Regulation – to speak on the Code, with reference to the new Standards for Public Use and combatting misinformation.

Jeni Tennison, Connected by Data – to speak on the importance of public engagement and involvement.

Lee Bunce, Scottish Government – to speak on preventing misuse of statistics

Organised by Helen Miller-Bakewell, Office for Statistics Regulation

12:50 – 13:50

Lunch

Windsor Hall

13:50 – 15:10

Communicating & Teaching Statistics

Humanising Statistics and Coding through Emotionally Intelligent Teaching

Durley Suite

Feel the Code

Lindsey Compton - University of Birmingham, UK

Emotions and how we respond to them are at the heart of any learning experience. In this talk, Lindsey will present her work on the emotions students experience in introductory computer programming modules in different disciplines and contexts and offer practical recommendations to foster more positive student engagement.

Emotionally Intelligent Pedagogy: Building Students' Resilience
Meena Mehta Kotecha - London School of Economics & Political Science, UK

This talk presents evidence-based insights into the emotional, psychological and cognitive dimensions of studying statistics and quantitative research methods. It introduces empirically tested pedagogical approaches underpinned by an original overarching theoretical framework. These approaches create emotionally intelligent learning environments that foster confidence, engagement and emotional wellbeing, empowering students to overcome anxiety, build resilience, enjoy quantitative courses and flourish academically and personally.

Organised by Meena Mehta Kotecha, London School of Economics & Political Science

Day 2 Tuesday 8 September

13:50 – 15:10

Data Science & AI

Lessons from AI in deployment

Bay View Suite 2

Evolving machine learning models from an initial proof of concept and into a deployed, reliable product is already a difficult challenge. Frequently, this has been seen as an engineer's task, following a statistician handing over responsibility for a trained model. This is rapidly becoming an out-of-date paradigm and the skills needed for deploying and for modelling are becoming increasingly intertwined, with data scientists needing to build with an eye on deployment. The increasing prevalence of AI models adds further complexity to this task, where models are deployed with a wide range of capabilities and the model outputs are harder to validate. Whereas simpler classification tasks could be monitored with familiar statistical performance metrics, the variety of possible outputs from many AI models means that more bespoke monitoring tools are required. How can we ensure that these tools behave as expected and that we can rely on them day to day?

Successfully deploying AI tools requires broad scale strategies that can mitigate against and plan for unexpected behaviour. Furthermore, the potential impacts of these tools means that a holistic framework is needed, going beyond the model performance on specific test datasets and assessing the outcomes they influence downstream of the model output. This can span the skillset of any one individual and need input from multiple teams within an organisation. This session will showcase projects that have addressed this challenge, exploring how rigorous testing and statistical expertise can provide confidence when deploying AI tools, and how teams can be built to address the wide range of skills needed.

Speakers to include:

Jamie L. Fairclough – Dartmouth, USA

Organised by Jamie Fairclough for RSS AI Task Force

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Data Science & AI

From Data Privacy to Synthetic Data: Statistical Dilemmas in AI and Federated Learning in Health Data

Branksome Suite

As health data becomes vital to AI-driven innovation in diseases such as Alzheimer's and cancer, the balance between data utility and personal privacy grows more complex. Promoting secure collaboration through methods like federated learning and synthetic data generation enables insights from sensitive data without exposing individuals, fostering trust across participants and institutions. Embedding these norms requires more than regulatory compliance; it depends on collective commitment to responsible innovation, ensuring AI in health advances science with integrity, inclusivity, and social responsibility.

This session will investigate statistical challenges in AI and federated learning in health data as it relates to data privacy and synthetic data.

Personalised dynamical modelling in healthcare: Opportunities and statistical challenges in synthetic data generation

Krasimira Tsaneva-Atanasova - University of Exeter, UK

Privacy-Compliant Federated Learning on the NTU Platform: Harnessing EU Horizon PHASE IV AI for Early Alzheimer's and Cancer Detection

Ayşe Ülgen - Nottingham Trent University, UK

Using nationally linked routine data for health research: experience of working within secure data environments

Yinghui Wei - University of Exeter, UK

Organised by Ayşe Ülgen, Nottingham Trent University

Environmental & Spatial Statistics

Integrating Topology, Geometry, and Dynamical Systems into Spatial Statistics Methodology

Westbourne Suite

This session focuses on applications of mathematical methods from (Algebraic) Topology, Geometry, and Dynamical systems, to enrich and develop existing methods in Spatial Statistics. It aims to give an overview of recent work on this topic, including applications to real world problems.

Gillian Grindstaff - University of Oxford, UK

Fernando Avellaneda – KAUST, Saudi Arabia

Organised by Ines Henriques-Cadby, Jorge Mateu, Luis Sotomayor-Guaman & Olatunji Johnson, University of Manchester



Day 2 Tuesday 8 September

13:50 – 15:10

Medical Statistics

Advanced Statistical Methods for Biomarker-Driven Research

Bay View Suite 1

Biomarker data are measurements of biological characteristics and can be considered as objective and quantifiable features of biological or pathogenic processes and, in a broader sense, of individual health. They can be used to estimate biological age, producing more precise and less biased alternatives to subjective measures.

This session aims to present and discuss how biomarker-data analysis can be a useful resource in many areas of research, to investigate both physical health outcomes as well as mental health or social/behavioural phenomena (e.g. individual lifestyle patterns).

Statistics plays a key role in this session. On the one hand, biomarker data can be exploited in complex algorithms able to estimate biological age. On the other hand, various advanced statistical approaches can be defined and applied to study the relationships between biomarkers/ biological age and health/social features. These have as common denominator: the definition and use of variables suitable for measuring latent constructs since biological ageing is a latent construct.

The Latent Dimension of Ageing: A Comparative Analysis of Common Methods for Biological Age Estimation using SHARE-DBS data

Alessandra Rosalba Brazzale - University of Padova, Italy

Depression, Biomarkers and the Covid-19 Outbreak

Omar Paccagnella - University of Padova, Italy

Lifestyle Risk Profiles in Older Adults and their Association with Metabolic and Cardiovascular Biomarkers in the fourth wave of the ELSA cohort

Luigi Palla - Sapienza University of Rome, Italy

A Generalized Approach for Estimating the Pace of Aging

Mar Rodriguez-Gironde - Leiden University Medical Center, The Netherlands

Organised by Omar Paccagnella, University of Padova

Methods & Theory

Methodological Advancements in Causal Inference

Tregonwell Hall Seminar Suite 2

This session will showcase some new methodological development in causal inference.

Selective Inference in Adaptive Trials

Tobias Freidling - EPFL, Lausanne, Switzerland

How should we attempt to emulate target trials using observational data?

Oliver Dukes - Ghent University, Belgium

Towards the most powerful test statistics for randomization tests

Zijun Gao - University of Southern California, Los Angeles, USA

Organised by Qingyuan Zhao, University of Cambridge

Methods & Theory

JRSS Series B Joint Editors invited session

Tregonwell Hall Seminar Suite 1

The session will feature three talks, each one selected by one of the three Editors of JRSS Series B as their favourite accepted JRSSB paper from the last year.

Pretraining and the Lasso

Erin Craig - University of Michigan, USA

Robust detection of watermarks for large language models under human edits

Weijie Su - Wharton Statistics and Data Science Department, USA

Multiple Randomization Designs: Estimation and Inference with Interference

Lorenzo Masoero – Amazon, USA

Organised by Timothy Cannings on behalf of the joint Editors of Series B



Day 2 Tuesday 8 September

13:50 – 15:10

Methods & Theory

Advanced dimensionality reduction methods for complex data

Meyrick Suite

Advanced dimensionality reduction methods for data partitioning and structure discovery are the central focus of this session. The talks address challenges in modelling and interpreting complex data, exploring clustering in reduced functional spaces, spectral clustering for mixed data, covariance structure analysis, and autoregressive quantile regression models. The proposals are applied in different fields, including health and education.

A simultaneous criterion to select latent rank, number of clusters and proportion of outliers

Matteo Farnè - University of Bologna, Italy

Feature-based Interpretation of spectral clustering solutions for mixed data

Francesco Palumbo - University of Naples Federico II, Italy

Modelling the quantiles of a longitudinal outcome affected by informative dropout via mixtures of AR(1) latent processes

Maria Francesca Marino - University of Florence, Italy

Model based clustering on reduced functional spaces

Roberto Rocci - Sapienza University of Rome, Italy

Organised by Paolo Giordani, Sapienza University of Rome

Official Statistics & Public Policy

Tales from the Basket: Producing price statistics in the data revolution

Purbeck Bar

The Office for National Statistics (ONS) will discuss how they have approached the most ambitious transformation of UK consumer price statistics in a generation. They will present how innovation in new systems, methods and engagement is reshaping the production of inflation statistics.

Our headline Consumer Prices Index (CPI) figures measure the change in prices across a shopping basket of around 750 frequently purchased goods and services and are used as the inflation target for monetary policy decisions in the UK. To improve the quality of these statistics and meet evolving user needs, we are incorporating new data sources and, along with it, new methods and systems. In line also with the wider ONS's plans for improving the quality of our core economic and population statistics.

The session will open with an introduction on the CPI suite of statistics that the ONS produces and explain what we are changing and what for. Two case studies on areas of the basket where we have already introduced major changes will then be presented. We will conclude with a discussion on lessons learnt and further areas for improvements.

Introductory session on ONS's CPI statistics

Chris Payne – ONS, UK

Case study 1: From supermarket tills to price indices: how scanner data brings vast data to CPI

Aimee North & Tony Liu – ONS, UK

Case study 2: Re-developing rental prices: new models, new data sources

Ian Boreham & Adriana Castaldo – ONS, UK

Discussion on lessons learnt and future improvements

Discussant: **Paul Smith** - University of Southampton, UK

Organised by Adriana Castaldo, Office for National Statistics

Other Applications of Statistics

Closing the gender data gap: the evolution of analytics in women's sport

Tregonwell Hall

Statistical analysis in women's sport has long been constrained by a fundamental problem: lack of data. While men's professional sports have benefited from decades of comprehensive data collection, women's sports have historically received far less investment in tracking, recording, and analysing performance. However, as interest in women's sport grows and teams seek to professionalise their approaches, the landscape is beginning to shift. This session explores how the gender data gap has affected statistical research and decision-making in women's sport, and whether meaningful change is underway.

Panel members:

Tina Keech - Head of Women's Football Research at Sports Interactive, UK

Alice Harkness-Armstrong – Liverpool John Moores University, UK

Maia Trower - The Football Association, UK

James Debenham - The Football Association, UK

Organised by Miltiadis Mavrakakis & Jessica Hargreaves for RSS Statistics in Sport Section

Part of the Sports Statistics Day sponsored by Amelco UK Ltd



Day 2 Tuesday 8 September

13:50 – 15:10

Professional Development

Towards an accredited framework for short statistics training courses in the UK

Purbeck Lounge

The demand for flexible, high-quality statistics training has grown significantly across academia, industry, and the public sector. Short courses offered by universities, professional bodies, and private providers play a vital role in upskilling professionals and supporting evidence-based decision-making. However, the current landscape lacks a standardized accreditation system to ensure consistency, quality, and recognition of these offerings.

This session proposes a discussion on the development of an accredited framework for short statistics training courses across the UK. Building on the diversity of the current training landscape, we will explore key considerations, including defining minimum standards for content and delivery, establishing mechanisms for quality assurance, and creating pathways for formal recognition by professional bodies. The discussion will also address challenges such as accommodating diverse learner needs and fostering collaboration among providers.

By introducing an accreditation system, we aim to enhance the credibility of short-course qualifications, support lifelong learning, and strengthen the statistical capacity of the workforce. Attendees will be invited to share perspectives on governance models, implementation strategies, and opportunities for cross-sector partnerships.

Eirini Koutoumanou - UCL, UK

Chibueze Ogbonnaya - UCL, UK

Dean Langan - UCL, UK

Clare Morris - Royal Statistical Society Professional Affairs Committee, UK

Mark Andrews - Nottingham Trent University, UK

Oliver Hooker - PR Stats, UK

Organised by Eirini Koutoumanou for RSS Teaching Statistics Section

Professional Development

Introducing our Data Ethics Case Studies

Bourne Lounge

We are piloting short-form content on data ethics and governance case studies, and in this session we will present the findings from our first batch of case studies. We will hold an interactive workshop where we invite comment and suggestions for further work on these case studies.

Organised by Daniel Bogiatzis-Gibbons for RSS Data Ethics and Governance Committee

Social Statistics

Why social surveys will continue to play an important part in the UK data landscape

Solent Hall

Why academic and other surveys are still important in the UK data landscape

Peter Lynn - University of Essex, Colchester, UK

Olga Maslovskaya - University of Southampton, UK

Why official surveys are still important in the UK data landscape

Sarah Henry - Office for National Statistics, Titchfield, UK

Side by side. Comparing parallel face-to-face and self-completion data collection in Great Britain

Rory Fitzgerald - City St. George's University of London, UK

How much does it matter anyway? Bias in Analysis of Mixed-Mode Data

Liam Wright - UCL, UK

Organised by Olga Maslovskaya and Peter Lynn

15:10 – 15:40

Refreshment Break

Windsor Hall

15:40 – 17:00

Communicating & Teaching Statistics

Data for change: Communicating statistics

Tregonwell Hall Seminar Suite 2

The availability of data and the different media through which we communicate statistics is greater than ever. This presents a challenge for engagement with data across different audiences, from policymakers to the youngest learners. In this session we will examine common data misconceptions, how to develop public understanding, and how AI is changing the way we communicate.

Informing the public: challenges and lessons from communicating official statistics

Mary Gregory - Office for National Statistics, UK

AI and statistics communication: sure, let's delve into that further
Arthur Turrell - Bank of England, UK

Addressing the misconceptions: developing data literacy
Darren Macey - UCL, UK

Organised by Chris Brignell for RSS Education policy advisory group

Day 2 Tuesday 8 September

15:40 – 17:00

Communicating & Teaching Statistics

Biomedical research study design: Back to basics in the Age of AI

Bay View Suite 1

Often overlooked in the age of Big Data and AI is that outputs derived from even the most sophisticated analytics fundamentally depend on the underlying quality of the data. Large volumes of data do not automatically confer quality; data quality must be built into the analytic system before the data are collected. Regardless of whether the data are observational or derive from a randomised controlled trial, appropriate statistically based study designs ensure that the results will be reliable, valid, and useful. However, design basics, and methods for capture of variation and sample size justification require different approaches. In this session, the speakers will cover methods for the strategic application of statistically based Design of Experiments (DOE) as a structured sequential assembly of small modular experiments; how simulation-based techniques can be applied to observational study designs, both to assess feasibility and suitability of the design before data collection and evaluate sensitivity of results to underlying design assumptions after data collection; and highlight and demonstrate available resources online tools such as the online Experimental Design Assistant (EDA) for training researchers and students.

Speakers:

Penny Reynolds - retired; University of Florida, USA

William Browne - University of Bristol, UK

Esther J Pearl - NC3Rs, UK

Organised by Penny Reynolds

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Data Science & AI

Machine Learning & Global Health: disease surveillance with graph-based active learning, foundation models and deep latent constraints

Bay View Suite 2

This session aims to showcase recent technical advances in statistical machine learning and uncertainty quantification, to accelerate disease surveillance in real-time, and to reach typically under-sampled population subgroups more equitably. Topics covered will include novel graph-based active learning methodologies to optimise disease surveillance, present Bayesian joint multi-level techniques to integrate large-scale unrepresentative data streams with traditional survey data, showcase upsampling approaches of socio-economic indicators with foundation models that integrate generic satellite imagery features, present Bayesian rate constraint models to uncover human contact behaviour, and illustrate novel prior models based on pretrained neural network architectures for fast spatial mapping. A facilitated discussion between the audience and all speakers will aim to discuss nuances, point out limitations, and galvanise next steps and opportunities.

Accelerating disease surveillance - towards a ready-to-deploy playbook
Seth Flaxman - University of Oxford, UK

Optimal disease surveillance with graph-based active learning
Joseph Tsui - University of Oxford, UK

Multi-metric semi-mechanistic approaches to Improve malaria surveillance in Sub-Saharan Africa for strategic sub-national tailoring.
Punam Amratia - Ifakara Health Institute, Dar es Salaam, Tanzania,

Generalised satellite imagery features to upsample high-resolution socio-economic variables with foundation models
Juliette Unwin - University of Bristol, UK

Estimating generalised social contact intensities with Bayesian deep constraint models.
Oliver Ratmann - Imperial College London. UK

Multi-Bridge Denoising Diffusion Probabilistic Models for satellite-imagery based surveillance.

Mélodie Monod - Université Paris Dauphine France

Discussion round and Q&A

Organised by Oliver Ratmann & Seth Flaxman for Machine Learning & Global Health network (<https://mlgh.net/>)

Environmental & Spatial Statistics

AI and impact on climate

Purbeck Bar

Use of AI has accelerated exponentially and so too has the energy requirements. This panel session will debate whether the positive impacts of AI outweigh the huge impact on climate from its training and use.

