



## British & Irish Region Newsletter — October 2010



A lovely day at the Royal Botanic Garden, Edinburgh

### Biometrics Summer meeting

*Chris Glasbey writes*— The Society held its annual Summer Meeting on a sunny day, Friday, June 4, at the Royal Botanic Garden Edinburgh, with about 20 attendees. Lunch was followed by a tour of the John Hope Gateway, which is a recently opened biodiversity and information centre, the Garden and Herbarium, led by Max Coleman, Science Communicator at RBGE. One highlight was the rare flowering after 40 years of an *Agave mitis*. Another was seeing a *Banksia* specimen in the Herbarium, collected by Joseph Banks in 1770 in New Holland (now Australia), while on the Endeavour with Captain James Cook. Also in the Herbarium we saw some of Charles Darwin's specimens from his Beagle voyage, thus providing a nice link back to last year's Summer Meeting at Down House, Darwin's home. For the talks that followed, at the interface between biometrics and botany, we were joined by several RBGE scientists. Steve Buckland (St Andrews) showed how line transect methods could be adapted for plant surveys. Antje Ahrends (RBGE) analysed waves of forest degradation and biodiversity loss spreading from Dar es Salaam, Tanzania. Frank Dondelinger (BioSS) showed how a single network inference methodology could be applied in radically different applications in ecology and molecular biology. Finally, Christopher Ellis (RBGE) analysed historical biodiversity loss during the UK's 19th century industrialisation, using lichen samples collected from old timber in buildings.

### IBS-BIR and Fisher Memorial Trust Prize

Byron Morgan

We are delighted to announce this new award of the British and Irish Region of the International Biometric Society and the Fisher Memorial Trust. The purpose of the award is to recognise and encourage good biometry by career-young biometricians in the British and Irish Region. All biometricians not more than 5 years (or

full time equivalent) post education are eligible, including students. The award comprises a diploma and £1000.

The award will normally be given every two years and seeks to recognise the research of one paper published, or accepted for publication, in a refereed journal. Submissions must be (continued on page 2)

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### President's corner



Birdwatching in Dunedin with Jean-Dominique Lebreton

*Byron Morgan writes*:— David Elston, who chaired the last session of talks at the Summer meeting (above), brought the meeting to a close by observing that the meeting had successfully combined presentations by scientists as well as by statisticians. This attractive aspect, that has featured in Regional meetings in the past, was particularly good in the Royal Botanic Garden meeting. Elsewhere in the Newsletter are details of the joint meeting with the Wales and Ireland Genetic Epidemiology Group, held in Dublin in September. The Annual General Meeting will take place on November 26th, and will be followed by the President's address and talks in the area of capture-recapture. This session will be held jointly with the Young Statisticians of the Royal Statistical Society. The new Regional Prize, instituted in collaboration with the Fisher Memorial Trust, is an exciting development which seeks to recognise and encourage good biometry by career-young biometricians. Another recent major event in

the Region was the International Statistical Ecology Conference, which was held in the University of Kent in July; a report on the meeting is given in this Newsletter. Especially encouraging recent news is the increase in the number of members of the Region.

NEXT MEETING: FRIDAY 26TH NOVEMBER, 2010, ROTHAMSTED CONFERENCE HALL

# Capture recapture: developments and applications

James Carpenter

This meeting, joint with the Young Statisticians Section of the Royal Statistical Society, will include a two-hour morning tutorial on capture-recapture, the Regional AGM and Byron Morgan's presidential address.

## Programme

10.00am: Tutorial registration and coffee

10.30am: Tutorial *Introduction to capture-recapture methods and their application*, Rachel McCrea and Byron Morgan (University of Kent)

12.30pm: Sandwich lunch

1.20-1.45pm: Annual General Meeting

1.45pm: IBS-BIR Presidential address: *Of mice and men: recent developments in capture-recapture models*, Byron Morgan (University of Kent)

2:30pm: *Boosting qualifies capture-recapture methods for estimating the comprehensiveness of literature searches for systematic reviews*, Gerta Rücker (University of Freiburg)

3:00pm: Afternoon tea

3.20pm: *Capture-recapture inference under structured heterogeneity*, Dankmar Böhning (University of Reading)

3.50pm: *Bayesian capture-recapture analyses using a state-space framework*, Ruth King (University of St Andrews)

4.20pm: Invited discussant: Bill Browne (University of Bristol), followed by open discussion.

