# Regional Newsletter, December 2018

## In this issue

Elizabeth Williamson

Welcome to the Winter 2018 issue of the newsletter of the British and Irish Region of the IBS. As well as the usual offerings from our regional officers, and introductions to our new President and Secretary, this issue includes reports on the recently held meeting about count data, and an earlier meeting about the analysis of electronic health record data. The winners of our career-young biometrician bursaries write about their experiences at the recent IBC 2018 held in Barcelona, and we hear from our two new committee members. Details of the upcoming Channel Network Conference to be held this July at Rothamsted Research, UK, can be found at the end of the newsletter. We also take this opportunity to reflect on the career of David John Finney, a member of the British and Irish Region and Honorary Life Member of the IBS who recently passed away.

If you have any items or news you would like to share with the society in future newsletters, please send a message to elizabeth.williamson@lshtm.ac.uk.

## President's corner

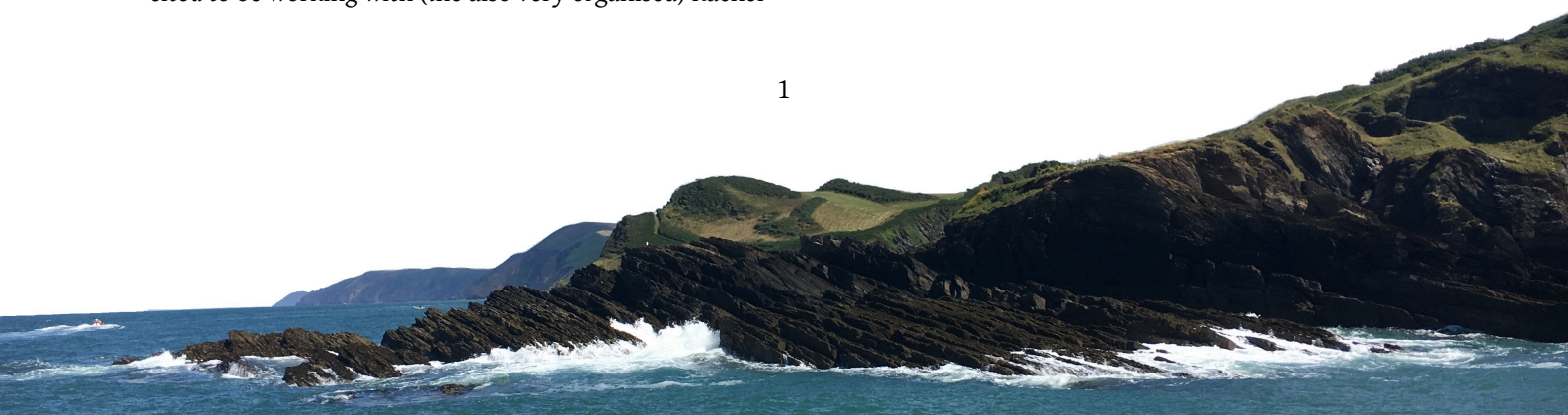
Ruth King

It is with great pleasure that I write my first article for the Regional Newsletter as the new President of the British and Irish Region of the IBS. Within my new role, and trying not to replicate any over-the-top Oscar winning speeches, there are however some individuals I would particularly like to thank for their contributions to the society as they stand down from important roles within the regional committee. In particular these are Martin Ridout who becomes the outgoing President of the region – and who I am very pleased to say will remain on the regional committee for 2019 as I will no doubt be relying on his wisdom and previous experience; and Sue Welham for her long and diligent service as an extremely well organised Secretary of the region, which she has undertaken since 2014. Rachel McCrea (University of Kent) will be taking over the role as Secretary and I am very excited to be working with (the also very organised) Rachel in this new capacity — as opposed to us trying to do matrix algebra in coffee shops. It will not surprise anyone who knows Sue that she has provided Rachel with several pages of important notes following from what she has learnt during her time as Secretary. I would also like to thank Tom Nye (Newcastle University) and Hannah Worthington (University of St Andrews) for their work for the society in their roles as regional committee members but who are also standing down at the end of their terms; and welcome Angela Wood (University of Cambridge) and Anestis Touloumis (University of Brighton).

Before looking forward I would like to also mark the passing of Prof David Finney who died recently just before his 102nd birthday. An obituary is provided later in this newsletter, detailing some of his contributions to biometrical research. I was very fortunate to meet David twice within the last 2 years at the University of Edinburgh — once at a retirement event of a colleague (Prof Colin Aitken) and also when he attended (his own) inaugural David Finney Centenary Lecture focused on "Statistical Research and its Benefit to Society" given by Prof Sheila Bird (MRC Biostatistics Unit) to mark his 100th birthday. Looking at David Finney's career and statistical achievements of the past it is difficult not to think about the reverse of this and look at what the future may hold. Arguably in recent memory the statistical community has lived through the recent computer revolution which itself has transformed the discipline and associated applied sciences — and we now appear to be within the "Data Science" revolution where there is widespread acknowledgement of the power of data to improve our understanding of systems and predict outcomes (something that statisticians did not need convincing of). This leads perhaps to a challenge for us all as to where and how we want Statistics to play the most important part in this now fast-changing world — and how we should achieve this.