Organised by Donna Phillips for RSS AI Task Force



Day 2 Tuesday 8 September

15:40 – 17:00

Medical Statistics

Complexities and dissemination of data analysis in the psychedelic space

Durley Suite

The psychedelic industry is at a pivotal moment with scientific advancements and cultural acceptance increasing public interest and engagement when data are published. Cross functional collaboration is key when communicating complex data to multi-disciplinary audiences. In the field of clinical research, statistical and medical writing teams work hand in hand to ensure complex data are analysed, interpreted and communicated accurately.

Due to variable treatment schedules, rapid acting nature and varied psychoactive experiences of different psychedelic molecules, data analyses can often be complex and difficult to interpret. Even simple summary statistics can be taken out of context. To promote clear understanding; appropriate interpretation and communication are vital.

This workshop will focus on examples and discussions of data previously published by GH Research and other companies investigating the use of psychedelic molecules for similar indications. We will cover the importance of correct context and how easily misinterpretation can occur. Attendees will then be asked to look at a few simulated examples using an RShiny dashboard and discuss with the panel at the end.

Nathan Burns - GH Research, UK

Rachael MacIsaac - GH Research, UK

Organised by Rachael MacIsaac— GH Research

Methods & Theory

Heterogeneous treatment effects in causal inference

Solent Hall

Causal inference is an area which lies on the bound of statistics, data science, econometrics and main domain areas. In this way it has secured its place as a large and vibrant interdisciplinary area of research in mathematical methodologies. This session features four novel developments in the estimation and study of heterogeneous treatment effects, i.e. causal effects for individual units in the study. The topics covered in the session include causal inference with data integration and individually randomized trials, extensions of the conditional average treatment effect to distributional effects, and machine learning and debiased tests for heterogeneous treatment effects.

Debiased Conditional Independence Tests for Causal Effects

Maria Nareklashvili - University of Glasgow, UK & Stanford University, Stanford, USA

Statistical Learning for Heterogeneous Treatment Effects: Pretraining, Prognosis, and Prediction

Maximilian Schuessler - Stanford University, USA

Robust model-agnostic estimation of individualized treatment effects in randomized trials leveraging external data

Rickard Karlsson - Delft University of Technology, Delft, Netherlands

Causal Effect Heterogeneity: Beyond the Conditional Average Effect

Richard Post - Erasmus Medical Centre, Rotterdam, Netherlands

Organised by Andrej Srakar, RSS Emerging Applications Section

Methods & Theory

Scalable computations for high-dimensional hidden Markov models

Tregonwell Hall Seminar Suite 1

This session will concern itself with conducting statistical inference in partially-observed dynamical systems (also 'state space models', 'hidden Markov models', ...), with a focus on problems for which the latent dynamical system is **high-dimensional** in nature. Such problems arise naturally in the study of many-agent systems, spatiotemporal modelling, and beyond.

In the presence of high-dimensional latent states, computational considerations become of key importance, as otherwise-routine operations (likelihood computation, filtering, smoothing, etc.) can quickly become untenably expensive. As such, the feasibility of inference in these models becomes contingent on i) identification of tractable, simplifying model structures, and ii) development of efficient, scalable computational procedures.

Our speakers will thus present their works on this topic, showcasing their contributions on principled methodologies for tackling the challenges of working with contemporary hidden Markov models.

Approximate likelihoods for high dimensional partially observed stochastic interacting systems with applications to stochastic epidemic models.

Michael Whitehouse - Imperial College, London, UK

Distributed Inference and Object Tracking in Sensor Networks

Lily Li - University of Edinburgh, UK

Modern and practical Monte Carlo methods for scalable inference in state-space models

Adrien Corenflos - University of Warwick, UK

Organised by Sam Power for RSS Computational Statistics and Machine Learning Section

Day 2 Tuesday 8 September

15:40 – 17:00

Other Applications

Ahead of the Games: Predicting Glasgow 2026

Tregonwell Hall

To celebrate the Glasgow 2026 Commonwealth Games, the RSS Statistics in Sport Section ran an open competition to predict the Medals Table (before the Opening Ceremony) for Glasgow 2026. The entry with the highest correlation with the actual Medals Table, along with two entries chosen by the judging panel based on the methodology used, will present their work in this session. This will be followed by a panel discussion with the competition winners and Milt Mavrakakis from Amelco, the sponsors of the competition.

Organised by Jessica Hargreaves & Milt Mavrakakis for RSS Statistics in Sport Section

Part of the Sports Statistics Day sponsored by Amelco UK Ltd



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Other Applications

Uncertainty quantification of stochastic modelling in proton beam therapy

Meyrick Suite

Proton beam therapy offers highly targeted cancer treatment but its effectiveness depends on accurate modelling of physical, biological and clinical uncertainties. This session brings together researchers working on practical and statistical challenges in modelling these uncertainties. Speakers will present a range of mathematical models and techniques and how they can be used for range and dose-distribution prediction, uncertainty quantification, and informing efficient and transparent simulations. The overall aim of the session is to promote interdisciplinary dialogue and showcase the vital role of modern statistical methodology in next-generation radiotherapy.

Geometry, Energy and Sensitivity in Stochastic Proton Dynamics
Veronika Chronholm - University of Bath, UK

Efficient Proton Transport Modelling for Proton Beam Therapy and Biological Quantification
Tristan Pryer - University of Bath, UK

Fast SDE-based Monte Carlo dose calculation for proton therapy validated against Geant4
Christopher Dean & Maria Pérez-Lara - University of Warwick, UK

Organised by Emma Horton & Jere Koskela

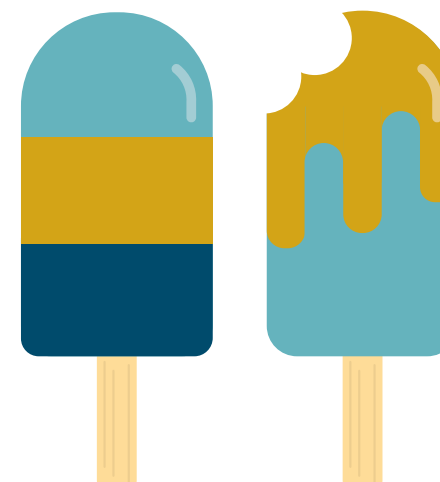
Official Statistics & Public Policy

Topics in International Development: Automation of statistical processes for data collection and calculation of policy relevant indicators

Westbourne Suite

Reproducible Analytical Pipelines (RAP) is the practice of automating the entire process of statistical production, from raw data to final report using open-source code and tools. It replaces manual processes especially spreadsheet work with a transparent, coded system. Whilst the concept originated in the UK, it has been pushed by Organisation for Economic Co-operation and Development (OECD) and the World Bank. At the same time, it is unclear how the national statistical offices worldwide, such as in Asia and Africa, have adapted automated statistical practices. The session aims to introduce RAP and explore how the use of it may be useful (or may not be) to the developing countries.

Organised by Osemwingie Osadolor & Gustavo Paez Salamanca for RSS Young Statisticians & International Development Sections



Day 2 Tuesday 8 September

15:40 – 17:00

Professional Development

Building sustainable research communities: Strategies for capacity, collaboration and impact

Purbeck Lounge

This workshop aims to equip statisticians with practical strategies to build inclusive, inter-disciplinary, evidence-driven research communities that advance collaboration, strengthen professional networks, and deliver data for the public good.

This interactive session provides practical strategies for developing and sustaining data research communities that are inclusive, collaborative, and focused on real-world impact. Through short expert presentations, participants will explore a range of existing community initiatives and learn how their work—and the work of programmes such as DARE and ADR UK—helps to foster development, collaboration, and measurable impact.

Following the presentations, attendees will take part in a hands-on breakout activity featuring a mapping exercise designed to help them apply insights to their own contexts, identify actionable steps for community building, and strengthen professional networks. Emphasis will be placed on professional development, equipping participants with skills to lead inclusive communities, build strategic partnerships, and enhance collaborative problem-solving.

Beyond the Dataset: Fostering Professional Growth through Collaborative Research Communities
Bogusia Wojciechowska - ADR UK

Building Collaborative Communities for Sensitive Data Research
Najmeh Modarres - DARE UK:

Connecting Statisticians through Data Linkage: Professional Growth and Community Insights
Mike Edwards - Swansea University and DARE Data Linkage community co-chair

Strategic Networking and Skill Development in Administrative Data Hubs
Pallavi Banerjee - University of Cambridge, chair Cambridge Administrative Data Hub

Building Expertise and Connections to Drive Social Policy with Administrative Data
Katie Hunter & Will Cook, co-chairs of the Administrative Data for Social Policy (ADSoP) community at Manchester Metropolitan University:

Organised by Bogusia Wojciechowska, ADR UK, & Najmeh Modarres, DARE UK

Professional Development

Collaboration at scale: How statisticians use Git & Github in practice

Bourne Lounge

Version control has become an essential skill and key component in ensuring research and data analyses are collaborative, reproducible and auditable -yet many still find tools like Git and GitHub hard to approach. This session will show how version control can transform the way we collaborate, from sharing and reviewing code to building trust in our results.

Through talks from practitioners in academia, government and industry, speakers will demonstrate how GitHub can be used by anyone in all vocations. A panel discussion will explore what makes these tools effective, overcoming barriers to adoption, and where they can really make a difference!

Whether you're a seasoned contributor or wanting to get started, you will leave the session with ideas, inspiration and confidence to commit to version control part of your everyday practice!

Introduction to Git/GitHub in 10 minutes
Rhian Davies - The Strategy Unit, UK

Code Review and Collaboration
Jack Kennedy - UKHSA

GitHub Practitioner from Industry
Janet Bastiman - Napier AI, Chair of RSS DS&AI Section

Collaborative Coding in Teaching/Research
Speaker TBC

Organised by Joseph Grealy, Guy Beavis, Jack Kennedy, for Software, Technology and Reproducibility in Statistics (STARS)

Social Statistics

Survey mode effects in practice

Branksome Suite

Surveys are increasingly adopting mixed-mode methodologies, whereby data are collected by some combination of face-to-face, telephone, web and video. Due to differences in how items are presented and the presence/absence of interviewers, responses can differ systematically between modes, a phenomenon referred to as a mode effect. Unaccounted for, mode effects can introduce bias in analyses of mixed-mode survey data.

Mode effects in mixed-mode survey data are typically confounded by mode selection – different types of individuals responding in each mode. Many methods to account for mode effects – e.g. statistical adjustment and imputation – rely on an assumption that selection into mode can be fully controlled for with available data. The plausibility of this assumption may, however, be questioned as selection factors may be unknown, unmeasured (especially in cross-sectional studies), measured poorly, or subject to mode effects themselves.

In this invited session we will present findings from recent research in the handling of mode effects, including a systematic review of the experimental literature on mode effects, analyses considering the likely impact of mode effects in realistic analytic scenarios, and methods by which applied researchers can explore the potential impact of mode effects in their own analyses.

Introduction to the session: modes, mode effects and directed acyclic graphs for mode effects
Richard Silverwood - University College London, UK

Day 2 Tuesday 8 September

Mode effects on survey item measurement: A systematic review of the experimental evidence

Georgia Tomova - University College London, UK

What does it take for mode effects and mode selection to alter study results? A simulation study

Georgia Tomova - University College London, UK

Tutorial on quantitative bias analysis for mode effects

Liam Wright - University College London, UK

Followed by Q&A

Organised by Richard Silverwood for RSS Social Statistics Section



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Day 3 Wednesday 9 September

09:00 – 10:30

Plenary

Keynote 4 - Discussion Meeting: Bayesian Statistics in Scientific Induction: A Decision Analysis Perspective

Solent Hall

Simon French - Professor (emeritus),
Alliance Manchester Business School

Based on over fifty years' experience of applying Bayesian methodology in statistical, risk and decision analyses, I reflect on its power in supporting sound scientific induction. I argue that Bayesian methods are more suited to guiding inferences than other methods. In the past, Bayesians justified their approach through its rigorous axiomatic base and its intuitive good sense in modelling rational inference. Nowadays, the easily comprehended interface offered by belief nets, the computational power of MCMC to conduct complex analyses, and the general fit of Bayesian methodology with machine learning are more likely to be offered as justification. Here I offer a further perspective, focusing on the support Bayesian analysis offers scientific induction. Using Shafer's interpretation of prescriptive analysis as 'argument by analogy', I argue that Bayesian analysis is better suited to nudging scientists towards rational inference in confirmatory studies and reducing the risk that they may be misled by subconscious biases. However, I also recognise that non-Bayesian approaches can be very useful in exploratory analyses. Moreover, I recognise that subjective probabilities cannot model all the uncertainties that must be addressed in sound scientific induction. The unmodelled ones, I suggest, need much more recognition and attention than apparent in current practice. Throughout, I recognise that the process of scientific induction is – or ideally would be – driven by a series of interactions between scientists and statisticians. Thus the paper presents my personal perspective on how a subjective statistician should engage with scientists to support their scientific induction.

Full information about the discussion meeting and how to contribute can be found here:

rss.org.uk/training-events/events/discussion-papers/

17:10 – 18:00

Plenary

Keynote 3: Ron Wasserstein - A world beyond $p < 0.05$

Solent Hall

Since 2007, Ron Wasserstein has served as Executive Director of the American Statistical Association. He is an active advocate for the statistics profession. Currently, he and his team have focused on supporting the US federal statistical system as well as urging the US government to support broad funding for basic and applied research.

His research interest over the past decade has focused on the concept of statistical significance. He and others have called for the community to move to "a world beyond $p < 0.05$." In his lecture, he will argue that this artificial boundary warps research incentives, publication practices, and ultimately scientific progress itself. In doing so, he promises to entertain rather than to depress you.

19:30 – 22:00

Networking

Young Statisticians Quiz Night

Tap and Tandoor

7a-11 Richmond Hill, Bournemouth BH2 6HE

All welcome

Day 3 Wednesday 9 September

10:40 – 11:20

Rapid-fire talks

The following talks are expected to be presented – the final listing with allocations to sessions and rooms will be available via the online programme and the conference app.

Comparison and Evaluation of Different Post-Hoc Test Statistics in Agric & Medical Science Using R.C.B.D in R-Package and SPSS for Comparison of Error Rate

Suleiman Bukar - Ahmadu Bello University Zaria, Kaduna, Nigeria

Prediction Model for Ten-Year Reinfection Risks of Neglected Tropical Diseases in Nigeria

Olaniyi Mathew Olayiwola - Federal University of Agriculture Abeokuta, Nigeria

Understanding the evolution of Kyles' lambda on digital blockchain assets

Lovely A Jamil - American University of Sharjah, UAE

Handling of data limitations in clinical prediction models developed using electronic health records: A focused scoping review

Rebecca Whittle - University of Birmingham, UK

Implementing limma in JASP: Accessible and Reproducible Differential Expression Analysis Without Compromising Statistical Rigor

Mina P. Peyton - National Institute of Allergy and Infectious Diseases, North Bethesda, USA

Regularized Bayesian Hierarchical Generalized Linear Model for Multilevel Data

Adeyemi Semiu Adeniran - National Bureau of Statistics, Abuja, Nigeria

Dynamic Risk Prediction via Landmarking Using a Semiparametric Mixed-Effects Least Squares Support Vector Machine

Taban Baghfalaki - The University of Manchester, UK

Antidepressant discontinuation, withdrawal symptoms, and relapse into depression: a causal mediation analysis approach

Peter Martin - University College London, UK

A Counterfactual Framework for Estimating Infectious Disease Prevalence under Repeated Testing with Symptomatic and Contact-Tracing Components

Jeongjin Lee - The Ohio State University, Columbus, USA

Nested Case-Control sampling strategies for time-to-event analysis of big cohort data

Ines Amine - London School of Hygiene and Tropical Medicine, UK

Predicting Antenatal Care Utilization in India: A Machine Learning and Count Regression Approach

Prashant Verma - University of Allahabad, Prayagraj, India

Mukti Khetan - ICMR-NIIRNCD, Jodhpur, India

Assessing the importance of model misspecification in the meta-analysis of stepped-wedge trials in the presence of time-varying treatment effects

Marc A Parsons - McGill University, & CIHR Pan-Canadian Network for HIV and STBBI Clinical Trials Research, Montréal, Canada

Selection and Collider Restriction Bias Due to Predictor Availability in Prognostic Models

Marc Delord - King's College London, UK

Two-Level Pairwise SVM Ensemble for Classification

Abeer Almalki - University of Leeds, UK

Assessing Awareness of Non-Communicable Diseases and Healthy Practices Among Schoolchildren in Rajasthan: A Machine Learning Modelling Approach

Mukti Khetan - ICMR-NIIRNCD, Jodhpur, India

Multivariate Spline Regression for Clinical Outcome Analysis:

Evidence from the UK National Bariatric Surgery Registry

Emilio L. Sáenz Guillén - Bayes Business School, City St George's, University of London, UK

From manual reporting to reproducible pipelines: improving Official Statistics production through reusable analytical tools.