5.00pm: Close

Full details, including abstracts and short biographies of the speakers, are available at <http://www.britishandirish.tibs.org/live/>

## Cost

- BIR members: tutorial, lunch and afternoon meeting £10; Lunch and afternoon meeting £10; afternoon meeting only: free.
- BIR student members: tutorial, lunch and afternoon meeting £5; Lunch and afternoon meeting £5; afternoon meeting only: free.
- Non-members: tutorial, lunch and afternoon meeting £55; Lunch and afternoon meeting £45; afternoon meeting only £35.

Non-members are encouraged to join the society (<http://www.britishandirish.tibs.org/live/>) to take immediate advantage of the members' registration fee.

## To register

Email [sue.welham@bbsrc.ac.uk](mailto:sue.welham@bbsrc.ac.uk) with the subject header **REGISTRATION, before Nov 15th**, indicating whether you are a member and which parts of the day you wish to register for. Sue will reply to confirm the fee and the address for posting cheques, which should be made out to the *Biometric Society*.

## How to get there

Directions to Rothamsted conference hall are at <http://www.rothamsted.bbsrc.ac.uk/Research/Centres/Content.php?Section=AboutUs&Page=Location> ■

## New regional prize

Byron Morgan

(continued from page 1) in English and contribute to the development of the biological sciences, as described in article 4.1 of the constitution of the International Biometric Society. In the case of co-authored papers, they will have to be accompanied by a comprehensive statement of the contributions of each of the different authors to the work.

The prize-winning piece of work will be selected by a

panel of judges, appointed for that purpose by the Regional committee. Co-authors of submitted work will not be eligible as judges. The winner will present a talk on the work at a Regional meeting. Details of the nomination process will be announced at the AGM in November. ■

## Advances in Bayesian biostatistics

Sara Geneletti

I went to the International Society of Bayesian Analysis/Valencia conference in Benidorm Spain in May. This large conference, with over 500 participants, showcases the breadth of Bayesian methodologies and applications. There were a number of sessions and hundreds of posters devoted to applications in biostatistics and bioinformatics. Nonparametric methods were particularly prominent and were applied amongst others to the molecular characterization of cancer (C. Yau & C. Holmes) and to the identification of metabolites in NMR spectra (W. Astle *et al*). I was interested in talks on bacterial gene regulation (D. Wilkinson) and the evolution of HIV to escape current

medical treatments (S. Jensen). Both involved lots of computation and often mind-bogglingly complex models based on biological mechanisms. I particularly enjoyed the talk by David Madigan of Columbia University on pharmacovigilance — monitoring the side-effects of medication after it has been approved and is let loose in the population. The talk discussed the current methods to identify side effects — the spontaneous reporting system — and its limitations. Prof. Madigan concluded by encouraging anyone interested to get involved as there was plenty of available data and interesting methodological challenges. ■

## Report on the International Statistical Ecology Conference: 6-9 July, University of Kent

Byron Morgan



Byron Morgan, Julia Goodfellow, Bob May and Steve Buckland enjoy the sunshine in Canterbury (photo Spencer Scott)

Over 170 participants attended the second International Statistical Ecology Conference held at the University of Kent, Canterbury in July, organised by members of the National Centre for Statistical Ecology. They were welcomed by the University Vice Chancellor, Professor Dame

Julia Goodfellow, past Chief Executive of the BBSRC. The meeting was opened by Lord May, who spoke on

Statistics, networks and banking systems. There followed over 100 contributed talks and posters given by presenters from more than 20 countries. Topics covered by invited speakers included fish stock assessment, occupancy models, monitoring changes in species distributions, and modelling evolution by stochastic differential equations. There were four workshops before the meeting, on species occupancy, spatially-explicit capture-recapture, open-population capture-recapture and stopover duration models, and AD model builder. Full details are available at [www.ncse.org.uk/isec2010](http://www.ncse.org.uk/isec2010). Those attending the meeting dinner were entertained by Morris dancing, and the after-dinner speaker was Jeremy Greenwood, past Director of the British Trust for Ornithology. The next International Statistical Ecology meeting will take place in Norway, 4-6 July, 2012. ■

### MEETING REPORT

## Joint BIR Meeting with Wales and Ireland Genetic Epidemiology Group, 6th September 2010, Trinity College Dublin

Ricardo Segurado (WIGEG) and John Hinde(BIR)

Last month the BIR held a joint meeting with the Wales-Ireland Genetic Epidemiology Group (WIGEG) at Trinity College Dublin. With a speaker from each of the UK, USA, Germany, and Ireland there was a good interna-

tional representation. The meeting began with Professor John Whittaker (GlaxoSmithKline and London School of Hygiene and Tropical Medicine), who spoke about some results of his investigations of genetic factors affecting adverse drug response.