To conclude my first report I would also like to particularly mention two other upcoming features of the region (see other items in this newsletter): the Young Biometrician Award (YBA) co-sponsored between the IBS region and the Fisher Memorial Trust; and the 7th Channel





Network Conference to be hosted by the British and Irish Region at Rothamsted Research (Hertfordshire) from 10-12th July 2019. Please do:

- nominate your career-young colleagues for the YBA (closing date is the 28th February); and
- submit an abstract for the Channel Network Conference (deadline 15th March) and attend the meeting in July.

I am already looking forward to both of these and serving as President for the region — though I am sure there will be some challenges along the way — I am doubly sure that the time will fly by. If you have any comments or would like to get involved with the society then please do contact either myself or Rachel.

*Incoming President: Ruth King.*

## Short biography

Ruth King is the Thomas Bayes Chair of Statistics at the University of Edinburgh, taking up her current position in 2015. Prior to this she was at the University of St Andrews for 12 years. Ruth was elected a fellow of the Learned Society of Wales in 2017; and the Royal Society of Edinburgh in 2018. Ruth has been an active member of the society — being a previous member of the regional committee; IBS elected council member; IBS editorial advisory committee member and Chair of the local organising committee of the Channel Network Conference in 2013 in St Andrews. Her research interests span the development of statistical models within ecology, epidemiology and medical applications.

# Secretary's Corner

Rachel McCrea

This is my first report as regional secretary and I would like to thank the outgoing secretary, Sue Welham, for all her help handing over her wealth of knowledge and very well-organised documentation.

*Incoming Secretary: Rachel McCrea.*

I am Senior Lecturer in Statistics at the University of Kent. I have previously served on the BIR committee twice, first in 2010-2012 and then again in 2014-2017 as a representative council member for the International Biometric Society. I am really looking forward to working with the whole BIR committee for my three year post.

I have attended many BIR meetings, have been a recipient of IBC bursaries and was awarded the inaugural Young Biometrician award in 2011 so recognise the importance of opportunities, especially for early-career academics, that this society supports.

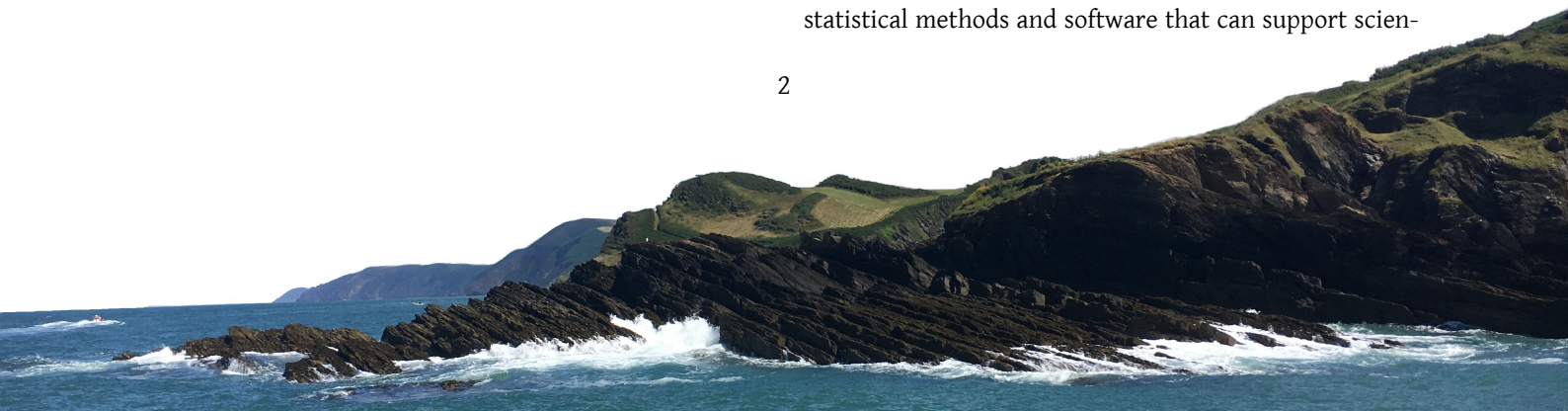
# Welcome to new committee members

## Anestis Touloumis

Anestis is a Senior Lecturer at the School of Computing, Engineering, and Mathematics at the University of Brighton which he joined in 2015. Prior to that, he was a Research Associate at the Cancer Research UK Cambridge Institute at the University of Cambridge (2011-2015) and at the EMBL-European Bioinformatics Institute (2011-2013). Anestis received his PhD in Statistics in 2011 from the University of Florida, USA.

Anestis is primarily interested in developing novel statistical methods and software that can support scien-





tists from biomedical disciplines. Broadly speaking, his research interests split into two categories: i) statistical inference with high-dimensional data driven by applications in genetics and, ii) regression analysis with discrete data motivated by longitudinal studies. Anestis is also the author and maintainer of four R packages that implement his methodological research: multgee, ShrinkCovMat, and SimCorMultRes that are available from the R-CRAN platform and HDTD that is available from the Bioconductor platform.