Mariagrazia Zottoli - Department of Science, Innovation and Technology, London, UK

Exploratory Factor Analysis & Non – Response Modeling on the Florida Keys

Joy M D'Andrea - USF, Tampa, USA

The 'enemy' we name but cannot study: scientific culture and the clinical prediction crisis

Taya Collyer - National Centre for Healthy Ageing, Monash University, Melbourne, Australia

Orthogonal Violations: Why Balanced Intercept Non-Invariance Evades Δ CFI Detection

Scott R Colwell - University of Guelph, Canada

Posterior-Based Decision Stability in Urban Flood Risk Prioritisation

Mikel Martinez Mugica - Independent Researcher (Habnetic), Zurich, Switzerland

Scoping and evaluation of synthetic data to enhance access to data

Delyth James - Welsh Government, Cardiff, UK

Orion: experiments with AI-assisted evidence synthesis and in-browser Bayesian meta-analysis

Eric Novik - Generable, & New York University, New York, USA

Shape-constrained mixed-effects dose-response modelling for early non-clinical assays when parametric methods are unreliable

Ruth E Parsons - GSK, Stevenage, UK

Data Sharing Practices in Published Parallel Cluster Randomised Trials Conducted in low and middle-income countries: review and survey of Corresponding Authors

Jacqueline Y Thompson - University of Birmingham, UK

When do complex longitudinal models improve biomarker analysis in clinical trials?

Maria Nowicka - University of Oxford, UK

Generally-altered, -inflated, -truncated and -deflated regression for counts

Thomas William Yee - University of Auckland, New Zealand

Integrating Data Sharing into the Research Lifecycle

Timea Putnoki - UK Data Service, Colchester, UK

Does the Census Hard to Count Willingness Index have a transferable missing data signal?

Dominick F Sutton - University of Glasgow, UK

Day 3 Wednesday 9 September

Retrospective evaluation for multi-scale and multi-target epidemiological forecasts

Jack Kennedy - UK Health Security Agency, London, UK

How Much Prior Information is Enough? A Bayesian Simulation Study of Binary Exposure Misclassification

Codie J C Gerlach-Wood - University of Bristol, UK

50 years of the ONS Longitudinal Study – what's next?

Pamela Cobb - Office for National Statistics, Titchfield, UK

A deterministic model to reduce rater bias in assessing Government Major Portfolio Projects

Sujith Mudaliyar, Duncan Lean, Holly Dolan - Cabinet Office, London, UK

Traces of the departed: Quantifying over-coverage in Australia's Person Level Integrated Data Asset

Carrie Samuels - The Australian National University, & Australian Bureau of Statistics, Canberra, Australia

Using Administrative Data for Population Insights: Scotland's Integrated Demographic Dataset and the Future of Scotland's Census

Damien Allen - National Records of Scotland, Edinburgh, UK

When Proportional Odds Meets Proportional Hazards: A Unified Survival Model

Angela Noufaily - The Open University, Milton Keynes; & University of Warwick, Coventry, UK

Stable estimation of Tobit model parameters under heavy censoring and small sample case.

Shahad F Alharbi - University of Leeds, UK; & King Khalid University, Abha, Saudi Arabia

Joint modelling to investigate the association between diabetes duration, HbA1c trajectory, and the risk of pancreatic cancer

Agnieszka Lemanska - Imperial College London, UK

Exploring the potential of retrospectively harmonising school health survey data across Scotland and Wales: a DATAMIND project

Samantha Ofili - University of Glasgow, UK

Modelling Conflict, Emotions, and Agreement in Negotiations Using High-Resolution Behavioural Time-Series Data

Nicolás González Raposo - Universidad del Desarrollo, Santiago, Chile; & University of Vienna, Austria

Revisiting Marital Trajectories Using Sequence and Event History Analysis: a case-control study among People Living with HIV in Thailand

Kamonrut Koobubpha - Chiang Mai University, Thailand

Efficient case-control likelihood ratios for rare variant interpretation across phenotypes

Theodora Nearchou - The Cyprus Institute of Neurology & Genetics, Nicosia, Cyprus

Migration of nurses within the UK: evidence from a linked registrant-census dataset

Iain M Atherton - Edinburgh Napier University, & ADR Scotland, Edinburgh, UK

Caesarean section variation across Scottish Health Boards: what can open aggregate data tell us about neonatal outcomes?

Martin A Sharp - Edinburgh Napier University, UK

Leveraging external controls to quantify treatment response in single-arm phase II trials: Fad or possibility?

Bee-Choo Tai - National University of Singapore, Singapore

Quantum-B-Spline GAMLSS

Abu Hossain - Office for National Statistics, Newport, UK

Changepoint detection in shape spaces via Hidden Markov Models

Constance Sharp - King's College London, UK

Parameterising bias between observed and modelled climate trends to constrain an uncertain future.

Paul Bell - University of Exeter, UK

What does ethnic density represent? Decomposing a widely used contextual measure using harmonised UK small-area census data.

Joseph Lam - Great Ormond Street Institute of Child Health, University College London, UK

Multivariable Modelling and Time-to-Event Analysis of Incorrect Renal Dose Prescribing in Hospitalised Patients with Renal Impairment

Mohammed Baragilly - University of Birmingham, UK, & Capital University, Cairo, Egypt

A General Class of Hybrid Estimators in Two-Phase Sampling for The Population Mean Using Multi-Auxiliary Quantitative And Qualitative Variables

Emmanuel F Ologunleko - Olabisi Onabanjo University, Ago-Iwoye, Nigeria

How delivery modes shape engagement-performance relationships in university statistics courses

Takoua Jendoubi - UCL, London, UK

Skew-t Structural Equation Mixture Models for Non-normal Latent Heterogeneity: Simulation Evidence and a Metabolic Health Application

Maryam Yazdi - Diabetes Research Centre, University of Leicester, UK

The ClassifAI App: A tool for AI-driven, large-scale processing of free-text survey responses to support production of official statistics.

Riley O'Keeffe - Office for National Statistics, Newport, UK

"freechoice": a R package for the analysis of free choice profiling data using GPA

Zhou Fang - Biomathematics and Statistics Scotland, Edinburgh, UK

G-computation for joint effects: introducing the gcompurr R package with an application to social disadvantage, psychological distress, and inflammation

Martin Danka - UCL, London, UK

Testing True Long Memory in AFRIMA Models Using Classical, Wavelet and Bayesian Estimation Approach

Adedayo F Adedotun - Olabisi Onabanjo University, Ago Iwoye, Nigeria

Data-Driven Health Risk Stratification in COVID-19: Integrating CO-RADS with Comorbidity-Based Clustering

Ayse Ulgen - Nottingham Trent University, UK

Foundation Models, Predictive Power and Transparency in Tabular Learning

Cillian Williamson - University College Cork, Ireland

Bridging Deterministic and Probabilistic Deep Learning Imputation via Post-Hoc Uncertainty Quantification

Ali Septiandri - University College London, UK

Day 3 Wednesday 9 September

11:20 – 11:50

Refreshment Break

Windsor Hall

11:50 – 12:50

Prize Winners

Statistical storytelling: Significance prize winners

Bay View Suite 1

Enjoy presentations from the winner and runners up of the 2026 Statistical Excellence Award for Early-Career Writing.

Taya Collyer - senior research fellow, Monash University, Australia.

Saf Flatters - student, Curtin University, Australia.

Tobias O'Keefe - PhD candidate, University of Oxford, UK.

The Statistical Excellence Award for Early Career Writing invites early-career statisticians and data scientists to tell a data-related story that matters to them – one that helps society understand today's biggest issues and make better decisions.

Jointly organised by Significance and the Young Statisticians Section of the Royal Statistical Society, the competition forms part of the RSS Statistical Excellence Awards programme.

Professional Development

**Statisticians for Society: What Do the Data Tell Us?
Five Years of Statistical Evidence on Stop and Search
in England and Wales**

Purbeck Lounge

Statisticians for Society is a Royal Statistical Society volunteering initiative that connects members with charities and third sector organisations seeking statistical and data expertise.

This session will provide an overview of the initiative, highlighting the support volunteers deliver and the impact their work has had across the sector. It will also showcase a recent project undertaken by volunteer **Michel Mesquita** in collaboration with the charity UNJUST. Michel analysed five years of Home Office stop and search data published on GOV.UK (2020/21 to 2024/25), comprising more than 556,000 records after applying predefined inclusion criteria. The presentation will explore the statistical methodology used, discuss the interpretation and limitations of the findings, demonstrate an interactive public dashboard developed to communicate the results, and reflect on how collaboration between volunteer statisticians and charities can contribute to transparent, evidence-informed public policy through robust and reproducible analysis.

In addition, **Jiao Song**, a member of the Statisticians for Society Scoping Committee, will share her experiences of volunteering with the programme. She will discuss her role in the project scoping process, including working with charities during the initial stages to help them understand the type of statistical support they need.

Professional Development

**From Data to AI-Ready Predictions: A Timberlake Demo
Session on Machine Learning with Stata 19 and H2O**

Bourne Lounge

The presentation will combine a conceptual introduction with a live Stata demo, showing how to prepare data, train machine learning models, evaluate prediction performance, and interpret results. The aim is to make the topic accessible to both new users of machine learning and experienced Stata users interested in the new AI-related features in Stata 19.

Organised and presented by Francisca Carvalho for Timberlake Consultants

Data Science & AI

**Contributed: Data Science & AI for Data Preparation
and Quality**

Bay View Suite 2

Harnessing Statistical Pattern Recognition Techniques for Data Quality Detection

Anne R Tate - University of Sussex, Brighton, UK

Detecting and Explaining Multivariate Drift with Domain Classifiers and SHAP

Sebastian Khan - Starling, London, UK

Data preparation without the cloud: evaluating open-weight LLMs on longitudinal population studies

Mack Nixon - University College London, UK

Day 3 Wednesday 9 September

11:50 – 12:50

Environmental & Spatial Statistics

Contributed: Modelling water, weather, and flood risk

Purbeck Bar

Impact of climate change on pluvial flooding damages in Norway
Johannes Voll Kolstø - Norwegian Computing Center, Oslo, Norway

The Whittle likelihood for mixed models with application to groundwater level time series.

Jakub J. Pypkowski - Imperial College London, UK

Integrating AI-generated weather ensembles into flood risk estimation: Exploring new possibilities

Alison Poulston - JBA Risk Management, Skipton, UK

Medical Statistics

Contributed: Prognostic and Diagnostic Meta Analysis

Tregonwell Hall Seminar Suite 2

Systematic Reviews and Meta-Analysis of Prognosis Research and Prediction Models

Richard D Riley - University of Birmingham, UK

A joint meta-analysis framework for the accuracy of two diagnostic tests accounting for varying study designs

Vera Hudak - University of Bristol, UK

Meta-analysis of networks of diagnostic tests with binary and continuous results

Efthymia Derezea - Bristol Medical School, University of Bristol, UK

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Medical Statistics

Contributed: Survival Analysis

Tregonwell Hall Seminar Suite 1

Quantifying Kaplan-Meier Overestimation Under Competing Risks: A Nonparametric Diagnostic; Event Ordering and the Censoring Intensity Matter

Ferran Espuny-Pujol - University of Reading, UK

What happens if everyone has the same subsequent therapy?

Applying a new hypothetical estimand for overall survival

Kara-Louise Royle - Leeds Cancer Research UK Clinical Trials Unit, University of Leeds, UK

Extended joint nested Mixed-Effects (JoiNME) models for high-dimensional correlated biomarkers and time-to-event data using a shared latent process.

Trinh Huu Khanh Dong - Newcastle University, Newcastle upon Tyne, UK

Methods & Theory

Contributed: Circular data, factor interactions, and sequential testing

Meyrick Suite

NFBR: A General Probabilistic Framework for Formalising and Quantifying Nonlinear Factor Interactions

Cinzia Carrodano - Independent, Steinhausen, Switzerland

Evaluating Randomness Assumption: A Novel Graph Theoretic Approach for Linear and Circular Data

Shriya Gehlot - Queen's University Belfast-GIFT City Campus, Gandhinagar, India

Don't Stop 'til You Get Enough: Reliable Sequential Hypothesis Testing with Precision and Decisiveness as Goals

Eyal A Kazin - Zimmer Biomet, London, UK

Official Statistics & Public Policy

Contributed: Vital Statistics

Durley Suite

From Abridged to Complete Population Life Tables: A Heligman-Pollard Application in Small Populations

Brendon Bhagwandeen - The University of the West Indies, St. Augustine, Trinidad and Tobago

A Modified Brass-Weibull Approach for Estimating Infant Mortality in India Using Census Data

Prashant Verma - University of Allahabad, India

Mukti Khetan - Indian Council of Medical Research-NIIRNCD, Jodhpur, India

Analysis for Action: Co-creating a digital platform for evidence-based preparedness and response to health emergencies

Isabella A Hughes - Office for National Statistics, Nottingham, UK

Other Applications

Contributed: From Past Patterns to Future Strategies

Westbourne Suite

A new approach for comparing scores in the presence of missing data in longitudinal studies

Marie Wiberg - Umeå University, Sweden

Time series models for cultural heritage preservation: The case of the Brunelleschi's Dome

Silvia Bacci - Università di Firenze, Italy

Using Ensemble Learning with Vine Copulas, with applications to association football data.

India Richmond - University of York, UK

Day 3 Wednesday 9 September

11:50 – 12:50

Methods & Theory

Contributed: Scalable computation for complex statistical models

Branksome Suite

Scalable Estimation of Large Generalized Additive Models
Claudia Collarin - University of Edinburgh, UK

Efficient Bayesian inference for stochastic, non-linear population dynamics
Giorgos Minas - University of St Andrews, UK

A scalable MCMC algorithm for Bayesian model selection
Georgios Karagiannis - Durham University, UK

12:50 – 13:50

Lunch

Windsor Hall

13:50 – 15:10

Applications in Business, Industry & Finance

Is Gen AI the death knell of statistics as we know it for business and industry?

Bay View Suite 1

The provocative title poses a question many statisticians are asking as generative AI dominates boardroom discussions and strategic planning. Are we witnessing the obsolescence of classical statistical practice, or simply the latest chapter in its evolution?

This session examines the genuine capabilities and notable limitations of generative AI within business and industrial contexts. Whilst GenAI offers compelling opportunities for workflow enhancement and exploratory analysis, the reality is more nuanced than either evangelists or sceptics might suggest.

We'll present scenarios where attempts to substitute GenAI for established statistical methods will result in failures and surprising successes. Our speakers will demonstrate where rigorous statistical inference, experimental design, and predictive modelling remain not just relevant but essential. We'll explore the critical distinctions between pattern recognition in large language models and the causal understanding required for reliable business decisions. Equally, we'll showcase practical applications where GenAI genuinely augments statistical practice.

Rather than framing this as an adversarial relationship, we'll argue for a pragmatic integration, one where statisticians leverage GenAI as a productivity tool whilst maintaining the disciplined thinking that separates robust analysis from sophisticated autocomplete. The session will be followed by a panel discussion exploring the implications for statistical practice, education, and professional development.

Eli Y. Kling - Avanade, UK

Leigh Shlomovich - Powertica Commodities UK, London, UK

Milla Mazilu - Network Rail, Wales & Western Region, UK

Organised by Eli Kling for RSS Business & Industrial Section

Communicating & Teaching Statistics

Prizes for Doctoral Scholarship and Research in Statistics Education

Westbourne Suite

This session highlights the achievements of emerging scholars whose doctoral research is advancing the field of statistics education. Through presentations from the recipients of the new RSS Prize for Doctoral Scholarship and Research in Statistics Education, the session will showcase innovative and impactful work that contributes to improving how statistics is taught, learned, and understood across disciplines. Speakers will present research that explores diverse perspectives on statistics education – from pedagogical theory and curriculum design to applied teaching innovations and educational technology. The session will offer attendees an opportunity to learn from cutting-edge doctoral research, engage in discussion with the next generation of scholars, and reflect on future directions for the discipline.

This session aims to foster collaboration and inspire new research and practice in statistics education, aligning with the Section's goal of promoting excellence and innovation in teaching and learning.

Organised by Ioanna Papatsoouma for RSS Teaching Statistics Section



Day 3 Wednesday 9 September

13:50 – 15:10

Methods & Theory

Novel directions in causal machine learning

Tregonwell Hall Seminar Suite 1

Advances in machine learning have introduced powerful tools in causal inference and causal discovery, in particular for high-dimensional and complex datasets. Traditional, such as regression-based methods often rely on restrictive parametric assumptions and face challenges like multiple hypothesis testing. In contrast, causal machine learning approaches, such as causal forests, enable flexible, data-adaptive modelling of treatment effects across the entire covariate space while maintaining valid inference. Three presentations of the session will present how combination of predictive machine learning with the potential outcomes framework offers researchers a robust approach to uncovering how treatment effects vary across different subgroups, how machine learning enables to derive estimands which advance ATE, ATT and CATE, and propose the QR-learner, a model-agnostic learner that estimates average treatment effects within the trial population by leveraging external data from other trials or observational studies.

