



Generalized Linear Models 40 years on and AGM 2012

Thursday 29th November 2012

A celebration of 40 years since the publication of Nelder and Wedderburn's paper introducing generalized linear models.

The meeting will also include the 2012 AGM of the BIR and the President's Address.

Location: Fowden Conference Hall, Rothamsted Research, Harpenden.

[Instructions on how to reach Rothamsted](#)

Cost and Registration:

£20 for International Biometric Society-British and Irish region members, £40 for non-members and free for student and retired members

Note that it free for [students to join the Biometric society](#) and it costs £40 to join the Biometric Society as a full member. For this meeting non-members can register and join as a full member for 2013 for a single payment of £60.

Online registration is now closed contact suzanne.clark@rothamsted.ac.uk for late registrations.

Programme

12:30 - 13:15	<p>Lunch available in Rothamsted Restaurant</p> <p>A chance to meet up and have lunch before the AGM and meeting. This will be a pay as you go lunch but it would be useful for the restaurant to have an idea of numbers and so if you wish to take advantage of this please send an email to Suzanne Clark</p>
13:15 - 13:45	<p>BIR AGM</p> <p>Annual General Meeting of the BIR.</p>
13:45 - 14:30	<p>Presidential Address - glms: a Personal Perspective by John Hinde (NUI Galway)</p> <p>The ideas that went together to create generalized linear models had been around for some time, but the power of the 1972 paper by Nelder and Wedderburn was to pull all of these together into a coherent modeling framework. The paper itself is well worth a revisit, with a strong emphasis on applications and teaching. The basic model has now been extended in many different directions and I will consider some topics that have been of particular interest to me, such as overdispersion, random effects, and mixtures. These extensions will be illustrated with a range of real applications.</p>
14:30 - 15:00	<p>Hierarchical Likelihood by Mike Kenward (London School of Hygiene and Tropical Medicine)</p> <p>An obvious and natural generalization of the generalized linear model adds random effects to the linear predictor. John Nelder approached such models not in a conventional way, but through so-called Hierarchical Likelihood; termed an extended likelihood by Yudi Pawitan. For twenty years John explored and developed this idea, especially with his close collaborator, Youngjo Lee. Hierarchical likelihood has proved to be controversial, with many disagreements about its status and use. In this talk I explore the approach from a neutral's perspective.</p>
15:00 - 15:20	<p>Tea & Coffee</p>

From L to N: Nonlinear predictors in Generalized Models by Heather Turner (Independent Consultant)

15:20 -
15:50

There are many situations where it is helpful to replace the linear predictor of a generalized linear model with a nonlinear predictor. In particular, nonlinear predictors can often be used to produce more parsimonious and interpretable models.

Whilst the move from linear to nonlinear predictors can be attractive from a substantive point of view, it does present some technical difficulties. This talk will discuss how these challenges are dealt with in the `gnm` package for R and present a range of applications from the fields of health and agriculture.

All you need is the deviance by Leonhard Held (University of Zurich)

Objective Bayesian model selection in GLMs

15:50 -
16:20

In medical research and elsewhere, variable and model selection in regression is still a common problem. Bayesian model selection based on test statistics (Johnson, 2005, 2008, Hu and Johnson, 2009) is an approach, which eliminates the need to specify proper prior distributions on regression parameters. The method is applicable to generalized linear models and the Cox model using the deviance statistic. In this talk I will review and extend Johnson's methodology and point out connections to shrinkage estimates for prediction. The methodology is then applied in selected biomedical applications.

This is joint work with Daniel Sabanés Bové

16:20 -
16:45

Discussion