*New committee member: Anestis Touloumis.*

## Angela Wood

Angela Wood is a Senior Lecturer in Biostatistics in the Department of Public Health and Primary Care, University of Cambridge and Fellow / Senior Tutor of Darwin College, Cambridge. She received her BSc (Hons) in Mathematics and Statistics and her PhD in Medical Statistics from the University of Lancaster. Angela then spent six years as a statistical research scientist at the MRC Biostatistics Unit, Cambridge before being appointed to University Lecturer in Biostatistics in the Department of Public Health and Primary Care, Cambridge.

Angela's research interests are centered on the development and application of statistical methods for advancing epidemiological research. She has focused on developing statistical methodology for handling measurement errors and missing data, using repeated measures of risk factors, joint models and landmark models for analysis of longitudinal and survival data, multiple imputation, risk prediction, case-cohort study designs, Mendelian randomisation and meta-analysis. Her applied research has focused on cardiovascular disease and pregnancy related outcomes using a variety of routine data sources and prospective studies.

*New committee member: Angela Wood.*

# Report on the International Biometric Conference 2018

The five winners of our career-young biometrician bursaries, along with many of our members, attended the International Biometric Conference (IBC) 2018 in Barcelona in July. They all reported having an informative and enjoyable experience. Some of their positive feedback about the conference is below.

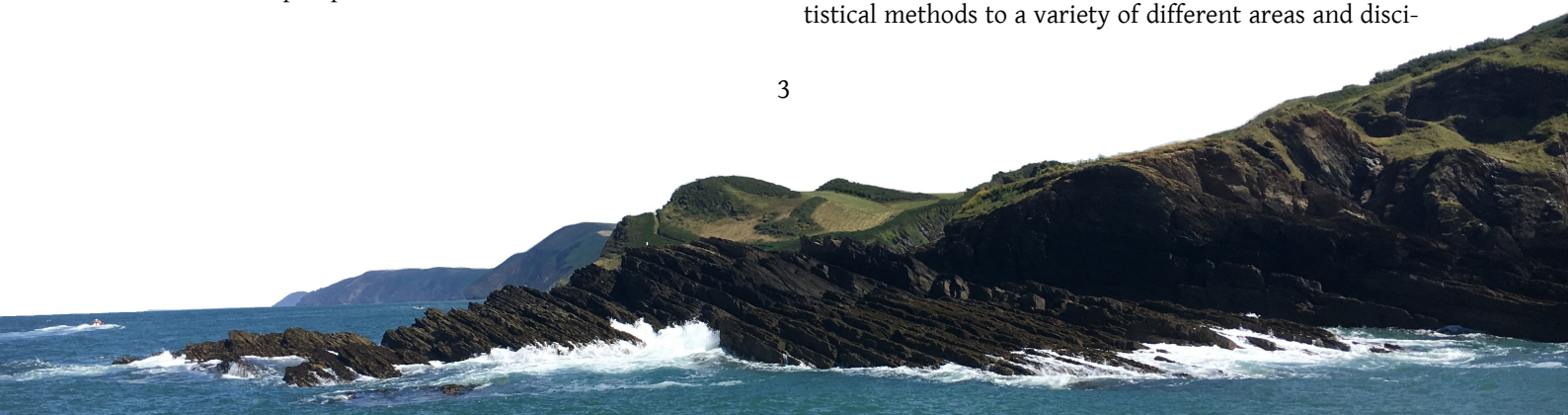
## Laura Boyle (Queen's University Belfast)

The opportunity to present to many senior academics within my research field provided an invaluable personal and professional development opportunity for me as a career-young biometrician. A number of delegates offered feedback and suggestions for my work during the time allocated for questions, and later during the coffee breaks between sessions I continued to connect with other attendees who wished to engage with me having heard my presentation. The feedback was informative and useful, and has been an influential consideration in the research I have conducted since IBC. Attending also enabled me to establish connections with researchers in the field which promise now to provide useful opportunities for further collaborative work.

## Peter Godolphin (University of Nottingham)

The conference was billed as a conference for 'anyone with an interest in biometry'. This was new to me as conferences I had attended before either had a clinical focus, or a focus on medical statistics. It was interesting to see such a wide application of data analysis and statistical methods to a variety of different areas and disci-





plines. Talks on environmental statistics, crop and breeding studies and longitudinal analysis in epidemiology were especially engaging. As a PhD student, it can be easy to become consumed by a specific research area or strand of statistics. The conference really widened my horizons and demonstrated the vast number of different possibilities and different careers you can be involved in as a biometrician.

Presenting my research to a varied statistics audience vastly improved my ability to explain my results in a technical manner but still an audience who were not expert in my research area.

In summary, as a young biometrician, the conference was a great opportunity for networking, learning and has given me a real insight into the varied and diverse careers that I can pursue once my PhD is completed. I would definitely recommend people at a similar stage of their career to go to the next IBC and experience this for themselves!


*Peter Godolphin at the International Biometric Conference 2018.*

## Haiyan Zheng (Lancaster University)

On the day of my presentation, I received quite a few interesting questions as well as excellent comments from both the audience and the chair. A senior research fellow based in Eli Lilly and Company reached out to me during the coffee break after our session. I was particularly encouraged and inspired to do further research based on his words that there is a high possibility our Bayesian approaches can be applied in early drug development.