Beyond the Conditional Average Treatment Effect
Richard Post - Erasmus Medical Centre, The Netherlands

Robust model-agnostic estimation of individualized treatment effects in randomized trials leveraging external data
Rickard Karlsson - TU Delft, The Netherlands

Organised by Andrej Srakar, Jožef Stefan Institute and University of Ljubljana

rss.org.uk/conference2026
[@rssannualconf.bsky.social](https://twitter.com/rssannualconf)

Environmental & Spatial Statistics

Turning Data into Action: Statistics for Wildfire Management Branksome Suite

This session will showcase recent advancements in wildfire forecasting research and their translation into practical tools that aim to support proactive fire prediction and strategic planning. The three presentations will explore:

- Modelling approaches for wildfires forecast,
- Development of user-friendly tools to implement models for operational use, and
- The critical role of collaboration with authorities and end users to integrated research into decision-making.

A final discussion will emphasize the need for stronger collaboration between academia and end users to bridge the gap between research and operational management.

Ben Swallow - University of St Andrews, UK
Ioana Colfescu - University of St Andrews, UK
Carlos da Camara - Lisbon University, Portugal

Organised by Regina Bispo, University of St Andrews

Medical Statistics

Bayesian SITAR growth curve analysis Solent Hall

The SITAR (SuperImposition by Translation And Rotation) growth curve model, developed by Professor Tim Cole CBE, is highly effective for summarising human height growth during puberty, typically explaining up to 99% of the population variance. SITAR estimates a population mean growth curve and describes individual-specific growth patterns using a set of three random effects parameters (size, timing, intensity). These random effects can be analysed further in relation to earlier growth-altering exposures or later health outcomes, making the model highly relevant for translational medicine and life course epidemiology.

For example, SITAR has been used to quantify the timing and intensity of growth in puberty and relating these to environmental exposures and later outcomes, and to test the effects of growth-promoting interventions on pubertal growth patterns.

This session will present new extensions to the classical SITAR model, developed within a Bayesian framework to allow for greater flexibility in modelling. We will introduce the Bayesian SITAR model and a new R package, *bsitar*, for fitting these models, and present findings from an applied study of socioeconomic differences in pubertal growth. We then introduce a novel Bayesian SITAR joint model for relating pubertal growth parameters to later life outcomes, illustrated with a study of the association between pubertal weight growth and adult cardiometabolic risk.

A brief history of SITAR

Tim Cole CBE - UCL Great Ormond Street Institute of Child Health, UK

Bayesian SITAR models and *bsitar*

Satpal Sandhu - MRC Integrative Epidemiology Unit, University of Bristol, UK

Joint modelling of growth curve features and a later outcome: weight through puberty and early adulthood adiposity and blood pressure
Alejandra Hernandez - MRC Integrative Epidemiology Unit, University of Bristol, UK

Socioeconomic differences in pubertal growth

Ahmed Elhakeem - MRC Integrative Epidemiology Unit, University of Bristol, UK

Organised by Ahmed Elhakeem, University of Bristol, & Tim Cole CBE, UCL

Day 3 Wednesday 9 September

13:50 – 15:10

Methods & Theory

Subgroup selection in clinical trials and other applications

Purbeck Bar

The challenge of subgroup selection in a clinical trial, say, is to identify a subset of the population for which the efficacy of a treatment is above a predefined threshold. However, selection techniques are often misused in an attempt to save the trial, and deriving valid approaches to subgroup selection is an exciting line of research. A key aspect of this is to remove the need for pre-registration or pre-specification of subgroups of interest. The area draws upon a wide range of topics in modern statistics, including inference under shape constraints, large-scale testing, conformal prediction and post-selection inference.

This session will feature three talks introducing new algorithms, with associated statistical guarantees, for subgroup selection in different scenarios.

Confidence sets for a level set in linear regression
Fang Wan - Lancaster University, UK

Chiseling: Powerful and Valid Subgroup Selection via Interactive Machine Learning
Nathan Cheng - Harvard University, USA

Controlled subgroup selection in clinical trials with uniform guarantees
Manuel Müller - Statistical Laboratory, University of Cambridge, UK

Organised by Tim Cannings, University of Edinburgh

Methods & Theory

Challenges in the analysis of complex data by latent variable models

Bay View Suite 2

This session explores recent developments in statistical methods for analysing complex data by latent variable models. The contributions address challenges such as dynamic prediction in the presence of heterogeneous subpopulations, modelling longitudinal outcomes affected by selective dropout, performing variable selection with clustered data, and improving estimation in small areas with non-normal error distributions. The contributions illustrate the methods with case studies in health, education, and economics.

Variable selection via knockoffs for clustered data
Leonardo Grilli - University of Florence, Italy

Dynamic prediction in mixture cure models
Marta Cipriani - University College Dublin, Ireland

A longitudinal model for students' performance on exams with nonignorable dropout.
Michela Battauz - University of Udine, Italy

Mixed effects models with non-normal error distributions for small area estimation with skewed survey data
Chiara Bocci - University of Florence, Italy

Organised by Silvia Bacci & Carla Rampichini University of Florence (Italy)

Official Statistics & Public Policy

Maximising policy impact through engagement and partnership-building

Purbeck Lounge

Administrative data is a powerful tool for understanding society and driving evidence-based change. This interactive workshop, led by ADR UK and ONS, explores how researchers can enhance the visibility and impact of their work using government-held data.

Through real-world case studies and collaborative discussion, participants will learn how to build meaningful partnerships, engage effectively with policymakers, and cascade research insights to influence decision-making across sectors.

What to Expect:

Showcase of impactful research: Hear from winners of the 2025 REA Impact and Government-led Impact Awards, and ADR UK Fellows whose work has shaped UK social policy.

Breakout activity: Create your own "Engagement and Participation Tree" to map stakeholders, identify engagement strategies, and share best practices.

Interactive discussion: Explore lessons learned, common barriers, and practical approaches to sustainable collaboration.

Workshop Objectives:

Demonstrate how administrative data research contributes to policy change, service improvement, and social understanding.

Highlight the role of cross-sector collaboration and statistical expertise in translating data into actionable insights.

Provide practical guidance for engaging with policymakers and amplifying research impact.

Explore how public engagement and lived experience can enrich data-driven research.

Join us to connect, reflect, and co-create strategies for making research matter.

Bogusia Wojciechowska - ADR UK

Hope Kent - University of Exeter, UK

Dan Derbyshire - University of Exeter, UK

Organised by Bogusia Wojciechowska and Louise Corti

Day 3 Wednesday 9 September

13:50 – 15:10

Official Statistics & Public Policy

Census 2031 - design, innovation and testing

Tregonwell Hall

The 2031 Censuses across the UK will be digital-first, whole population censuses that are modern, inclusive, trusted by the public and deliver high-quality estimates to meet user needs. The Office for National Statistics (ONS) will work closely with the National Records of Scotland (NRS), the Northern Ireland Statistics and Research Agency (NISRA) and the Welsh Government to enable coordinated implementation and high quality comparable and coherent regional and UK-level estimates.

This session will cover plans to meet user needs, areas for innovation since the last census, developments in methodology and plans for testing ahead of 2031. The session will include a panel session with speakers representing all four nations, an interactive session with the audience and technical presentations on the 2031 design and methodology.

The panel session will involve the chair asking each member of the panel for their perspective on topics such as why censuses are important, how to ensure user needs are met, and what are some of the key operational and statistical challenges presented when running a census. The panel will also cover areas for change from the last census and plans for testing ahead of 2031.

The interactive session will involve asking attendees to work together in small groups to come up with ideas to design their own census with the aim of building an understanding of some of the challenges and to build a repository of potential ideas to be considered. Panel members will walk around the room during the session talking with the different groups, who will be encouraged to write their ideas on flip chart paper to be collected at the end of the session.

The technical sessions will include:

Coverage estimation methodology for the 2031 Census
Ceejay Hammond and Amy Large - ONS, UK

Developing methods to integrate Census and admin data at the person level: A veterans case study
Jo Harkrader - ONS, UK

Areas for innovation and developments in processing and methodology
Richard Elliot - NISRA, UK

Members of the panel are expected to include:

Richard Elliot - Director of Census, Northern Ireland Statistics & Research Agency

Esta Clark - Head of Census Statistical Design, National Records of Scotland

Stephanie Howarth - Chief Statistician, Welsh Government

Ann Blake - Head of Census Methodological Statistical Design, Office for National Statistics

Organised by Cath Bremner, Office for National Statistics

Other Applications

Papers from JRSS-C: Data Fusion

Meyrick Suite

In this session, three talks will present three recent papers in JRSS-C. The papers propose novel solutions to data fusion, that is, situations where the real-life application requires the use and combination of information from diverse data sources. The applications mirror the diversity of applications in JRSS-C publications.

Modelling time-varying relations in housing prices: a semiparametric panel approach
Bernhard van der Sluis - Erasmus University Rotterdam, The Netherlands

Urban mapping in Dar es Salaam using Angle-Based Joint and Individual Variation Explained
Rachel Carrington - University of Bath, UK

Joint spatiotemporal modelling of zooplankton and whale abundance in a dynamic marine environment
Bokgyeong Kang - Dongguk University, South Korea

Organised by Thomas Kneib and Thordis L. Thorarinsdottir

Methods & Theory

Perspectives on causation and the foundations of modelling: part II

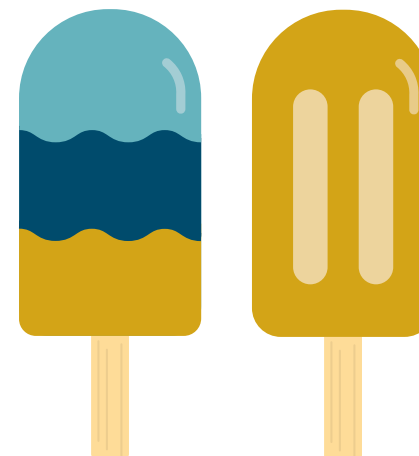
Tregonwell Hall Seminar Suite 2

The session will offer some unconventional insights and critical reflection on the topics of causation and the foundations of modelling. The session is a continuation of a session on the same theme from Tuesday, but attendance of "part I" is not a prerequisite.

Logical positivism versus regression models
Peter McCullagh - University of Chicago, USA

The talk aims to offer a perspective on parametric statistical models for the dependence of a response variable on explanatory factors. The crucial distinction between covariates and treatments is that the latter is associated with a Markov kernel and a group action on distributions.

Organised by Heather Battey, Imperial College London



Day 3 Wednesday 9 September

13:50 – 15:10

Professional Development

Scaling Large Data, Simplified

Bourne Lounge

The workshop provides a practical introduction to large-scale data management and analysis in R and Python. It is organised into two sections that build a complete workflow for working with large datasets on a local machine. Participants should have basic familiarity with R or Python programming environments.

In the first section, we will explore structured query language (SQL) as a unifying language for data management. This section will cover a concise, applied introduction to SQL and demonstrate the basic structure of relational database management systems (RDBMS), core SQL syntax, and applying SQL queries for everyday data management tasks.

In the second section, we will combine the power of SQL with the efficiency of DuckDB for reading and writing multiple data formats and conducting exploratory data analysis on large-scale data settings. Using realistic examples, we will tackle complex data wrangling tasks on large datasets, including selecting columns, filtering rows, searching, ordering, joining, aggregating and summarising data.

The session will be delivered through bite-sized, executable examples in R and Python. All installation instructions and tutorial materials will be provided online before the session; participants can follow along and run scripts on their own laptops.

This workshop will be of interest to statisticians, data scientists, data administrators and researchers who work with moderate to large datasets. Participants will gain practical skills to manage, explore and describe large data in R and Python, make better use of their local computing resources, and enhance productivity by adopting scalable, reproducible workflows powered by SQL and DuckDB.

Organised & presented by Mintu Nath, University of Aberdeen

Other Applications

Evaluating impact in higher education: challenges and methodology in real-world settings

Durley Suite

Using illustrative examples from different stages of educational lifecycle (undergraduate and graduate admissions, access and on-course student support), this session explores key evaluation concepts and components within the higher education setting.

The session will start with defining the concept of evaluation and how it can support decision-making in the formation, implementation and review of strategy and policy. Different types of evaluation (process, impact and economic) as well as their timing (prospective vs retrospective), methodological challenges and importance of collecting both quantitative and qualitative data will be discussed.

The session will be of interest to statisticians and evaluation analysts interested in assessing causality and evaluating the impact of higher education policies and programmes developed under the limitations of imperfect real-world data.

Speakers:

Setting the scene: evaluation methodology and challenges
Michelle Barclay - University of Oxford, UK

Methods for measuring progression in the evaluation of admissions processes
Craig Smith - University of Oxford, UK

Generating type III causal evidence on the impact of widening graduate access programmes
Piergiorgio Salvan - University of Oxford, UK

Students' academic skills development: evaluation of intervention effectiveness

Louise McRae - University of Oxford, UK

Conclusions and discussion points
Iryna Schlackow - University of Oxford, UK

Organised by Iryna Schlackow, Student Data Insights, University of Oxford

15:10 – 15:40

Refreshment break

Windsor Hall

15:40 – 16:40

Other

RSC and YSM 2025 prize winners

Westbourne Suite

Hear the prize-winning presentations from the Research Students' Conference (RSC) in Probability and Statistics 2025 and Young Statisticians' Meeting (YSM) 2025.

Multivariate state space modelling for cross-correlated censored heavy metal concentrations
Iain Bell - University of Glasgow, UK

TBC

Charlotte Norridge – University of Birmingham, UK

Organised by RSS Young Statisticians Section



Day 3 Wednesday 9 September

15:40 – 16:40

Data Science & AI

AI Task Force - update of activities in the past year

Bay View Suite 2

Summary of the AI Task Force activities since last year's conference looking at communications, evaluation, policy and practitioner work.

Organised & presented by Janet Bastiman & Donna Phillips for the RSS AI Task Force

Professional Development

What could you do with a week in Edinburgh and the right collaborators?

Bourne Lounge

What's the most memorable part of a workshop or conference? What makes an event stand out and have a lasting impact on you? The talk that sparked your curiosity to pursue a new idea? The conversation over lunch that turns into a collaboration? The walk with someone who sees your problem from a completely different angle? The pen you picked up?

The International Centre for Mathematical Sciences, Edinburgh brings people together — at all stages of their careers — to collaborate, explore and surprise themselves. The ICMS offers time and space away from the day-to-day tasks that can stifle your creativity where something different becomes possible: new thinking, new connections, new mathematics.

In this session you'll hear directly from researchers who've taken part in ICMS activities, as organisers, participants or both. They will share how these experiences shaped their work and careers, and about the value of the ICMS to the wider mathematical sciences community. You'll also learn about the funding available, and how you can make the most of what the ICMS has to offer.

Organised by Jane Walker and Lauren Hyndman for ICMS

Communicating & Teaching Statistics

Contributed: Supporting teaching

Bay View Suite 1

Ungraded Activity Participation and Exam Performance: Evidence from a Fixed Effects Model
Kelly-Ann N Dixon Hamil - University of the West Indies, Kingston, Jamaica

The Creation of a National Centre for Statistics and Data Science Education
Dr Ioanna Papatsouma - Imperial College London, UK

One Source, Many Forms: Reimagining Open Statistics Textbooks with PreTeXt
Lily Z Clements - IDEMS International, Reading, UK

Environmental & Spatial Statistics

Contributed: statistical methods for atmospheric and environmental monitoring

Durley Suite

A non-homogeneous Poisson model with covariates and spatial component applied to ozone data from Mexico City
Eliane R. Rodrigues - Universidad Nacional Autonoma de Mexico, Mexico City, Mexico

Bayesian spatial modelling with inlabru of changing summer fire detection intensity in the UK using satellite detections and UKCEH land-cover data.

