richards consulting

The Application of Generalised Linear Models to Annuitant Mortality

A one-day in-house course on the theory and practical application
of GLMs to offices' own experience data

The course will be led by Stephen Richards, BSc, FFA. Stephen is one of the foremost experts on the financial aspects of longevity risk in the UK. He is the author of numerous articles and papers on mortality, and is a regular presenter at actuarial conferences. He is the co-author of *Financial aspects of longevity risk* (SIAS), a paper voted "one of the top five papers every life actuary should know about" at the profession's annual Life Convention.

Stephen has been fitting Generalised Linear Models to mortality data since 1988, and has developed thinking and understanding of the application of survival models. This course condenses his 14 years of research and knowledge on the subject into a single day.

For companies wishing to train three or more people at once, Richards Consulting offers the facility to have this course delivered on a company's own premises at a date of your convenience. You will need to provide a room large enough for all the people you wish trained. The room requirements are as follows:

1. Two flip-charts with pens.
2. A computer terminal for each course attendant.
3. Each computer terminal must have access to R (available free from http://www.r-project.org).

A specimen programme is included overleaf with suggested timings. Any catering will have to be provided for separately.

Cost on application. Remittances should be made electronically in sterling to Bank of Scotland, account number 00712365, sort code 80-22-60 (BIC: BOFSGBS1SDP, IBAN: GB74 BOFS 8022 6000 7123 65).

The contracting counterparty is Stephen Richards Consulting Ltd, a limited-liability company registered in Scotland (SC144342) at 4 Caledonian Place, Edinburgh, EH11 2AS.

Programme

09:00 Registration and introductions (tea and coffee available)

09:30 Refresher course on random variables
- Notation
- Independence
- Distributions: Binomial and Poisson models

10:15 Theory of GLMs
- Model structure
- Main effects
- Interactions
- Interpreting a model

11:00 Tea and coffee

11:15 Actuarial models
- Features of late-life mortality patterns
- Desirable characteristics of a mortality model
- Main actuarial models: Gompertz, Makeham, Perks
- Links between GLMs and actuarial models

12:15 Buffet lunch

13:15 Recap of morning's results

13:30 Logistic regression
- Model structure
- Example fitting in R
- Limitations

15:00 Tea and coffee

15:15 Survival models
- Model structure
- Example fitting in R
- Limitations

16:30 Questions on the day

17:15 Close