I am really grateful to have received the career-young bursary from IBS-BIR this year. I have very much enjoyed the conference and events, hoping that my interaction with researchers from UK and other part of this globe will stimulate more exchange of ideas and future collaborations. I would also highly recommend other young researchers to take part in events organised by IBS and win opportunities of repeating my great experience to attend the annual conference.

## Marina Jiminez-Munoz (University of Kent)

All the international meetings that I had attended before this conference were in the area of statistical ecology. This conference gave me the opportunity to attend several talks in different areas of biometrics. Hearing about the latest advances in other areas of biometrics has enhanced my experience as a young researcher, has helped me understand potential research opportunities, and has widened my knowledge in statistical modelling.

I really appreciated the effort that the International Biometric conference put into promoting women in Statistics and Biometrics. From the posters and information about pioneer women in the field, to the women in statistics luncheon meeting. I felt inspired and empowered by the professionals who shared their work and experiences at this event. I was very pleased and encouraged that the Biometric society was encouraging women in science.

## Simon Newsome (London School of Hygiene and Tropical Medicine)

In the opening session Louise Ryan said that she really recommended that especially early-career researchers should not be afraid to go to sessions that they have never worked in before. I heeded this advice and tried to go to a wide range of sessions. It was really great to see such a wide variety of different topics being presented at the conference and it gave me a taste of some areas of statistics that I could possibly get involved with in in the future.

Of course, I did not spend the whole week in the conference centre, and it was really nice to have the Wednesday free to be able to explore the wonderful city of Barcelona. Overall, I am really grateful to the IBS for this opportunity. It was a really great experience, and I just hope that I will be able to come back to Seoul in 2020!



# Meeting report: 'Recent Developments in the Analysis of Count Data' (28 November)

The 2018 AGM was followed by a varied and interesting set of talks on recent developments in the analysis of count data.

Martin Ridout, from University of Kent, gave his Presidential Address on the topic of matching distributions. In an illustrative example, graphologists had to match samples of handwriting to personality sketches of the writers and the variable of interest is the number of correct matches. The classical matching distribution covers the case where matching is done completely at random, but there has been less work on distributions that allow some degree of matching ability. Martin discussed some suitable distributions, including one that he devised 20 years ago which turns out to be related to both the Mallows model for ranking and the Ewens sampling distribution. An interesting biometrical application is in studying mate fidelity in birds, where matches occur when birds choose the same partner as in the previous year.

Next, Angela Noufaily, from Warwick Medical School, talked about the application of Taylor's power law in modelling surveillance data on infectious diseases. Taylor's power law is an empirical relationship in which the variance is proportional to a power of the mean, where the power is usually between 1 and 2. It originated and has been used widely in ecology, but Angela showed that it applies equally well to a large database of weekly counts of infectious organisms over a 20-year period. One family of distributions which follows Taylor's power law over an appropriate range of parameter values is the Tweedie family, in which the skewness is also related to the mean via a power law; the infectious organism counts also exhibit such a relationship, suggesting that the counts might be well modelled by a Tweedie distribution (necessarily approximately, since the Tweedie distributions are continuous rather than discrete). The application of Tweedie distributions to determining threshold for disease outbreaks was illustrated.

After tea, Alina Peluso, from Imperial College described a general class of generalized additive models for count data based on the discrete Weibull distribution. The discrete Weibull is able to model both underdispersion and overdisperion in count data. The likelihood function is equivalent to that of the continuous Weibull distribution with interval-censored data, which is already implemented in the R package gamlss. This gives the model a distinct computational advantage over other competitors such as the Conway-Maxwell-Poisson distribution. Another attractive feature of the model is that there are explicit expressions for the quantiles. The model was applied to a set of planned fertility data from Mexico. Whilst the most common preference was for 2 or 3 children, the full distribution is strongly overdispersed relative to the Poisson distribution. The discrete Weibull model was used to model how the planned fertility depends on covariates, and was shown to perform well compared to competing approaches.

Finally, Peter Neal from Lancaster University discussed model selection for time series of count data. A variety of time series models have been proposed for count data including integer-valued autoregressive models, autoregressive Poisson models, in which the Poisson mean is proportional to the exponential of a standard autoregressive process, and an integer version of the GARCH model. Peter discussed discrimination between these three models in a Bayesian framework, using the marginal likelihood, showing that efficient calculation was possible using a combination of importance sampling, MCMC and a particle filter algorithm. Two examples, one from epidemiology and ecology, illustrated the effectiveness of this approach in choosing clearly between the models. For monthly polio counts from the USA, the autoregressive Poisson model was most effective, whereas the best model for a 50-year series of annual wolf counts, from Isle Royale in Lake Superior, was the INGARCH model.