Gordon A Hannah - University of St. Andrews, UK & NOVA University Lisboa, Lisbon, Portugal

The Spatial-Temporal Relationships Among Hourly CO₂, CH₄, S₂ surface Fluxes, and Temperatures: Evidence from Svalbard, Alaska, Hawaii, Switzerland, and Algeria
Kevin F. Forbes - Energy and Environmental Data Science, Malahide, Ireland

Medical Statistics

Contributed: Meta Analysis

Tregonwell Hall Seminar Suite 2

A Bias Corrected Conditional Dirichlet Process for Meta-Regression
Pablo E. Verde - University Hospital, Heinrich Heine University, Düsseldorf, Germany

Why AIC fails in dose-response meta-analysis: incoherent likelihoods and insufficient data
Nicola Orsini - Karolinska Institutet, Stockholm, Sweden

Transportability of missing data models across study sites for research synthesis
Robert Thiesmeier - Karolinska Institutet, Stockholm, Sweden

Medical Statistics

Contributed: Patient Centric Methodology

Meyrick Suite

Virtual Wards in and around Bristol: a retrospective analysis of patient outcomes and NHS costs
Luke Shaw - NHS - BNSSG ICB, Bristol, & University of Bristol, Bristol, UK

Health Profiling Using Latent Class and K-modes Analyses of COVID-19 Comorbidities by CO-RADS Classification
Ayşe Ülgen - Nottingham Trent University, UK; UGenome, Tucson, USA; & Girne American University, Karmi, Cyprus

CUSUM Charts for Disease Surveillance in International Travelers: Addressing Estimation Uncertainty and Leveraging Reporting Delays for Early Outbreak Detection
Stan Heidema - Eindhoven University of Technology, Eindhoven, Netherlands

Day 3 Wednesday 9 September

15:40 – 16:40

Methods & Theory

Contributed: Selected topics in statistical methodology

Tregonwell Hall Seminar Suite 1

Decomposing Group Differentials

Simon Rudkin - University of Manchester, UK

The Number Needed to Treat: Definition, Estimation, Pitfalls, and Extensions

Valentin Vancak - Holon Institute of Technology, Holon, Israel

Methods & Theory

Contributed: Adjusting for bias, measurement error and attrition

Branksome Suite

Bias Corrections for GLMs with Misclassified Covariates

Michał Warmuz - AGH University of Krakow, Poland

A spatial measurement error Fay-Herriot model with applications to measuring regional acceptance of the LGBTQ+ community

Robin Markwitz - Utrecht University, Netherlands

Accounting for Attrition in Respondent-Driven Sampling:

A Prospective Cohort Study Case Study

Vanessa McNealis - University of Glasgow, UK

Official Statistics & Public Policy

Contributed: Stats in Motion: Freight, Rural Life & Graduates

Purbeck Bar

Improving our understanding about deprivation in rural areas

Nia Jones - Welsh Government, Cardiff, UK

Timely predictions of the present: enhancing the relevance, accuracy, and timeliness of road freight transport statistics

Jonas Klingwort - Statistics Netherlands (CBS), Heerlen, Netherlands

What impact might lower response rates have had on the latest Graduate Outcomes statistics?

Tej Nathwani - Higher Education Statistics Agency, Cheltenham, UK

16:40 – 17:00

Plenary

Royal Statistical Society Awards Ceremony

Solent Hall

Each year the Society celebrates those who have made outstanding contributions to the development of statistics and data science,

During the ceremony the Society President John Aston will welcome this year's recipients to receive their awards.

Information about the 2026 winners can be found here:

rss.org.uk/news-publication/news-publications/2026/general-news/royal-statistical-society-announces-2026-honours/

17:00 – 17:50

Plenary

Keynote 5 - Barnett Lecture: Structured Bayesian models in climate and ecology

Solent Hall

Finn Lindgren - Lund University, Sweden

Complex data and modelling may involve different observation mechanisms and resolutions, all tied to a joint collection of latent variables and processes. When analysing climate and weather data, one has to take into account the variability on daily, seasonal, and long-term scales, as well as a diverse range of measurement systems. When analysing species distribution and abundance, the observation mechanisms and covariate availability can vary, and data is typically sparse. To make the best use of available observations and extract information about the hidden, or latent, information, Bayesian structured models provide a coherent framework that can force assumptions to be made explicitly. In combination with computationally efficient representations and methods, such as the inlabru/INLA R packages, a wide range of models can be handled, including extensions of GAMs, and combinations of point referenced, aggregated data, and point pattern observations.

Day 3 Wednesday 9 September

17:50 – 19:30

Networking

Awards & Poster reception

Windsor Hall

Celebrate the success of the award winners and take the opportunity to view this year's poster presentations and chat to the presenters.

Thanks to The Smith Institute for sponsoring the reception.

Smith Institute

At the time of going to print the following posters to be presented – please refer to the online programme and the conference app for the latest list of confirmed posters.

Scoping and evaluation of synthetic data to enhance access to data
Delyth James - Welsh Government, Cardiff, UK

A scoping review of studies updating a clinical prediction model
Amardeep Legha - University of Birmingham, UK

Advancing Offline Signature Verification through Machine Learning and GLCM Features

Prashant Verma - University of Allahabad, Prayagraj, India
Mukti Khetan - ICMR-NIIRNCD, Jodhpur, India

Two-Level Pairwise SVM Ensemble for Classification
Abeer Almalki - University of Leeds, UK

Assessing Awareness of Non-Communicable Diseases and Healthy Practices Among Schoolchildren in Rajasthan: A Machine Learning Modelling Approach
Mukti Khetan - ICMR-NIIRNCD, Jodhpur, India

A Dynamic Panel Data Analysis of Determinants of Economic growth in Sub-Saharan Africa Countries
Johnson Taiwo Olajide - The Polytechnic, Ibadan, Nigeria

Multivariate Spline Regression for Clinical Outcome Analysis: Evidence from the UK National Bariatric Surgery Registry
Emilio L. Sáenz Guillén - Bayes Business School, City St George's, University of London, UK

Exploratory Factor Analysis & Non – Response Modeling on the Florida Keys

Joy M D'Andrea - USF, Tampa, USA

Orion: experiments with AI-assisted evidence synthesis and in-browser Bayesian meta-analysis
Eric Novik - Generable, & New York University, New York, USA

Shape-constrained mixed-effects dose-response modelling for early non-clinical assays when parametric methods are unreliable
Ruth E Parsons - GSK, Stevenage, UK

Measuring the Relationship Between Beauty Perception and Skin Bleaching Practices Among Female at Usmanu Danfodiyo University Sokoto, Nigeria
Joy Ebube - Federal University of Agriculture, Abeokuta, Nigeria

Data Sharing Practices in Published Parallel Cluster Randomised Trials Conducted in low and middle-income countries: review and survey of Corresponding Authors
Jacqueline Y Thompson - University of Birmingham, UK

How Much Prior Information is Enough? A Bayesian Simulation Study of Binary Exposure Misclassification
Codie J C Gerlach-Wood - University of Bristol, UK

50 years of the ONS Longitudinal Study – what's next?
Pamela Cobb - Office for National Statistics, Titchfield, UK

A deterministic model to reduce rater bias in assessing Government Major Portfolio Projects
Sujith Mudaliyar, Duncan Lean, Holly Dolan - Cabinet Office, London, UK

How do we clean the Augean Stables? ...Statistical gaffes affecting public policy.
Paul R Marchant - Leeds Beckett University, UK

Efficient case–control likelihood ratios for rare variant interpretation across phenotypes
Theodora Nearchou - The Cyprus Institute of Neurology & Genetics, Nicosia, Cyprus

Caesarean section variation across Scottish Health Boards: what can open aggregate data tell us about neonatal outcomes?

Martin A Sharp - Edinburgh Napier University, UK

Changepoint detection in shape spaces via Hidden Markov Models
Constance Sharp - King's College London, UK

Parameterising bias between observed and modelled climate trends to constrain an uncertain future.
Paul Bell - University of Exeter, UK

A General Class of Hybrid Estimators in Two-Phase Sampling for The Population Mean Using Multi-Auxiliary Quantitative and Qualitative Variables
Emmanuel F Ologunleko - Olabisi Onabanjo University, Ago-Iwoye, Nigeria

How delivery modes shape engagement-performance relationships in university statistics courses
Takoua Jendoubi - UCL, London, UK

Skew-t Structural Equation Mixture Models for Non-normal Latent Heterogeneity: Simulation Evidence and a Metabolic Health Application
Maryam Yazdi - Diabetes Research Centre, University of Leicester, UK

The ClassifAI App: A tool for AI-driven, large-scale processing of free-text survey responses to support production of official statistics.
Riley O'Keeffe - Office for National Statistics, Newport, UK

"freechoice": a R package for the analysis of free choice profiling data using GPA

Zhou Fang - Biomathematics and Statistics Scotland, Edinburgh, UK

G-computation for joint effects: introducing the gcompurr R package with an application to social disadvantage, psychological distress, and inflammation
Martin Danka - UCL, London, UK

Testing True Long Memory in AFRIMA Models Using Classical, Wavelet and Bayesian Estimation Approach
Adedayo F Adedotun - Olabisi Onabanjo University, Ago Iwoye, Nigeria

Day 3 Wednesday 9 September

17:50 – 19:30

Foundation Models, Predictive Power and Transparency in Tabular Learning

Cillian Williamson - University College Cork, Ireland

What are the Dangers of Home Medical abortion (HMA) “both pills by post” (BPBP) policy in the UK after Covid? (including the case of Carla Foster)

Margaret A Eames - The Acorns Public Health Research Ltd, Hatfield, UK

Is there an uneven payoff for innovation? Evidence on the gender pay gap in innovation-intensive firms

Jess Ridsdale-Smith - Department of Science, Innovation & Technology, Edinburgh, UK

The Contraceptive Attitude-Behaviour Gap: Disaggregating Family Planning Non-Use Among Partnered Refugee Women in Ethiopia

Dagim Fisseha Habteyesus - University of Southampton, UK

Preparing researchers for statistical consultation using an AI-guided intake system

Alaa M Althubaiti - King Saud bin Abdulaziz University for Health Sciences, & King Abdullah International Medical Research Centre, Jeddah, Saudi Arabia

Causal analysis of traditional and environmental risk factors for long-term development of type 2 diabetes using a conditional survival Bayesian network

Man-suk Oh - Ewha Womans Univ, Seoul, Korea, Republic of

What Day 10 Tells You: Predicting Individual Pain Recovery Trajectories After Total Knee Arthroplasty in 13,869 Patients

Eyal A Kazin - Zimmer Biomet, London, UK

Interpretable Uncertainty-Aware Electricity Price Forecasting via Extended Fuzzy Gradient-Based Assessment

Cansu Ergenç Özdaş - Ankara Yıldırım Beyazıt University, Ankara, Turkey

Happiness efficiency among older adults: A Bayesian stochastic frontier analysis of life satisfaction in China

Puguang Nie - Beijing Normal-Hong Kong Baptist University, Zhuhai, China

Predicting House Prices in Greater Manchester and Assessing District-Level Prediction Difficulty Using Machine Learning:

A Complete Data Science Pipeline

Adeel Abbas - UKRI, Warrington, UK

Stable convergence in law in approximation of stochastic integrals with respect to diffusions

Snježana Lubura Strunjak - University of Zagreb, Croatia

From Linear to Regime-Dependent: Evaluating Time Series Models for Canadian Mortgage Credit Risk

Angela-Frances O Ibhade - Brock University, St. Catharines, Canada

Representative Location-Based Data Fusion of Australian Gauge and Satellite Precipitation Data Using Regression Calibration and Spatial Autoregression

Xueming Li - University of Melbourne, Melbourne, Australia

ABSSE: Adaptive Best Subset Selection Ensemble for Robust Biomarker Discovery

Hamed Haseli Mashhadi - IMU Biosciences, London, UK

Semiparametric Transfer Learning for the Data-Driven Newsvendor Problem

Alan T.K. Wan - City University of Hong Kong, Hong Kong

Uncertainty-Aware Calibration of Energy Models via Bayesian Emulation and History Matching

Dario Domingo - University College Dublin, Ireland

Factors Associated with Organizational Performance Improvement from AI Adoption: A Multinomial Logistic Regression Analysis.

Shuhrah Alghamdi - Princess Nourah bint Abdulrahman University, Riyadh, Saudi Arabia

Predicting Current and Future Habitat Suitability of the Arabian Sand Gazelle Using Ensemble Species Distribution Models and Spatial Hotspot Analysis

Randa Alharbi - University of Tabuk, Saudi Arabia

Social Inequalities Across the Life Course of Malnutrition in Sri Lanka: From Low Birthweight to the Household Double Burden

Gaya Abeywickrama - University of Winchester, UK

Exploring shared frailty models for cluster-specific risk estimation: A study on diabetes patients with a history of acute coronary syndrome

Kazeem A Adeleke - University of The West of England, Bristol, UK

Weight management prescribing in England: findings following the rollout to primary care

Colm D Andrews & Amy Gimma - University of Oxford, UK

Combinations of lifestyle behaviours and diabetes incidence: A Bayesian MAIHDA survival analysis of 259,448 UK Biobank participants

Anuman Swain - Loughborough University, UK

Where do international migrants live in Great Britain? Improving methods for local level international migration estimates

Hannah McConnell - Office for National Statistics, UK

What Early Treatment Reveals About Future Risk: Prognostic Modelling of Second Progression in Non-Transplant Eligible Multiple Myeloma

Chanelle L Evans - Leeds Institute of Clinical Trials Research, UK

Comparison of clinically coded long COVID and self-reported long COVID cases: Analysis using data from 16 longitudinal cohorts

Michael Gulley - University of Plymouth, UK

Day 3 Wednesday 9 September

Normalizing Statistical Workflows: AI Skills for Autonomously Routing Metrics to Appropriate Statistical Tests

Kevin Quach - Google, New York, USA

Third-Order Orthogonal Composite Design for Modelling Antiviral Drug Efficacy

John Ajali Obasi - University of Nigeria, Nsukka, Nigeria

Quantifying the Burden and Determinants of Anxiety and Depression Among Minoritised Ethnic Young People in Northern England: A Cross-Sectional Study.

Grace Igiomoh-Livingwater - University of Hertfordshire, Hatfield, UK

Decision-Making Under Uncertainty in NHS Estates Investment

Joseph P Grealy - Department of Health and Social Care, London, UK

Station-based drought analysis of UK by exploiting the vine copulas.

Ozan Evkaya - The University of Edinburgh, UK

A Sensitivity-Enhanced Surrogate Model for Fast Flood Inundation Prediction and Uncertainty Estimation

Amy Wilson - University of Edinburgh, UK

Modelling the Spread of Carbapenem-resistant *Acinetobacter baumannii* in an Intensive Care Unit

Feergus Ball - University of Birmingham, UK

Detecting and Identifying Radiological Sources using Poisson Models and Sparse Regression

Rafael Hunt-Stokes - AWE, Aldermaston, UK

Multi-State Modelling of Atrial Fibrillation Care Pathways Across Federated UK Trusted Research Environments: The CONNECT-AF Study

Fatemeh Torabi - University of Cambridge, MRC Biostatistics Unit, UK

Two-Sample Permutation Testing Using the Earth Mover's Distance, with an Application to Survey Data

Lewis Ellaway - University of Plymouth, UK

[@rssannualconf.bsky.social](https://rss.org.uk/conference2026)

Modelling Multiplayer FPS Player Performance Using Hidden Markov Models

Brian Terry - MRC Biostatistics Unit, University of Cambridge, & University of Warwick, Coventry, UK

Confidence Map for Binary Classification using Random Forests

Sofya Titarenko - University of Leeds, UK

Quantifying the Impact of BazBall on Domestic First Class Cricket

Knowles Knowles - Astellas Pharma Europe, Addlestone, UK

Fine-Scale Geostatistical Mapping of Anaemia in Two Sentinel Communities Within a Urogenital Schistosomiasis-Endemic Area of Malawi.

Farah Khalid - Lancaster University, UK

Supporting social science data producers in a changing research data landscape

Cristina Magder - University of Essex, UK Data Archive, Colchester, UK

From Design to Estimation: Accounting for International Passenger Survey Design Changes

Katie Davies - ONS, Newport, UK

A Statistical Framework for Modelling Cardiovascular Multimorbidity Progression After a First CVD Event in UK Biobank

Malak Aldosari - Imperial College London, UK

Multi-state modelling of the relationship between disability and mortality for post-stroke patients.

Rebecca Phillips - Lancaster University, UK

Completing missing data (UPRNs) using address linkage.