The Irish were represented by Prof. Cathal Seoighe (NUI Galway), who spoke about a phylogenetic Hidden Markov Model for the prediction of HIV epitopes. Dr Daniel Falush (Max Planck Institute of Evolutionary An-

thropology, Leipzig) gave a fascinating talk on the detection of genetic structure across a range of worldwide populations. Last but not least, Prof. Kathleen Merikangas (National Institutes of Health) spoke about her findings in a meta-analysis of Gene Environment interaction, with an overview of future priorities and guidelines for the field.

The audience of over 50 people was similarly diverse, including statisticians, epidemiologists and bioinformaticians from predominately Ireland and Wales.

Ricardo Segurado (WIGEG) & John Hinde (BIR) ■

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## NEWS OF THE INTERNATIONAL SOCIETY

# Update on IBS governance changes

Andrew Mead, IBS Vice-president

Following discussions initiated at the IBC in Dublin in 2008, and an 18-month development and consultation process, the International Council of the IBS recently approved a major revision of the governance structure for our society. Members are probably aware that for the first 60 years or so of the existence of the society, the governing body has been the International Council, with much of the leadership delegated to the Executive Committee (comprising President, Vice-President, Treasurer, Secretary, and also, more recently, the Editorial and Educational Representatives).

The bylaws governing the composition of the International Council required Council members to be elected to represent each of the Regions of the society, with the total number of Council members being approximately twice the total number of Regions. While this was an appropriate structure when the society was first formed in 1947, with relatively few Regions, in recent years the Council has grown to be a body that many consider is too large to continue to act as the governing body of the society, often just 'rubber-stamping' decisions made by the Executive Committee. This raised concerns that important decisions within the society were not being subjected to the necessary scrutiny by a sufficiently wide group of members. In addition, the society now has a number of National Groups and Networks who are not directly represented by the existing membership of the International Council. Another issue was that many members did not feel able to participate fully in the bi-annual election of Council members, because they did not know enough about the nominees from outside of their own region.

The Executive Committee review of the governance structure, led by Tom Louis and myself, considered these and a number of other issues, in attempting to identify a new structure that would be relevant and appropriate to take the society forward into the 21st century. The new governance structure that has been approved by the International Council combines the governance and leadership of the society in a new Executive Board, comprising three officers (President, Vice-President, and a combined Secretary/Treasurer, as many of the roles previously played by the Treasurer are now performed by the International

Business Office) plus eight Board Members. All members of this new Executive Board will in future be elected by the full membership of the society, with more complete CVs provided to enable members to cast their votes appropriately. There will also be some restrictions on the geographical locations of Board Members to ensure representation of the wider society—but note that these Board members will not be representing their Region but the wider membership of the society. One of the responsibilities of Board Members will be to liaise with each of the IBS Standing Committees, encouraging the development of new initiatives and aiding discussion of priorities for the society within different areas of activity.

Supporting this new Executive Board will be a Representative Council including representatives of each of the geographical structures of the society (both Regions and National Groups), with the number of representatives being based on the number of members of each Region or National Group. This will result in a larger body than the current Council, but one that is also more representative, and directly represents the different geographical components of the society. While no longer directly responsible for the governance of the society, the Representative Council will still be consulted on a wide range of key issues for the development of the society (a revision of the IBS bylaws is also necessary, in which these key issues will be identified).

As one of the larger Regions, the British and Irish Region will currently be entitled to elect or appoint 3 members to the Representative Council, with these representatives being elected or appointed directly by the membership of the Region they will be representing—the Regional Committee has just been asked to start the process of identifying their representatives so that the new Representative Council is ready to operate from the start of 2011. The Representative Council will elect its own chairperson, and also be responsible for forming a Nominations Sub-Committee to be responsible for identifying potential nominees to be elected to the Executive Board (both Officers and Board Members). Most members of the Representative Council will also be involved in one of the IBS Standing Committees, with all future appointments

of Standing Committee chairpersons being from the membership of the Representative Council.