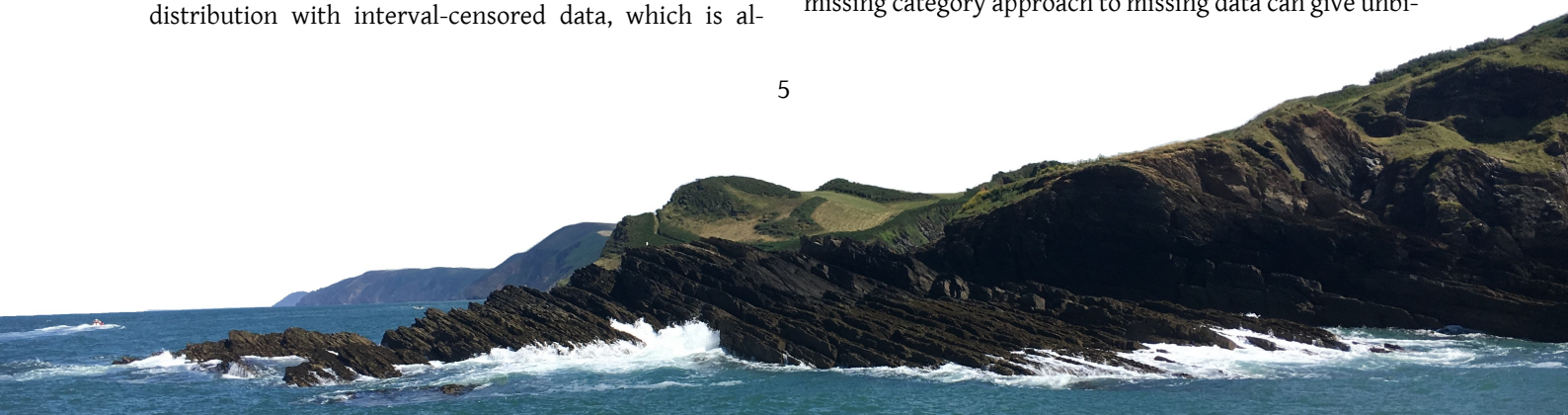
# Meeting report: 'Statistical challenges in utilising Electronic Health Records for medical research' (26 September)

Michael Sweeting and Elizabeth Williamson

On a beautiful September day, five speakers and a number of enthusiastic BIR members gathered together in the Hardy Room at the London Mathematical Society, to discuss the statistical challenges in utilising Electronic Health Records (EHR) for medical research.

Elizabeth Williamson kicked the meeting off with an overview of some of the challenges posed by missing data, in ways that are sometimes quite specific to the EHR context. Elizabeth gave an example of situations where a missing category approach to missing data can give unbi-





ased estimates of treatment effects, namely when the observed data available to the researcher is the same as the data available to the decision maker that provides treatment. After a lively discussion of this topic, Harvey Goldstein, from the University of Bristol, gave an illuminating talk on linkage matching errors and quantifying uncertainty in subsequent models fitted in the linked data, focusing on approaches which view linkage error as a missing data problem, and turning to the well-developed literature of multiple imputation to propose a number of novel solutions to this problem.

John Tazare, from the London School of Hygiene and Tropical Medicine, presented the high dimensional propensity score (hdPS), developed originally in US health claims data, and discussed context-specific methodological challenges in applying the algorithm to the setting of UK Electronic Health Records. John presented an example of using the hdPS for a study investigating how proton pump inhibitors (PPI) interact with a clopidogrel antiplatelet effect in patients with myocardial ischaemia, and showed how the hdPS identified a key confounder, prior PPI use, that had not been accounted for in a previous regression analysis.

*Presenters at the EHR meeting. From left to right: Harvey Goldstein, Elizabeth Williamson, John Tazare, Peter Diggle, Angela Wood*

Angela Wood, from the University of Cambridge, then gave a clear and informative illustration of the use of landmark prognostic models to predict cardiovascular disease risk in electronic health records, while simultaneously tackling issues of missing data and repeated risk factor measurements taken over time through the use of multivariate mixed models. Angela showed how these 2-stage landmark models can be used to dynamically update 10-year CVD risk prediction as the individual ages utilising all available historical risk factor data from their EHR.

Finally, Peter Diggle, from Lancaster University, wrapped the meeting up with a discussion of spatial health surveillance using routinely recorded data, highlighting some of the difficulties in doing so in real time. This prompted discussions of national and international attitudes towards the use of routinely collected data, and the line to be drawn between privacy and security versus the health benefits that might arise from research using the data.

Overall, the meeting was well attended, prompted lively discussion, and presented a range of practical and methodological challenges in this area.

# The Young Biometrician Award 2019

Rachel McCrea

The British and Irish Region of the International Biometric Society, jointly with the Fisher Memorial Trust, award a prize every two years for young biometricians (no more than 5 years since completing full-time education), who are members of the British and Irish Region of the International Biometric Society. The award will recognise the research of one paper published, or accepted for publication, in a refereed journal. This award comprises a diploma and a prize of £1000. The rules are listed on the website (https://biometricsociety.org.uk/award). Nominations for the 2019 award close on 28th February 2019. Nominations should be sent before this date to Rachel McCrea (R.S.McCrea@kent.ac.uk).