Laurynas J Vasys - Department for Science, Innovation and Technology, London, UK

When a Few Rare Rows Hijack the Fit: Label-Blind Screening for Structurally Sparse Feature Spaces

Ronit Bhattacharyya - GSK, London, UK

Statistical calibration of action potential models for improved prediction of drug-induced cardiac arrhythmias

Luca Del Core - University of Strathclyde, Glasgow, UK

Statistical Software in Experimental Psychology: A 2025 Bibliometric Benchmark

Hsin-Yuan Chen - Oxford Brookes University, UK

Forecastability of Indonesian Food Commodity Prices: Time-Series Characteristics and Model Performance

Firila Najma Wahidah - The University of British Columbia, Vancouver, Canada

Edge-Adaptive Bayesian Spatio-Temporal Varying Coefficient Modelling with Horseshoe-Type Shrinkage

Wonbin Jung - Kyungpook National University, Daegu, Korea, Republic of

Individualized Treatment Rules for Beta-Blocker Discontinuation After Myocardial Infarction: An X-Learner and Plasmode Simulation Study

Hyeonji Shin - Kyungpook National University, Daegu, Korea, Republic of

Comparison of Treatment Effect Estimation Methods for Federated Target Trial Emulation

Dong-geun Lee - Kyungpook National University, Daegu, Korea, Republic of

A Housing Condition Index for Assessing Financial Conditions in Korea's Apartment Sales Market

Dahyun Yang - Kyungpook National University, Daegu, Korea, Republic of

Mondrian Conformal Prediction for Uncertainty Quantification in Landslide Detection with Incomplete Reference Data

Seoyeon Kim - Kyungpook National University, Daegu, Korea, Republic of

Adaptive Sequential Surveillance for Infectious Diseases Under Limited Resources

Minghua Xiao - MRC Biostatistics Unit, Cambridge, UK

Quantile Regression Random Forests for improving ensemble weather forecast post-processing at unobserved sites

Ben R Hooper - UK Met Office, Exeter, UK

Day 3 Wednesday 9 September

Simulation-Based Power Analysis for Complex RCTs: A Rejection Sampling Approach

Franz Wortha - Loughborough University, UK

Using machine learning to forecast district-level poliovirus outbreak risk: calibration, spatial validation, and operational deployment

James Mba Azam - London School of Hygiene and Tropical Medicine, UK

Estimating the socio-demographic impact on Healthy Working Life Expectancy for people with musculoskeletal conditions in the United Kingdom

Oluwasikemi Onamusi - Keele University, Staffordshire, UK

Examining intersectional inequalities in stroke mortality within England using linked NHS administrative data

Timea M Putnoki - University of Essex, UK

Deep learning in PET/CT imaging workflows for head and neck squamous cell carcinoma: A systematic review and meta-analysis

Huda Mshari Alsaairi & Mintu Nath - University of Aberdeen, UK

Model selection for GNAR-ex models with an application to GDP nowcasting

Duygu Sap - University of Warwick, Coventry, UK

Distinct Environmental Profiles Reveal Heterogeneous Mortality Risk in COVID-19 ICU Patients: A Latent Class Analysis

Wei Wang - University of Birmingham, UK

Connectivity Diagnostics for AI-Assisted Statistical Workflows

Tim Drye - DataTalk, UK

A Modelling Framework for Judge Heterogeneity in the Bradley-Terry Model with an Application to Violence Against Women and Girls

Charlotte F E Norridge - University of Birmingham, UK

Beyond Repeatability: Reproducibility as Safe Methodological Change in Official Statistics

Gbenga I Ogunwale - Office for National Statistics, London, UK

Using routine data in health research: opportunities and challenges

Yinghui Wei - University of Exeter, UK

The use of estimands when analysing real-world data

Andrew Elders - Phastar, Glasgow, UK

Nonlinear Determinants of Environmental Sustainability in Italy: Evidence from a Quantile-Based Framework.

Agnese Rapposelli - University "G. D'Annunzio" of Chieti-Pescara, Pescara, Italy

Trivariate random-effects meta-analysis to estimate clinical net benefit of the HEART-score

Dominik Roth - Medical University of Vienna, Austria

Newtonian mechanics meet neural survival analysis

Marc Vaisband - Bonn Center for Mathematical Life Sciences, University of Bonn, Germany

From Maths Class to Statistics Lecture: How Educational Experiences Shape Psychology Students' Attitudes Towards Statistics

Tessa Flack - University of Leeds, UK

Infinite-dimensional information geometry for semiparametric statistics

Masayuki Henmi - The Institute of Statistical Mathematics, Tokyo, Japan

Refinement and the Universal Refinement Principle: Theory, Structure Emergence, and Cross-Domain Performance

Lance C Carr - ORION, Nottingham, UK

Machine-learning using Orange

Atefeh Talebi - University of Glasgow, UK

Dynamic Risk Prediction via Landmarking Using a Semiparametric Mixed-Effects Least Squares Support Vector Machine

Taban Baghfalaki - The University of Manchester, UK

Supervised Machine Learning and Bayesian Regression Kriging with Application to COVID-19 Incidences in Sub-Saharan Africa

Godfrey Lyece Safari - Jomo Kenyatta University of Agriculture and Technology (JKUAT), Nairobi, Kenya

Fitting an Archimedean spirals

Mai F Alfahad - Kuwait University, Kuwait

Implementing limma in JASP: Accessible and Reproducible Differential Expression Analysis Without Compromising Statistical Rigor

Mina P. Peyton - National Institute of Allergy and Infectious Diseases, North Bethesda, USA

Visualising Model-Based Migration Origin-Destination Estimates Using Geographic Plots

Lydia Cunningham - Office For National Statistics, Darlington, UK

Auditable AI-Assisted Outcome Switching Detection in Breast Cancer Trials: A Human-in-the-Loop Bayesian Evidence Synthesis Pipeline

Francis Osei - Bayezian Limited, London, UK

How early statistical quality oversight can reduce avoidable delays and help reliable evidence reach patients sooner

Andrew Elders - Phastar, Glasgow, UK

Thanks to the UK Data Service for sponsoring the prize for the winner of the poster competition.



And to CRC Press/ Taylor & Francis for providing prizes for 2nd and 3rd place winners.



Day 4 Thursday 10 September

09:00 – 10:00

Professional Development

Beyond the basics of literate programming

Bourne Lounge

Quarto is a powerful and popular tool to combine code and content in dynamic and fully reproducible documents. For R users, Quarto is an extension and modernisation of RMarkdown. For Python users, Quarto presents a new paradigm for teaching and reporting, with potential far beyond interactive notebooks.

This session showcases the practical ways that educators and trainers are using Quarto to create engaging, interactive, and transparent learning resources.

Speakers will demonstrate how to embed executable code, timers, and surveys within slides; how to personalise assessments using parameterised reporting and how to build your own reproducible workflow for personalised teaching and reporting.

The session will conclude with a panel discussion to address your questions about best practices in reproducible teaching and the future of literate programming both in and out of education.

Nicola Rennie - Office for National Statistics, UK

Zak Varty - Imperial College London, UK

Charlotte Hadley – GPCDS, UK

Organised by Zak Varty for the Software, Technology and Reproducibility in Statistics (STARS) group and RSS Teaching Statistics Section

Professional Development

Plotting your path: Women in statistics and data science share their stories

Tregonwell Hall

This session promotes practical advice from women in statistics and data science, sharing diverse experiences and strategies for building fulfilling careers. We discuss issues such as how to achieve a sustainable work-life balance, how to identify opportunities available when returning from a career break, and how to explore flexible working arrangements. We will explore topics relevant to women at different life and career stages, and with different personal circumstances. These will include navigating expectations in the workplace, managing career progression and wellbeing, establishing boundaries, and finding purpose both within and outside of work. By highlighting a broad range of perspectives, the session aims to provide practical insights that reflect the richness of women's experiences in statistics and data science.

Gordana Radojević

Erin Craig

Annette Southgate

Organised by Joy Leahy, Altea Lorenzo-Arribas & Mia Holley for the RSS Celebrating Diversity Special Interest Group and Young Statisticians Section

Data Science & AI

Contributed: Novel Developments in Transformers, LLMs and Diffusion Models

Bay View Suite 2

Explainability's Paradox: How Detailed AI Explanations May Undermine Consumer Error Detection and Contestability
Daniel J Bogiatzis-Gibbons - FCA, & Birkbeck, London, UK

LLM-driven large-scale survey processing & classification
Luke F Roantree - Office for National Statistics, Newport, UK

A Generative Oversampling Framework Using Normalizing Flows for Imbalanced Data
Amira Khamis Al Salhi - Sultan Qaboos University, Muscat, Oman

Environmental & Spatial Statistics

Contributed: quantifying environmental exposures and health outcomes

Purbeck Bar

The Causal Effect of Air Pollution Exposure on the London Underground on Long-Term Mortality and Cancer Outcomes
Calum Kennedy - UCL, UK

Adolescent mental health in an urban environment: a Bayesian approach with exposure uncertainty quantification
Abi I Riley - Imperial College London, UK

Expert knowledge elicitation in practice - evaluating the human health risk in Europe from Aflatoxins in maize food products
Kevin Wilson - Newcastle University, UK

Day 4 Thursday 10 September

09:00 – 10:00

Medical Statistics

Contributed: Sample Size for Prediction Modelling

Tregonwell Hall Seminar Suite 1

Clinical prediction model research: a unified sample size framework for model development, validation and updating
Richard D Riley - University of Birmingham, UK

A Flexible, Simulation-Based Approach to Sample Size Estimation for Prediction Modelling and Machine Learning: The pmsims R Package
Oyebayo Ridwan Olaniran - King's College London, UK

Sample size requirements for updating clinical prediction models with a binary outcome: an evaluation of existing criteria
Rebecca Whittle - University of Birmingham, UK

Medical Statistics

Contributed: Real World Data

Branksome Suite

Mitigating Measurement-Error Bias in Real World Time to Event Analyses with Approximate Bayesian Computation.
Steven Soutar - Arcturis, Oxford, UK

Estimating hidden population sizes using multiple systems estimation with ordered data
Lanxin Li - University of Edinburgh, UK

Developing frailty indices from patient reported data: Methodological considerations and a registry based case study
Marie Eriksson - Umeå University, Sweden

Methods & Theory

Contributed: Clustering models

Tregonwell Hall Seminar Suite 2

A novel approach to clustering shape data using iteratively weighted vectors with k-means
Jason Turk - Bowling Green State University, USA

Scalable Unsupervised Clustering of Multiple Time-to-Event Trajectories in Electronic Health Record Data
Marc Delord - King's College London, UK

Bayesian mixture modelling and complex dependence structures.
Michail Papathomas - University of St Andrews, UK

Official Statistics & Public Policy

Contributed: Next Gen Stats: AI, KPIs and Survey Questions

Bay View Suite 1

Why Ethnography? Studying AI Adoption in Official Statistics as a Problem of Scientific Practice
Adrien Allorant - University of Southampton, UK

Modernising the Scottish Surveys Core Questions (SSCQ): A User First Approach
Emma Schweidler - Scottish Government, Glasgow, UK

Lies, Damned Lies, and KPIs
Ken Roy - University of Southampton, UK

Applications in Business, Industry & Finance

Contributed: Long-term Prediction and Forecasting

Durley Suite

High-Resolution Solar Generation Forecasting in Israel using Hybrid Deep Learning Models
Moshe Kelner - Noga -Israel Independent System Operator, Haifa, Israel

Simultaneous targets of mean square error and directional accuracy: choosing optimal weights in forecasting
Robert M Kunst - Institute for Advanced Studies, & University of Vienna, Austria

Using epidemiological research to estimate impaired life expectancy: what method is best?
Jane Hutton - University of Warwick, Coventry, UK

Social Statistics

Contributed: Measurement and Data Quality

Meyrick Suite

Can national well being be measured with a small number of indicators? Lessons from ONS' move from 60 to 7 national well-being measures
Vasiliki Sogia - Office for National Statistics, Newport, UK

Measuring Learning Gaps Across Countries: A Distance-Based Composite Indicator Using DL2 Methodology
José Carlos Almagro-Azor - University of Granada, Spain; University of Cagliari, & University of Florence, Italy

An Interactive Application for Communicating Familywise Error Rate and False Discovery Rate
Mintu Nath - University of Aberdeen, UK

Day 4 Thursday 10 September

09:00 – 10:00

Professional Development

Getting published: a workshop from the Royal Society

Purbeck Lounge

This session will provide a brief introduction to the Royal Society and our publishing activities, followed by an exploration into the publishing process. It will cover how to choose a journal, an overview of the publishing process, and how to prepare your manuscript for submission.

Organised and presented by Ellen Porter, Commissioning Editor of Philosophical Transactions of the Royal Society A

10:10 – 11:00

Plenary

Keynote 6: Significance Lecture 2026: Gordana Radojević in conversation with Ron Wasserstein

Solent Hall

Gordana Radojević - University of Donja Gorica, & Association of Statisticians of Montenegro, Podgorica, Montenegro

11:00 – 11:30

Refreshment break

Windsor Hall

11:30 – 12:50

Applications in Business, Industry & Finance

Multi-objective optimal designs in practice

Westbourne Suite

Response surface methodology has long made an important contribution to experimental research in industrial engineering and other types of applications. Classical (combinatorially constructed) designs such as the central composite design (CCD) are widely used and valued for their many good properties. On the other hand optimal designs are very flexible, allowing any run size, irregular regions of experimentation and, with care, can be run in experiments with complex blocking structures. The main limitation of optimal designs is that they are optimised only for a single, quite simple, objective such as D-optimality.

Multi-objective optimal design of experiments (MOODE) tries to get the best of both classical and optimal designs by searching for designs which are optimal for compound criteria which try to capture the multiple objectives experimenters have when choosing designs. When runs are completely randomised, under certain circumstances, CCDs can be optimal, but MOODEs are much more flexible in being able to target diverse objectives in various blocking structures.

The use of MOODEs in practice will be illustrated through applications in quality improvement of animal feeds and surgical gels. An R package for implementing the designs will be demonstrated and prospects for future developments discussed. Finally the wide applicability of MOODE will be shown by redesigning published engineering experiments to show how much more information could have been obtained from them in the most complex design structures.

Steven Gilmour - Kings College London, UK

Organised by Blaise Egan for RSS Quality Improvement Section

Communicating & Teaching Statistics

Students as partners: Co-creating the future of statistics education

Tregonwell Hall

This session will showcase innovative approaches to involving students as active collaborators in shaping the future of statistics education. Drawing on case studies and experiences from universities across the UK, speakers will share practical examples of how partnership models are being used to enhance curriculum design, improve teaching practices, and foster more inclusive learning environments. The session will also address the challenges and benefits of embedding partnership approaches in statistical education, offering insights into how such collaboration can strengthen engagement, confidence, and belonging among students and staff alike.

Powered by curiosity: Student led data investigations with meaning
Rachel Hilliam - The Open University, Milton Keynes, UK

Including the student voice at national, programme and classroom level.

Chris Brignell - University of Nottingham, & Royal Statistical Society, Vice President, UK

Scalable Support for Engaging and Retaining New Students
Nicholas G Tawn - University of Warwick, Coventry, UK

Transforming Education Together: Reflecting on Students as Partners Projects at Imperial
Ioanna Papatsouma - Imperial College London, UK

Organised by Rachel Hilliam & Ioanna Papatsouma for RSS Teaching Statistics Section

Day 4 Thursday 10 September

11:30 – 12:50

Data Science & AI

Demystifying AI for the public and collaborators

Bay View Suite 2

Popularity in big data and artificial intelligence (AI) techniques are transforming the public and professionals approach data in their day-to-day life. At the same time, misunderstandings about data methods and applications could lead to inappropriate data practices, misinformation, or heightened concerns about the scope of AI.

As statisticians and data professionals with mathematical and statistical knowledge, how can we play a role in enhancing professional and public knowledge of these techniques? The session aims to examine key challenges and identify ways statisticians and data professionals can improve data communication and public understanding of AI in various professional context.

James Benford - Director General, Surveys and Economic Statistics, Office for National Statistics, UK

Donna Phillips - Senior Director, Data Science, Verian Group; & Chair, RSS AI Task Force, UK

Fatemeh Torabi - Health Data Science, Swansea University Medical School, UK

Organised by Francis Osei for RSS Young Statisticians Section

Methods & Theory

New frontiers in time series modelling and inference

Tregonwell Hall Seminar Suite 2

Time series data in contemporary applications often exhibit structural dependence, heavy tails, nonlinear dynamics, and complex causal structures. These features undermine the suitability of many traditional modelling and inference methods. As a result, new statistical tools are being developed to improve prediction and uncertainty quantification under more realistic conditions. This session highlights recent advances that move beyond classical assumptions by drawing on ideas from robust analysis, machine learning, and causal inference. Together, these contributions show how emerging methodologies can better accommodate extreme events, nonlinear dependence, and causally driven temporal relationships, offering a forward-looking view of the next generation of time series analysis.

A Simple and Effective Random Forest Modelling for Nonlinear Time Series Data

Zudi Lu - City University of Hong Kong

Predictive Tail-Risk Regression for Heavy-Tailed Time Series
Wen-Xin Zhou - University of Illinois Chicago, USA

Conditional Independence Testing in Time Series
Jieru Shi - University College London, UK

Organised by Chao Zheng, University of Southampton

Medical Statistics

Statistics and AI for clinical diagnosis

Solent Hall

Statistical modelling, AI and machine learning (ML) have become vital tools in enhancing healthcare and supporting data-driven clinical decision making. ML techniques are often used for the analysis of high-dimensional and multimodal data, enabling the extraction of clinically relevant features from medical imaging (e.g. CT scans, MRI and ultrasound scans). Image analysis and segmentation through deep learning are revolutionizing diagnostics — for example, in identifying tumors, quantifying tissue damage, enabling classification of low back pain disease types, or guiding surgical planning. Although ML methods can offer high predictive accuracy, they are inherently black boxes, hence their adoption for clinical diagnostic decisions making is conditional on an understanding of the uncertainty associated with ML predictions. The combination of ML with statistics (e.g. conformal prediction) ensures that clinicians receive not only a point-estimate diagnosis but also calibrated uncertainty bounds, increasing the trustworthiness of the model predictions.