The transition from the current governance structure to this new governance structure has just started, and it is anticipated that the transition will not be completed until the end of June 2011 (a transition timetable has just been circulated to all Regional and National Group officers). During that time you should have the opportunity to participate in the election of BIR members to join the

Representative Council, and in the election of the initial 8 members of the Executive Board (the three Officers will be confirmed before the end of 2010 under the current governance structure). I encourage you to participate in these activities, and also consider putting yourself forward to serve the society as a member of one of the Standing Committees (additional members will be appointed from outside the Representative Council), as a Representative Council member for the BIR, or as a member of the Executive Board. ■

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#### NOTICE OF AGM OF BRITISH AND IRISH REGION OF THE BIOMETRIC SOCIETY

## Committee Nominations

James Carpenter

The AGM will take place at 1.15pm on Friday 26th November, at Rothamsted Conference Hall, Rothamsted Research, Harpenden, Hertfordshire, AL5 2JQ (during the lunchbreak of the 1-day meeting on capture-recapture methods, reported above). Besides receiving annual reports from the Secretary, Membership Secretary and Treasurer, the main item of business is the committee elections. The Secretary (James Carpenter), Treasurer (Peter Rigsby) and the membership secretary (Diana Cole) are all eligible for re-election and happy to continue in office.

In addition, Prof. Peter Lane and Dr. Alistair Murray come to the end of their 3 year terms this November.

Thanks to them for their valuable contribution to the Society. The committee are pleased to nominate Dr Rachel McCrea (University of Kent) and Dr Vincent Plagnol (University College London) for election at the AGM.

However, any two members of the Region are very welcome to make additional nominations. To be valid, such nominations shall (a) be in writing, (b) reach the Secretary (James Carpenter, Department of Medical Statistics, London School of Hygiene & Tropical Medicine, Keppel Street, London WC1E 7HT) before Friday 29th October and (c) have the consent of the person or persons nominated. ■

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## Bursaries for IBC 2010

James Carpenter

As in the past, through a combination of our own funds and those of the Fisher Memorial Trust, the Region was able to advertise bursaries to attend the IBC. Two independent reviewers ranked the applications and I am delighted to announce these were awarded as follows: Mouna Akacha (University of Warwick) £750; Rachel McCrea (University of Kent) £750; Beth Norris (University

of Kent) £750; Rhian Daniel (London School of Hygiene & Tropical Medicine) £500; Gurutzeta Guillera (University of Kent) £500; José Lahoz (University of Kent) £500; Michelle Stanton (University of Lancaster) £500, and Benilton Carvalho (University of Cambridge) £250. Congratulations and best wishes for an enjoyable and stimulating conference! ■

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#### OBITUARY

## John Ashworth Nelder FRS 8 October 1924 — 7 August 2010

Roger Payne (Rothamsted and VSN International) and Mike Kenward (London School of Hygiene and Tropical Medicine)

John Nelder died on Saturday 7th August 2010 in Luton & Dunstable Hospital UK, where he was recovering

from a fall. John was very active even at the age of 85, and retained his strong interest in statistics. Just a month previously he had hosted a lunch for Youngjo Lee, Yudi Pawitan, James Roger and ourselves with much challenging statistical discussion. A memorial meeting for John was held at the Royal Society in London on 9th October 2010, with presentations on his statistical work and on his other great interests, music and ornithology.

John was born on 8th October 1924 in Dulverton, Somerset, UK. He was educated at Blundell's School and at Sidney Sussex College, Cambridge where he read Mathematics (interrupted by war service in the RAF) from 1942-8, and then took the Diploma in Mathematical Statistics. Most of John's formal career was spent as a statistician in the UK Agricultural Research Service. His first job, from October 1949, was at the newly-set-up Vegetable Research Station, Wellesbourne UK (NVRs). Then, in 1968, he became Head of the Statistics Department at Rothamsted, and continued there until his first retirement in 1984. The role of statistician there was very conducive for John, not only because of his strong interests in biology (and especially ornithology), but also because it allowed him to display his outstanding skill of developing new statistical theory to solve real biological problems.