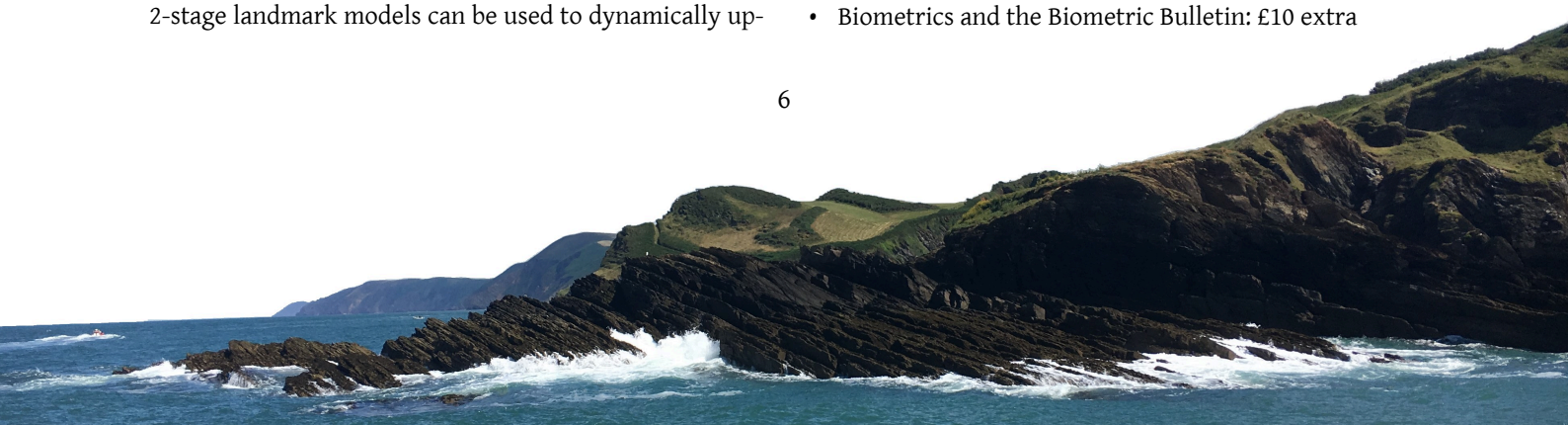
# British and Irish Region, 2019 Subscriptions

Lisa McFetridge

Your membership of the International Biometric Society, British and Irish Region is now due for renewal. Regrettably, we need to raise subscription fees due to changes in the £/$ exchange rates and increases in our meeting costs.
The fees for 2019 are now:

- Full Member: £55
- Retired Member: £30
- Biometrics and the Biometric Bulletin: £10 extra





- JABES and the Biometric Bulletin: £10 extra
- JABES, Biometrics and the Biometric Bulletin: £20 extra
- Student Member: Free

In addition to subscription fees, a voluntary levy has been introduced which members can opt-in to when renewing their membership subscription. One of our largest expenditures is supporting travel bursaries to biometricians from developing countries to attend the IBC and to co-fund (along with the Fisher Memorial Trust) travel bursaries for young biometricians to attend the IBC and the Channel Network Conference. This voluntary levy (£5 or £10) will help cover these sponsorship items.

If you are a full or retired Member, there are several ways that you can pay for your membership for next year.

- Standing order: To set up a standing order, please contact Lisa McFetridge (L.McFetridge@qub.ac.uk)
- Paypal: Go to https://biometricsociety.org.uk/amember/signup to pay your membership fees. Please note you do not in fact need a PayPal account — just a debit or credit card.
- Cheque: If you pay by cheque, please send your form and cheque to Lisa McFetridge (address and form at: http://bir.biometricsociety.org/userfiles/file/Membership_renewal_form_2019.doc).

If you pay by standing order, please check the details above and ensure the amount you pay reflects the new rates; we stress that only you can do this, the Region has no control over members' standing orders.

# Obituary: David John Finney

Robert Curnow

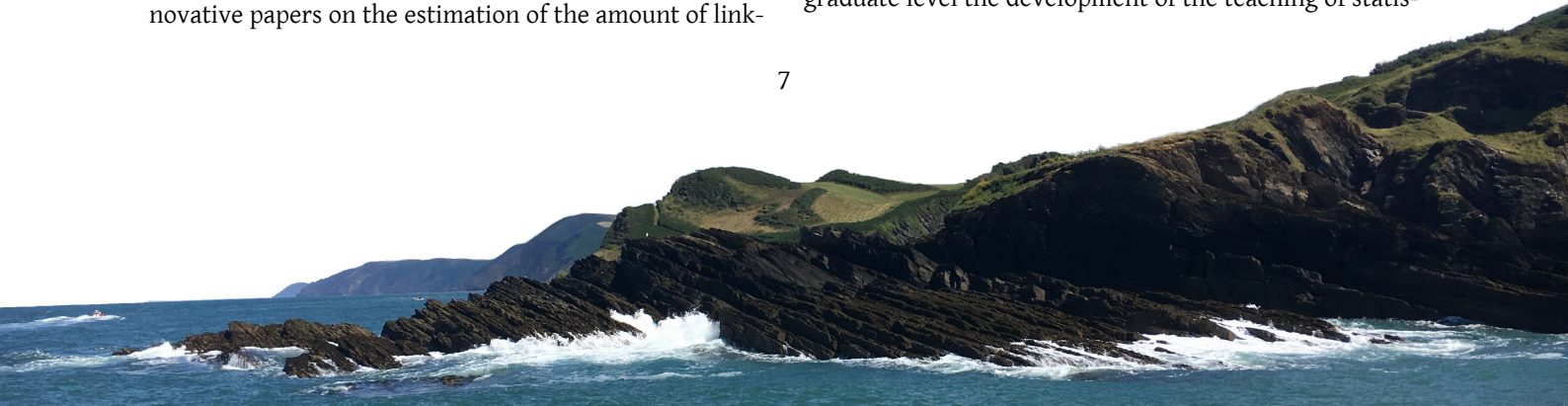
David Finney died on November 12 2018 at the age of 101 after a short stay in a care home in Edinburgh.

