



Biostatistics Unit

Workshop on Hierarchical Bayesian Data Analysis in Biostatistics with WinBUGS

The Biostatistics Unit of the South African Medical Research Council is presenting a two and a half day introductory workshop on **Bayesian Hierarchical Models in Biostatistics** to be held at the SAMRC campus in Pretoria from 25 to 27 November 2009.

Statistical inferences based on Bayesian estimation methods are increasingly used to provide solutions to problems that cannot be solved precisely using standard frequentist methods. Bayesian method can be applied in many medical and related fields. This workshop will provide participants with an introduction to the ideas of Bayesian hierarchical modelling together with hands-on experience of running the WinBUGS software, a Bayesian computational tool. This workshop will emphasize practical data analysis, although the essential theory will be explained. Thus, the workshop is aimed at improving knowledge as well as data analysis using Bayesian modeling and estimation. This will encourage a greater uptake of this methodology to solve a large number of health and biomedical problems.

The workshop will (a) focus on basic elements of Bayesian inference; (b) introduce several example data and the use of WinBUGS software; (c) introduce Bayesian computational tools (Markov Chain Monte Carlo methods: the Gibbs Sampler and Metropolis-Hastings algorithms); (d) cover the use of Bayesian hierarchical models in the analysis of epidemiological and biomedical data, for example, longitudinal, spatial and disease mapping data; and (e) perform hands-on experience of data analysis using WinBUGS.

The workshop is intended for researchers in statistics and biostatistics or those involved in quantitative applications in epidemiology, medicine, biological sciences and environmental science. Participants should have good knowledge in basic statistics, including linear and generalised linear regression analysis at the graduate level. Each participant must bring a laptop

with at least Windows XP and the latest version of WinBUGS installed from <http://www.mrc-bsu.cam.ac.uk/bugs/winbugs/contents.shtml>.

The workshop will be facilitated by **Samuel OM Manda PhD**, Senior Specialist Statistician, Biostatistics Unit, SA-Medical Research Council, Pretoria, South Africa.

Applications to attend are invited from interested persons who have the necessary qualifications and statistical experience. A maximum of 25 participants can be accommodated. The workshop will be from 8:30 to 16:30 every day for the first two days, to 12:30 on Friday.

The price per participant is R2500 to be paid in advance. This includes all course materials, teas and lunches and the workshop dinner on Thursday the 26th November 2009. Participants are responsible for their own travel, accommodation and other dinner arrangements.

Enquiries and application to the Biostatistics secretary: Emily Gomes: email: emily.gomes@mrc.ac.za; tel: +27 (0) 12 339 8523 giving at least your name, highest qualification in statistics, the institution you work at and a short (two or three sentences) motivation of why you want to attend the workshop. Please register by mailing the completed form below and approval of payment to the workshop secretariat before the 31st **October, 2009**.

Registration Form

Hierarchical Bayesian Data Analysis in Biostatistics conducting on 25 – 27 November 2009 at the Medical Research Council, Pretoria

Name :
Title :
Institution :
Department :
Mailing Address :
Phone : Fax :
E-mail :

Enclosed, deposit slip or a bank draft/cheque/postal order/local order for the amount of ZAR 2500 payable to South African Medical Research Council; ABSA Bank, Arcadia Branch; Account Number 610720528; Branch Code 334-945.