At NVRs he developed, with Roger Mead, the now very widely-used adaptive simplex optimization algorithm (see Nelder & Mead 1965, *Computer Journal*). It was also at NVRs that John developed the theory of general balance to provide a unifying framework for the wide range of designs that are needed in agricultural research (see Nelder, 1965, *Proceedings of the Royal Society, Series A*).

Then, at Rothamsted, he developed the theory of generalized linear models with the late Robert Wedderburn, to overcome the problems of analysing response variables like counts and proportions that do not come from normal distributions; see the citation classic Nelder & Wedderburn (1972, *JRSSA*) or the book by McCullagh & Nelder (1989).

Throughout his career John emphasized an important aspect of statistical research, namely that new theory should be implemented in widely-distributed statistical

software to enable it to become widely used in practice. The initial aim for John's first statistical program, GenStat, was to provide analysis of variance for generally balanced designs. The underlying ideas took shape in 1965-1966 when John visited the Waite Institute of the University of Adelaide to work with Graham Wilkinson. More intensive development began in 1968 when John joined Rothamsted, and the wider statistical and computing expertise available at Rothamsted allowed him to develop GenStat as a truly general-purpose statistical system, and which is in widespread use today. He was also the driving force behind the development of GLIM, which first appeared in 1974, and later the GLIMPSE system which provided advice on data validation, data exploration and model selection, and was one of the first statistical expert systems to be made available commercially.

John retired from Rothamsted in 1984 at the age of 60, but continued his research at Imperial College (of Science, Technology, & Medicine, London) where, since 1972, he had been a Visiting Professor. He retired from Imperial College in October 2009. While at Imperial College he collaborated with Youngjo Lee of Seoul National University in South Korea in the development of the theory of hierarchical likelihood, and the associated extension of generalized linear models to become hierarchical generalized linear models, containing additional random effects from normal, gamma, inverse gamma or beta-binomial distributions. See for example the papers by Lee & Nelder (1996, *JRSSB*; 2001, *Biometrika*; 2006 *Appl. Statist.*) or the book by Lee, Nelder & Pawitan (2006).

John received many honours during his career. He was President of the International Biometric Society from 1978-1979, and was made an Honorary Life Member in 2006. He was President of the Royal Statistical Society from 1985-1986, and was awarded Guy Medals of the Society in Silver in 1977, and in Gold in 2005. He wrote three books and over 120 papers in statistical and biological journals.

With John's many achievements in statistics, it is important not to forget his other interests. He shared a keen interest in gardening with his wife Mary (nee Hawkes), whom he met and married in 1955 while he was at NVRs; they have a son Jan and a daughter Rosalind. John and Mary were also keen birdwatchers. John combined ornithology with statistics by making a rigorous statistical assessment of the implausibility of the many rarities reported from Hastings during 1892-1930 (the "Hastings Rarities"); this provided convincing evidence for their subsequent rejection (see Nelder, 1962, *British Birds*). Finally he was a very keen musician and a virtuoso piano player, and his musical soirees at his house in Redbourn will be remembered by the attendees with lasting pleasure.

John's contributions to our subject transformed it in several important aspects, and he will be missed greatly by all who knew him. ■

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## In Brief

### Channel Network Conference

The Third Channel Network Conference will take place in Bordeaux in France from 11-13 April 2011. The keynote speaker is Simon Tavaré (University of Cambridge), with invited sessions on evaluation of prediction models with censored data, statistical methods in systems biology and joint modelling of longitudinal and time-to-event data. There will also be preconference short courses on inference in multi-state models from interval-censored data and on producing packages in R. Abstracts for contributed papers can be submitted until 5 January 2011. Further details can be found on the website at <http://www.ibs-channel-bordeaux2011.fr/>

### IBC, Florianopolis, Brazil

Preparations are continuing for the 25th IBC, being hosted in Florianopolis, Brazil from 5-10th December. All who submitted abstracts for oral and poster presentation have now been notified; the full programme is available at <http://www.rbras.org.br/~ibcfloripa2010>. Registration is still open

### Something missing?

If you have news of members or events, please email [James.Carpenter@lshtm.ac.uk](mailto:James.Carpenter@lshtm.ac.uk)

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Production: James Carpenter & Sara Geneletti

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