David was born in Warrington on January 3, 1917. He was educated at Lymm Grammar School before transferring to Manchester Grammar School. He was then awarded a scholarship to Clare College, Cambridge to study Mathematics. David published his first paper, in Biometrika, while still an undergraduate. Following a postgraduate year studying Statistics at Cambridge with John Wishart, David won a Ministry of Agriculture scholarship to work with Ronald Fisher publishing a number of innovative papers on the estimation of the amount of linkage between alleles in human genetic data. Just before the Second World War David moved to the Rothamsted Experimental Station to work with Ronald Fisher and Frank Yates. At Rothamsted he developed his extraordinary abilities to work with scientists in many disciplines always striving to understand the objectives of their research and often questioning the research workers approach and thereby changing its direction. It was these abilities that he later encouraged his junior staff o develop. At Rothamsted David's research was principally on sampling, experimental design and bioassay. In particular he proposed and developed the idea of fractionally replicated designs.

In 1945 David moved to a lectureship in the Design and Analysis of Scientific Experiments at Oxford University and set up the first postgraduate Diploma in Statistics in the UK. A preliminary Certificate year was made available to non-mathematicians who had some numerical skills. In 1949 David taught at a Summer School organised at Chapel Hill by Gertrude Cox. It was travelling back to the UK on the New Amsterdam that he met his future wife Betty Connolly. David spent 1952 in India on behalf of the United Nations Food and Agricultural Organisation working with the Indian group equivalent to the Statistics Group at Rothamsted. At this time he published two very influential books, one on Probit Analysis and the other on Statistical Methods in Bioassay. A pirate Russian edition of Statistical Methods in Bioassay described David as "of the school of that well-known bourgeois statistician, R.A. Fisher"! David developed important methods for analysing data from the new types of radioimmunoassay experiments. David at this time was also involved in the development of computer packages for data analysis but for many years still made good use of his Curta, the first portable mechanical calculator. I still have mine and treasure its elegance and simplicity.

On return from India David moved to a Readership at Aberdeen University to establish a Department of Statistics and the Agricultural Research Council Unit of Statistics for Scotland. The Unit provided advice, teaching and some data analysis to agriculture institutes and colleges throughout Scotland. Michael Sampford and Andrew Rutherford moved to Aberdeen with David and ran a number of national surveys including surveys to investigate fertilizer use and the level of Strontium 90 in the food chain following the accident at the Sellafield nuclear power station. The Department and Unit taught statistics at undergraduate and postgraduate level. At undergraduate level the development of the teaching of statis-





tics was hampered by the somewhat condescending attitude of the Department of Mathematics towards statistics as a respectable and challenging subject in its own right. David's own research interests at this time were on selection strategies to find the best variety or drug with an emphasis on maximising the worth of the eventual choice rather than the achievement of arbitrary levels of statistical significance. This resulted in increasing the number of varieties or drugs to be tested at the expense of unnecessary numbers of replicates. In 1962-3 David spent a sabbatical year with Bill Cochran at Harvard. At about this time and following the thalidomide tragedy, David became involved in devising the Yellow Card surveillance scheme that is still used today to report and track reactions to drugs. In 1966 David moved to a Chair in Statistics at Edinburgh University to establish a Department of Statistics. The ARC Unit of Statistics moved with him.

Over a long period of time David contributed much to statistical and biometrical societies and to public life in general. He was President of the International Biometric Society (1964-5); President of the Royal Statistical Society (1973-4) and a member of the FAO Statistics Advisory Committee in 1967 and its Chairman in 1975. He was a founding member of the Adverse Reactions Sub-Committee of the UK Committee on the Safety of Medicines. In 1966 David became a member of the Flowers Committee allocating resources for computing among universities and the research councils. He served as Chairman from 1970-1974, a crucial period in the by then rapid expansion in the capabilities of computing in statistics and so many other subjects. In 1955 David was elected a Fellow of the Royal Society and the Royal Society of Edinburgh and awarded a CBE in 1978. He received four Honorary Doctorates and Honorary Fellowship or Honorary Life Membership of the International Biometric, the Eugenics and the Adolphe Quetelet Societies. In 1981 David was a founding member of the World Cultural Council.

In addition to his publications and public service, David left a great legacy through the example and leadership provided to his junior staff and to researchers in many areas of research. Many of us benefited from his clarity of thought and ability to convey ideas in written form. David was very impatient with imprecise thinking and written expressions. This resulted in frequent letters to journals and societies insisting on exactitude at all times. He threatened to resign from the International Biometric Society because they neglected to include the necessary umlauts in their Directory of Fellows. He had an extraordinary ability to summarise the meaning of large tables of data and to spot anomalies in the data. He supervised very few research students having doubts about the relevance of Ph.Ds based on a narrow specialised area. His allegiance and respect for the pioneering work of Sir Ronald Fisher made him unwilling to discuss with colleagues the controversial subjects of fiducial probability and the applications of Bayesian methods in data analysis.