Physics-informed machine learning for cardiovascular disease studies
Dirk Husmeier - University of Glasgow, UK

Combining machine learning with classical statistics for early detection of disease risks

Lei Clifton - Oxford University, UK

Conformal Uncertainty Quantification for Frontier AI Assurance in Multimodal Computational Cancer

Tapabrata Rohan Chakraborty - University College London; University of Oxford, & The Alan Turing Institute, London, UK

Organised by Mihaela Paun

Day 4 Thursday 10 September

11:30 – 12:50

Methods & Theory

Advances in random matrix theory

Durley Suite

Random matrix theory is now a standard and very vibrant research area in probability, statistics, data science and econometrics. This session features four novel developments studying asymptotic and spectral properties of large random matrices in the bulk and on the edge

The smallest singular value of large random rectangular Toeplitz and circulant matrices

Alexei Onatskiy - University of Cambridge, UK

On the spectral edge of non-Hermitian random matrices

Giorgio Cipponi - University of Rome Tor Vergata, Italy

Traffic central limit theorem for GOE

Andrej Srakar - University of Ljubljana, Slovenia

The asymptotic rank of adjacency matrices of weighted configuration models over arbitrary fields

Noela Müller - Eindhoven University of Technology, The Netherlands:

Organised by Andrej Srakar for RSS Emerging Applications Section

Official Statistics & Public Policy

Public statistics: reality or dream?

Bay View Suite 1

The concept of statistics for the public good underpins the legislation and ethos for UK official statistics. It reflects the worldwide fundamental principle for official statistics.

The specific examples of public good listed in UK legislation are: informing the public about social and economic matters; and assisting in the development and evaluation of public policy.

However, in practice, decisions about priorities and methodologies are often seen to reflect the primacy of government policy needs, albeit that the outputs of the statistical system are made publicly available.

This conclusion was one of the triggers for the development of the RSS vision of public statistics[1] – statistics that the public need as well as statistics for public policy. The vision was launched at the RSS Conference in 2024 [2].

The purpose of this session is to gather views about the future high-level direction of UK official statistics – what, and who, are they really for?

Organised by David Caplan for RSS Public Statistics Advisory Group (PSAG)

Links

rss.org.uk/policy-campaigns/policy/our-work-on-public-statistics/

www.youtube.com/watch?v=M43e_94EVOI

Official Statistics & Public Policy

ASHE: Rise of the Phoenix

Purbeck Bar

The Annual Survey of Hours and Earnings (ASHE), carried out in April each year, is the most comprehensive source of information on the structure and distribution of earnings in the UK. ASHE provides information about the levels, distribution and make-up of earnings and paid hours worked for employees in all industries and occupations. The ASHE tables contain estimates of earnings for employees by sex and full-time or part-time status. Further breakdowns include by region, occupation, industry, age group and public or private sector.

This session will take the audience through an end-to-end journey of the mechanics of ASHE, the challenges it poses for the Office for National Statistics (ONS), and the plans – already afoot – to redevelop, and improve, all aspects of this key ONS publication.

Cleaning up the ASHES: optimising data collection and processing
Charlotte Dedwards, Nikola Hiscox and Jen Sage - Office for National Statistics, UK

ASHES: The tests

Gary Brown and Tony Lui - Office for National Statistics, UK

ASHES: The series

Martina Portanti, Lualhati Santiago and Chris Wojcikowski - Office for National Statistics, UK

Organised by Gary Brown, Office for National Statistics

Day 4 Thursday 10 September

11:30 – 12:50

Other Applications

What to do about statistical issues in medical misconduct cases?

Meyrick Suite

Since the controversy surrounding the Lucy Letby case, the use of statistics in medical misconduct cases has been a hot topic. At the Edinburgh conference in 2025 we held a session to explore what the statistical issues are in these sorts of cases. In this session we will follow up on last year by presenting the current ongoing initiatives for improving use of statistics both in these sorts of cases and more broadly and discussing what else statisticians can do. The RSS and the Statistics and the Law section have been working on developing training for legal professionals, setting up registers for linking together statistical experts and practitioners, producing guidance for the police and lawyers, and engaging with policymakers and other stakeholders to try and influence policy. The talks will be followed by a discussion in which we will explore other avenues for progress.

Initiatives for improving use of statistics within the law
Amy L Wilson - University of Edinburgh, UK

Improving the Quality of Scientific Evidence Evaluation
Gillian Tully - King's College London, UK

Chaired by Peter Elston

Organised by Amy Wilson & Ian Hunt for RSS Statistics and the Law Section

Professional Development

Statistical modelling with semantic features

Bourne Lounge

This session will involve 50 minutes of hands-on lab and experimentation extracting semantic features from free-text sources, then investigating them through exploratory statistical methods and finally using them as features in statistical model building and evaluation. In the last half hour, there will be an open discussion of how to develop methodologies for working rigorously with such semantic features in statistical projects.

Organised by Eugenie Hunsicker (The Access Group), Peter Capsalis (EY), Emma Stowell (Databricks)

Methods & Theory

Recent advances in missing data

Tregonwell Hall Seminar Suite 1

In the modern data-rich era, we are becoming increasingly reliant on algorithms that process data in order to make a prediction, recommend an action or to answer a statistical question. One of the most commonly encountered discrepancies between real data sets and models hypothesised when developing such algorithms is that of missing data.

This session will include three talks on new algorithms that are tailor-made to deal with missing data head-on.

Deep learning with missing data

Tianyi Ma - Statistical Laboratory, University of Cambridge, UK

Learning from Missing Counterfactuals: Doubly Robust Deep Nets for Multi-Stage Causal Inference

Jelena Bradic - Cornell University, USA

On the hardness of group-conditional distribution-free predictive inference, an application to predictive uncertainty quantification with missing covariates

Margaux Zaffran - UC Berkeley, USA

Organised by Thomas Berrett (University of Warwick) and Timothy Cannings (University of Edinburgh)



Day 4 Thursday 10 September

11:30 – 12:50

Social Statistics

Comparative judgement: stimulating methodological developments

Branksome Suite

Comparative judgement (CJ) is a powerful method used extensively across the social sciences to tackle difficult measurement problems that evade other approaches. At heart it involves asking participants to select the better of pairs of presented objects, and then modelling their binary decisions to produce a measurement scale. CJ approaches are used to study wide ranging issues from the prevalence of abuse through to mathematical beauty. This session is the culmination of an EPSRC Discipline Hoping Grant that brought statisticians and social scientists together to stimulate methodological developments and identify future directions for research. Talks will cover the state of the art, the surprisingly wide ranging applications of CJ, and cutting-edge research into producing robust outcomes from sparse datasets. Our focus throughout will be current developments in statistical modelling to support the ever-growing potential of CJ to tackle difficult measurement problems across disciplines.

Comparative judgement methods and models: setting an interdisciplinary research agenda

Ian Jones - Loughborough University, UK

When not all judges agree: Clustering in the Bradley-Terry Model

Charlotte Norridge - University of Birmingham, UK

Bayesian active learning methods for comparative judgement models

Alma Rahat - Loughborough University, UK

Extending Bayesian Multi-Criteria Comparative Judgement beyond holistic ranking

Andy Gray - Bath Spa University, UK

Discussant: **Rowland Seymour** - University of Birmingham, UK

Organised by Ian Jones & Rowland Seymour

12:50 – 14:00

Lunch

Windsor Hall

12:50 – 14:00

Other

Royal Statistical Society Annual General Meeting

Purbeck Lounge

The AGM is a crucial session in the Society's calendar year, and an important reflection of the last year. It is a key opportunity for members to review RSS activities, finances, and governance arrangements.

RSS President, **Professor Sir John Aston**, will chair the meeting, offering his insight and leading in making pivotal decisions for the year ahead. During the meeting, Fellows will be asked to either approve or amend:

- The 2025 annual report and financial statements
- The re-appointment of the Society's auditors, Sayer Vincent
- The minutes of the 2025 AGM (held in Edinburgh)

An update on the ongoing review of Society governance will also be provided ahead of an upcoming member vote on recommended changes.

Non-members are, as always, very welcome to attend the event; however, note that only RSS Fellows will be eligible to vote on matters raised.

Lunch will be served at the AGM – it will be available, and arrivals welcomed, from 12:50, with the meeting itself starting at 13:00.

AGM papers can be found here:

[rss.org.uk/training-events/events/events-2026/rss-events/192nd-rss-annual-general-meeting-\(agm\)/#fulleventinfo](https://rss.org.uk/training-events/events/events-2026/rss-events/192nd-rss-annual-general-meeting-(agm)/#fulleventinfo)

14:00 – 15:20

Applications in Business, Industry & Finance

Statistical engineering

Durley Suite

The statistical engineering Special Interest Group is a forum for demonstrating and promoting the use of statistics within the engineering profession fostering collaboration between the two domains. In this session, speakers will demonstrate the use of statistics and statistical thinking in engineering and its impact on industry through real-life use-cases. Following the talks we will convene a panel discussion amongst the statistical and engineering profession guided by audience participation. We invite audience participation in person and using live online tools.

A statistical engineering perspective on Trustworthy AI and its implementation

Lindsay Lee - AMRC, UK

Engineering Measurement System Analysis

Huw Williams - Birmingham University, UK

Sequential Latin Hypercube Design for Efficient Global Optimisation

Ron Bates - Rolls Royce plc, UK

Panel Chair: Ron Bates, Rolls-Royce plc

Organised by Ron Bates & Lindsey Lee for RSS Statistical Engineering Special Interest Group

Day 4 Thursday 10 September

14:00 – 15:20

Communicating & Teaching Statistics

Debating the "rules" of data visualisation

Solent Hall

Data visualisation is a key aspect of how we communicate data, especially to broad audiences. Those visualisations are most effective when well-designed but it's not always easy to define what makes a "good" data visualisation. Searching for data visualisation guidelines can often bring up conflicting advice, especially when it comes to the rules one must follow when designing charts.

In this session, panellists will present the case for and against the some of the classic rules of data visualisation, such as:

- Pie charts are bad
- You should never make a 3D chart
- The axis should start at zero
- Don't use multi-coloured bars

Panellists will advocate for their stance on the "rules" and answer follow-up questions, before the floor is opened up to the audience for further questions.

The aim of this session is to (respectfully) debate some commonly upheld rules of visualisation, to better understand when and why they might or might not be appropriate.

Panel members will include:

Roger Beecham - University of Leeds, UK

Peter Broad - Office for National Statistics, UK

Charlotte Hadley - Visible Data, UK

Hortense Quazza - Care Quality Commission, UK

Organised by Nicola Rennie

Data Science & AI

A deregulatory approach to AI: Good or Bad?

Bay View Suite 2

Debate around the current deregulatory climate around AI, particularly in the UK

Organised by Daniel Bogiatzis-Gibbons & Janet Bastiman for the RSS AI Taskforce and Data Ethics and Governance Section

Data Science & AI

Developments in information theory and measurement, with application to biological signalling systems and gene networks

Bay View Suite 1

This session concerns machine learning settings and developments in the measurement of mutual information and information transfer. The session will include material on gene networks and how normative theories, such as information-theoretic optimization principles, and simplified information processing architectures, provide a framework for the development or quantification of these networks. Finally, a unified framework for computing the information capacity of biological signalling systems will be discussed, using Fisher Information.

Estimating Mutual Information using supervised learning predictions
Chao Gao - University of St Andrews, UK

Information, dynamical systems and gene networks
Tim Dullweber - University of Basel, Switzerland

Closed-Form Information Capacity of Canonical Signalling Models
Michał Komorowski - Polish Academy of Sciences, Warsaw, Poland

Organised by Michail Papathomas & Giorgos Minas for RSS Statistical Computing Section

Medical Statistics

Building Trustworthy and Decision-Ready Evidence for HTA

Tregonwell Hall Seminar Suite 2

Health Technology Assessment (HTA) is increasingly shaped by complex evidence expectations, evolving joint clinical assessment requirements, and the need to make credible decisions under uncertainty. This session brings together four connected methodological perspectives across the HTA evidence lifecycle: designing trials with HTA needs in mind, using causal reasoning to support evidence interpretation, integrating patient preferences into benefit-risk assessment, and communicating uncertainty in ways that support HTA decision-making. Together, the talks will show how methodological choices made early in development can determine whether evidence is relevant, credible, and acceptable to HTA bodies at the point of assessment.

The session will conclude with a panel discussion inviting speakers and participants to reflect on how these methods can be applied across therapeutic areas, jurisdictions, and evidence-generation contexts. Attendees will leave with a practical understanding of how to connect trial design, causal reasoning, patient-centered methods, and uncertainty management into a coherent HTA strategy.

Building HTA Value into Trial Design

Laura Walton - MSD (UK) Limited, London, UK

Directed Acyclic Graphs (DAGs) Articulate Credible Causal Thinking for Indirect Comparisons

Kate Ren - University of Sheffield, UK

AI/ML-Enabled Patient Preference Evidence for Benefit-Risk Assessment
Onyeka Obuaya - MSD (UK) Limited, London, UK

Understanding and Turning Uncertainty into Decision Insight
Lara Wolfson - MSD Europe Belgium, Brussels, Belgium

Organised by Shahrul Mt-Isa for MSD

Day 4 Thursday 10 September

14:00 – 15:20

Methods & Theory

Modern approaches to robust and explainable inference

Tregonwell Hall Seminar Suite 1

This IMS invited session brings together recent advances in developing statistical inference procedures that remain reliable, interpretable, and scientifically meaningful in complex modelling settings, integrating ideas from modern post-selection inference and causal inference.

Debiased Risk Minimization for Assumption-lean Causal Learning
Stijn Vansteelandt - Ghent University, Belgium

A Counterfactual Perspective of Heritability, Explainability, and ANOVA
Qingyuan Zhao - University of Cambridge, UK

Induced replication and the assessment of models
Heather Battey - Imperial College London, UK

Organised by Rajen Shah

Medical Statistics

Bayesian causal & decision-focused methods for longitudinal health data

Branksome Suite

The rise of AI/ML and the ubiquity of real-world, longitudinal biomedical data demand methodology that is not only flexible, but also decision-ready. This session brings together three complementary strands: causal identification under dynamic assignment, principled handling of intercurrent events in complex outcomes, and scalable Bayesian modelling for high-dimensional trajectories, to advance a coherent agenda: producing trustworthy inferences that translate directly into better clinical and policy decisions.

Together, these contributions exemplify how modern statistical methodology can reconcile flexibility with rigor. They also share common principles, explicit assumptions, uncertainty quantification, and sensitivity analysis, that make findings transportable across settings and robust to model misspecification.

The session will appeal to listeners across Medical Statistics and Data Science & AI. Attendees will leave with a toolkit for building end-to-end pipelines that (a) respect longitudinal dependence and dynamic policies, (b) connect estimands to decisions, and (c) scale to modern data modalities (clinical, functional, and imaging).

Desirability Ranking for ALS Trials: Integrating Survival, Longitudinal Function, and Intercurrent Events
Ying Lu - Stanford University, USA

Bayesian Inference in Longitudinal Regression Discontinuity Designs
Alessandra Mattei - University of Florence, Italy

Bayesian structural nested failure time models for causal survival analysis with time-varying treatments
Liangyuan Hu – Rutgers University, USA

Organised by Liangyuan Hu, Rutgers University

Methods & Theory

Modern approaches for missing and incomplete data analysis

Purbeck Bar

Real-world datasets frequently contain missing or incomplete values, posing significant challenges for statistical analysis. Traditional approaches often rely on a complete-case analysis or use imputation methods that can introduce bias or reduce statistical power. This session showcases recent methodological advances that directly address missing data challenges across three fundamental statistical tasks.

Together, these contributions provide researchers and practitioners with principled, theoretically sound tools for analysing datasets that have either missing or incomplete values. The session will appeal to statisticians working on missing data theory, machine learning practitioners dealing with real-world data quality issues, and applied researchers seeking robust methods for their analyses.