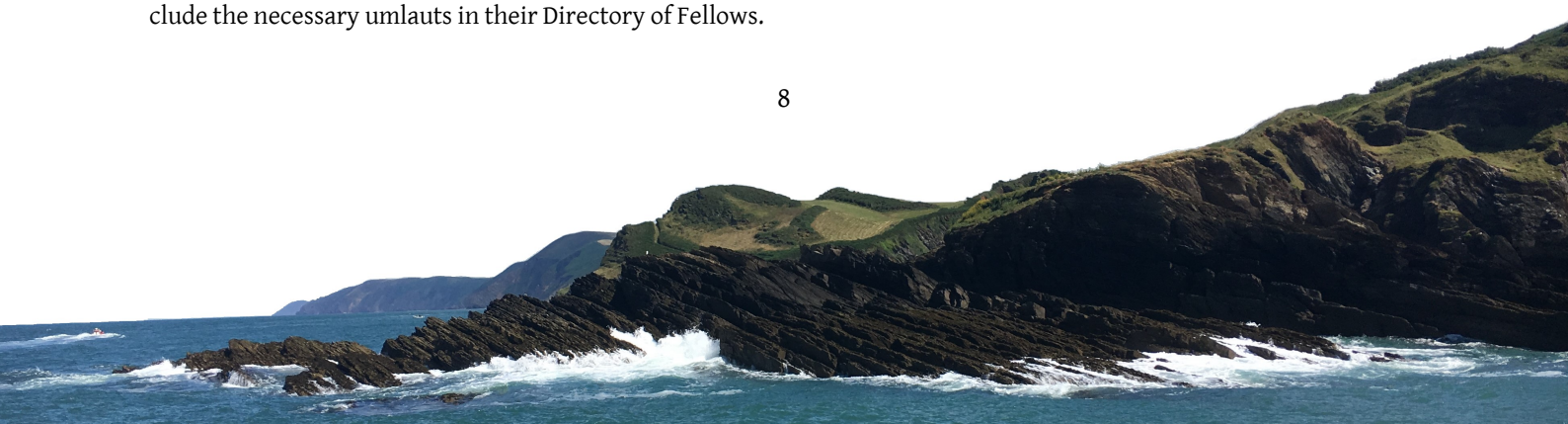
*David Finney at the David Finney centenary lecture.*

David's interests outside work included travel, music and playing bridge. His family and church life were very important to him. The long illness and early death of Betty was a devastating blow for him. At the age of 99 he sent me a very understanding letter following the death of my wife. He is survived by three children, Deborah, Robert and Katharine, and eight grandchildren.

David will be remembered with respect and affection by many colleagues and friends, particularly by those of us fortunate to have started our careers under his guidance.

Secretary of BIR 1949-52
President of BIR 1956-57
President of IBS 1964-65





# 7th Channel Network Conference

## 10th – 12th July 2019

## Rothamsted Research, UK

*Organised by the Belgian, French, British and Irish, and Netherlands Regions of the International Biometric Society*

This biennial conference aims at gathering statisticians, from North-west Europe and beyond, to discuss the newest statistical methodology for applications to biological and biomedical data. It is a 3-day conference including short courses, invited and contributed sessions.

In 2019 the 7th conference in the series will be hosted by the British and Irish Region at Rothamsted Research, the world's oldest agricultural research institute, as part of the celebrations of the first 100 years of statistical research and application at the institute.

We are proud to announce that Per Kragh Andersen (University of Copenhagen) will be the Opening Keynote Speaker, on survival/event history analysis.

The conference will also include three Invited Sessions on:

- Intensive Longitudinal Data
- Post-selection Inference in Regression
- Complex Survival Data

2019 marks the centenary of R.A. Fisher's appointment as the first statistician at Rothamsted, and to celebrate this, the final day of the conference will include the 39th Fisher Memorial Lecture, to be given by Brian Cullis and Alison Smith (University of Wollongong, Australia), and a Special Session on "The Past, Present and Future of Agricultural Statistics".

Three half-day short-courses will precede the conference on Wednesday 10th July:

- Extended mixed effects regression modelling (Michael Crowther)
- Investigating spatial heterogeneity with geographically weighted models (Paul Harris & Chris Brunsdon
- Design of multifactor experiments in biological research (Steven Gilmour)

The call for contributed abstracts, for both oral and poster presentations, is now open, through the online system at https://biometricsociety.org.uk/events/cnc2019. As for all IBS conferences, abstracts are welcome across the wide range of biological and biomedical application areas pursued by society members, and associated with the diverse array of methodological topics required to address the challenges that these application areas bring, and not just associated with the invited programme topics. A list of common topics is provided within the online abstract submission system.

The deadline for abstract submission is 15th March 2019, and contributors will be notified in early May, with Early Bird Registration closing on 31st May.

We look forward to seeing you at Rothamsted for this exciting conference next July.

Andrew Mead
(Chair, Local Organising Committee / Head of Statistics, Rothamsted Research)

Hélène Jacqmin-Gadda
(Chair, Scientific Programme Committee / Bordeaux Population Health Inserm Research Center)