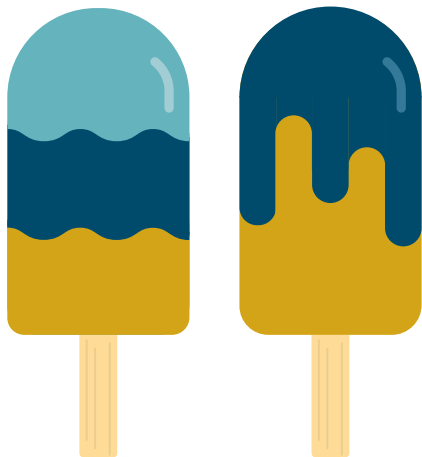
Rank-based hypothesis testing with missing data
Yijin Zeng - Imperial College London, UK

Nonparametric classification with missing data
Torben Sell - University of Edinburgh, UK

Independence Testing with Incomplete High-Dimensional Data
Bojana Milošević - University of Belgrade, Serbia

Pre-booking required

Organised by Dean Bodenham on behalf of the RSS Emerging Applications Section



Day 4 Thursday 10 September

14:00 – 15:20

Official Statistics & Public Policy

ONS statistics and analysis that serve the public good: population and migration statistics and their cross-government uses

Tregonwell Hall

This session will bring together Office for National Statistics (ONS) statistical producer teams and users from other government departments (OGDs) to explore how population and migration statistics support onward planning, policy, and decision-making.

The session will be chaired by Esta Clark from National Records Scotland. It will open with an ONS overview of population and migration statistics, including recent developments, methods and findings, before showcasing practical examples of how these statistics are used across government and public policy. It will also provide an opportunity for discussion and feedback from users, topic specialists and methods experts to support continued innovation in official statistics.

Rich Pereira, Office for National Statistics, will introduce the session and set out ONS's role in producing population and migration statistics, including their development and use for the public good.

Elliott Larkinson, Department for Work and Pensions (DWP), will present on how DWP uses population statistics for benefit forecasting and policy analysis.

Ben Corr, Greater London Authority (GLA), will present on demographic modelling to support regional and local planning in London.

Pamela Cobb and Kevin McCafferty (both Office for National Statistics) will present on how the ONS Longitudinal Study and Refugee Integration Outcomes Project use linked data to produce robust evidence bases that can be analysed to understand population outcomes over time.

The session will conclude by drawing out common themes and encouraging discussion on how ONS statistics can continue to meet user needs, support innovation and inform decisions for the public good.

Organised by James Robards and Aqsa Bibi, Office for National Statistics.

Other Applications

Algorithmic decision-support in the law

Bourne Lounge

The rise in available data and explosion in use of machine learning and artificial intelligence have led to questions about use of algorithmic approaches to decision-making in legal systems. While black-box approaches might arguably be suitable for investigative policing applications or legal processes, explainability and transparency are key where algorithms are to be used to support judicial reasoning. In this session we will explore and discuss some of the key issues in this area, including good practice for designing algorithms across different areas of law, the advantages and disadvantages of different algorithmic methods when it comes to legal reasoning and how to support legal practitioners in the evaluation of algorithms in litigation. We will have two talks and a panel discussion, one talk looking at graphical modelling approaches for legal reasoning, one talk looking at algorithms in litigation from a statistical perspective, and a panel looking at practical considerations in use of algorithms for legal decision-support.

Gail Robertson, Biomathematics and Statistics Scotland, graphical approaches for decision-support in forensics and the law

Jane Hutton, University of Warwick, on a statistical perspective of algorithms in the law.

Organised by Gail Robertson & Amy Wilson for RSS Statistics and the Law Section

Methods & Theory

Recent methodological advances in change-point analysis

Meyrick Suite

Change-point analysis has long been a cornerstone of statistical inference for detecting structural changes in data streams. In recent years, the field has witnessed rapid methodological development driven by emerging challenges in modern data environments, such as high-dimensionality, dependence, non-stationarity, and the need for online or real-time detection. This session brings together researchers developing innovative frameworks that extend classical change-point ideas to contemporary settings, combining rigorous theoretical foundations with practical relevance.

High-dimensional sparsity-adaptive bottom-up multiple change-point detection

Hyeyoung Maeng - Durham University, UK

A grid-based methodology for fast online changepoint detection

Per August Jarval Moen - University of Oslo, Norway

Detecting change regions on spheres

Di Su - London School of Economics, UK

Changepoint detection, some links with computational geometry

Guillem Rigai - INRAE, Gif Sur Yvette, France

Organised by Tengyao Wang

Day 4 Thursday 10 September

14:00 – 15:20

Social Statistics

Designing statistically efficient national educational studies: the role of simulation

Westbourne Suite

The context of quantitative educational research is complex: student data exhibits clustering at school level; student participation rates are not uniform; multiple-arm (>2) trials have been implemented; school size is variable between year of design and year of delivery; outcome variables themselves, such as test scores, are measured with a degree of imprecision.

Two presentations demonstrate the value simulations in overcoming these complexities and to design and deliver statistically efficient studies.

Organised & presented by Stephen Cromie and Ruth Staunton
(National Foundation for Educational Research)

15:20 – 15:50

Refreshment break

Windsor Hall

15:50 – 16:50

Applications in Business, Industry & Finance

Contributed: Industrial Applications of Advanced Statistical Methods

Durley Suite

To Replicate or Not to Replicate? Effective Strategies for Bayesian Optimization with Noisy Industrial Data.

Hadley Myers - SAS Institute B.V., Huizen, Netherlands

From AI to 8D: Integrating Artificial Intelligence and Statistics for Data-Driven Supply Chain Problem Solving at Rolls-Royce.

Joseph Yose - Minitab, Coventry, UK

Juan Carlos Valer - Rolls Royce, Derby, UK

Communicating & Teaching Statistics

Contributed: Curriculum and Teaching

Tregonwell Hall

A data literate society without the fear factor

Rachel M Hilliam - The Open University, Milton Keynes, UK

Subjectification as a pedagogical device: Evidence from online videos

Richard M Gunton - Queen Mary University of London, UK

Are You Better than AI? A Comparative Study of GenAI and Human Marking in Statistics

Neil H Spencer - University of Hertfordshire, Hatfield, UK

Data Science & AI

Contributed: Development and Review of Advanced Data Science Methods

Bay View Suite 2

Abnormal component analysis

Pavlo Mozharovskyi - LTCI, Telecom Paris, Institut Polytechnique de Paris, France

Navigating 25 R packages for causal mediation analysis: a comparative review

Ruijie Li - National Healthcare Group, Singapore, Singapore



Day 4 Thursday 10 September

15:50 – 16:50

Other

Hidden Figures. Anderson Grey McKendrick and Jessamine Whitney: Pioneers in epidemiological statistics

Branksome Suite

The birth of modern epidemiology is generally attributed to the investigations of John Snow during the 1854 Soho Cholera outbreak, where he demonstrated the link between disease occurrence and environmental exposure. This empirically driven, population-level approach anticipated two later developments in statistical epidemiology that developed in parallel and influence epidemiological thinking to this day.

The Scottish physician Anderson Gray McKendrick conceptualised population level disease processes as dynamic compartmentalised systems, with transitions between states described by differential equations. His most enduring legacy includes the SIR compartment model and the concept of epidemic threshold and R_0 .

Meanwhile the public health statistician Jessamine Whitney was developing a complementary approach based on rigorous large-scale, cross-sectional observational studies. Her landmark study Death Rates by Occupation is a classic of public health research and was one of the earliest demonstrations of the role of economic disparities in health outcomes. The mechanistic models of McKendrick complement Whitney's empirically-focused approach. They support public health policy by combining evidence on current burden and risk factors with predictive insight into the likely impact of control strategies.

Duncan Matthew

Penny Reynolds

Organised by Penny Reynolds for RSS History of Statistics Section

15:50 – 16:50

Medical Statistics

Contributed: Prediction Model and Diagnostic Accuracy

Purbeck Bar

Optimally Weighted Random Forest for Predicting Binary Outcomes
Haoxiang Gao - UCL, London, UK

My Kingdom for an Outcome Definition: Hard lessons from dementia prediction modelling research
Taya Collyer - Monash University, & Bayside Health, Melbourne, Australia

Hierarchical, commensurate and power prior models to incorporate historical information in diagnostic accuracy studies
Jordan L Oakley - Newcastle University, UK

Medical Statistics

Contributed: Clinical trials

Tregonwell Hall Seminar Suite 1

Generalized additive mixed modeling for improved detection of under- and overreporting of events in multicenter clinical trials.
Sarah Pirenne - CluePoints, Louvain-la-Neuve, Belgium

Regression to the Mean disguised as a trend, a cautionary tale of assessing physical activity in the least active subgroup using a Stepped Wedge design.
Roger A Morbey - University of Bristol, UK

Use of a nonparametric Bayesian method to model health state preferences: An application to Lebanese SF-6D valuations
Samer A Kharroubi - American University of Beirut, Lebanon, & University of Sheffield, UK

Methods & Theory

Contributed: Forecasting and inference for temporal processes

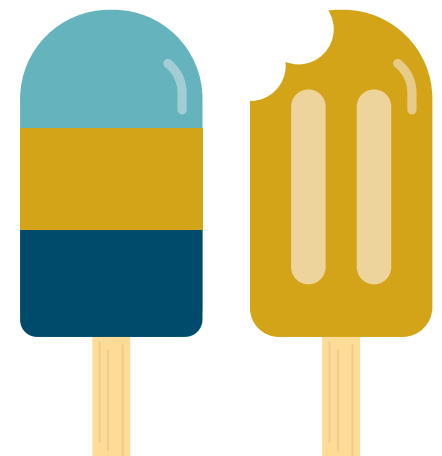
Tregonwell Hall Seminar Suite 2

Forecasting UK consumer price inflation with generalised network autoregressive processes using networks chosen randomly and by generic algorithms.

Guy P Nason - Imperial College London, UK

Parametric inference for the discretely observed multivariate Hawkes process using particle Markov Chain Monte Carlo
Jason J Lambe - UNSW, Sydney, Australia

Wavelet-Based Estimation and Forecasting for Time-Varying Generalized Network Autoregressive Processes
Hengxu Liu - Imperial College London, UK



Day 4 Thursday 10 September

15:50 – 16:50

Official Statistics & Public Policy

Contributed: Hidden Counts & Job Amounts

Meyrick Suite

Counting Shadows: A Community-Anchored Modelling Framework for Estimating Unauthorised Population Size
Maciej Beresewicz – Poznan University of Economics and Business, Poland

Brendan Georgeson - Office for National Statistics, Newport, UK
Peter Walsh - Migration Observatory, University of Oxford, UK

Estimation of Job Vacancy Statistics Under Misclassification and Missing Data Using Capture-Recapture
Adam Struzik - Adam Mickiewicz University, & Statistical Office in Poznań, Poland

Community Policing Can Reduce Crime Over Time: Evidence from São Paulo, Brazil
Aya Tamura - The University of Edinburgh, UK; & The University of Tokyo, Japan

Official Statistics & Public Policy

Going above and beyond: innovations in official and non-official statistics

Bay View Suite 1

This session will include presentations from the 2026 winners of two of the RSS's Statistical Excellence Awards. The session will conclude with a panel discussion about what going above and beyond looks like in official statistics and also for those voluntarily applying the Code of Practice to their work.

Campion Award for Excellence in Official Statistics

Representatives from the Department for Work and Pensions (DWP) will present their work on integration of administrative data into the Family Resources Survey (FRS) and related outputs.

In March 2026, for the first time, FRS based Accredited Official Statistics incorporated linked DWP benefits data, addressing a long standing issue of benefit under reporting in income statistics. This innovative methodological development has reduced under reporting, improved the quality of poverty and income statistics, and strengthened the evidence base used by policymakers across government, as well as by researchers and academics, to inform analysis and public debate.

Award for Statistical Excellence in Trustworthiness, Quality & Value

Researchers from the Violence Research Group at Cardiff University will present their winning submission, titled "Emergency Department (A&E) data to measure and prevent violence."

Up to 75% of violence resulting in emergency hospital treatment in England and Wales is not known to police. This, and statistics users' uncertainty about violence trends and the prevention responses required, prompted the nominee, in 2000, to implement and maintain violence surveillance in A&Es and a new, structured A&E network. This new A&E (NVSN) measure shows that violence causing serious injury decreased over 25 years, consistent with crime survey (CSEW) but not police data. The nominee's 25 annual reports and their evaluations have prompted wide, consequential user attention and new prevention policy and practice.

Learn about the impact of these award-winning projects.

15:50 – 16:50

Social Statistics

Contributed: Statistics & Machine Learning applications in Social and Health Sciences

Westbourne Suite

Creating synthetic data for social science projects: Machine-learning and Agent-based modelling go head to head
Jools Kasmire - UK Data Service, & University of Manchester, UK

Count Data Regression & Machine Learning Applications in Reproductive Health: Modelling Spontaneous Abortion in India
Prashant Verma - University of Allahabad, Prayagraj, India
Mukti Khetan - Indian Council of Medical Research-NIIRNCD, Jodhpur, India

Day 4 Thursday 10 September

17:00 – 17:50

Plenary

Keynote 7: Leonhard Held - Reproducible Science and Statistics

Solent Hall

Growing concerns regarding the quality of scientific research have amplified the call for stronger statistical contributions to improve practices. A landmark survey on scientific reproducibility (Baker, 2016) revealed that nearly 90% of over 1,500 researchers across various disciplines pinpointed "More robust experimental design" and "Better statistics" as critical solutions. Yet, how adequately has our field stepped up to meet these critical demands?

This talk will present several examples illustrating how various facets of the scientific reproducibility crisis demand rigorous statistical thinking and reasoning. Leading statisticians have long advocated for training that carefully balances statistical theory with practical scientific application. As George Box (1976) stated half a century ago, "statisticians must learn how to be good scientists," a message reinforced by the late Norm Breslow (2014) in his compelling plea, "It's the science that counts." To continue contributing effectively to scientific progress, the statistical field must deepen its engagement in "good statistical practice," encompassing experimental design, reproducibility, data stewardship, and meta-research.

Baker, M. (2016). Is there a reproducibility crisis? Nature, 533, 452-454.

Box, G.E.P. Science and Statistics (1976). JASA, 71, 791-799.

Breslow, N. E. (2014). Lessons in Biostatistics. In "Past, Present, and Future of Statistical Science". CRC Press.

17:50 – 18:00

Plenary

Close of conference

Solent Hall

19:30 – 23:59

Networking

Conference dinner

Bournemouth Pavilion



Thank you to those responsible for organising the conference:

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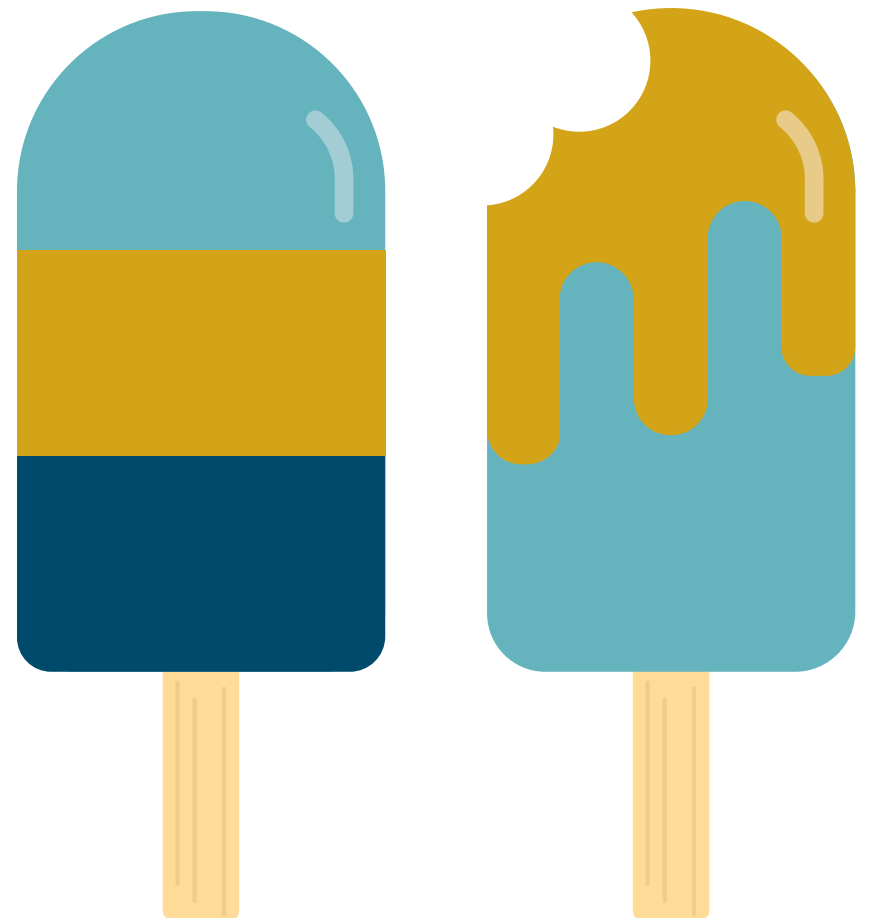
Venues

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Magdalen Smith and colleagues at Brief 2 Event for venue sourcing, site visit coordination, and accommodation booking service.

Thank you for attending
We hope to see you
next year in Wales.



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