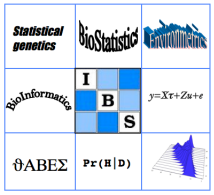

Biometrics by the Blowholes
IBS-AR conference
December 4-8, 2011
Kiama NSW
Australia

Satellite workshops (All rates are in Australian dollars)

Note: all telephone numbers are shown with the area code in parentheses (02) and the local 8-digit number. To call from overseas, see the general information link on the conference sidebar.

Two workshops have been organized pre-conference in Sydney and Wollongong respectively. Earlybird fees apply until Friday October 14, 2011 for both the conference and workshops. After that the fee reverts to the full fee. Late registrations close on Friday November 11, 2011.

Workshop 1 (Pre-conference)

Title: Spatial analysis of public health data: a practical introduction to the analysis of geocoded and areal health data
Date: Friday, December 2, 2011 (9:00am-5:00pm)
Registration desk from 8:15am
Place: Port Jackson Room, Citigate Central Sydney Hotel
Presenter: Professor Montserrat Fuentes (North Carolina State University)
Transport: The hotel is close to Sydney Central Train Station. Participants to make their own way to the venue.
Maximum number of participants: 30 (Thirty)

Fees:	Earlybird	Full
IBS Member	☐ $275	☐ $325
Non-Member	☐ $325	☐ $375

Overview
New methods for recording the locations of health data due to recent advances in Geographical Information Systems (GIS) and Global Positioning Systems (GPS) have permitted new types of disease mapping and spatial modeling of health data, as well as new approaches to support disease prevention and control activities in public health. This has generated considerable interest in statistical modeling for location-referenced (point-level or geostatistical) data and areal (aggregated over regions) data. This course offers an introduction to the methods for modeling and carrying out inference with spatial point-level and areal data. Basic elements such as classical approaches in geostatistics, spatial disease mapping, and Bayesian inference for spatial data will be covered in detail. Each topic will include theory, examples and data analysis along with live interactive computing demonstrations. The course will also detail recent advancements in Bayesian hierarchical models for spatial data using Markov chain Monte Carlo (MCMC) methods.

Specific topics that will be covered include: geostatistical modeling, spatial risk assesment, disease mapping, CAR models for areal data, spatial linear regression, generalized linear models, uncertainty analysis, diagnostics and validation for spatial models, and spatial Bayesian inference.

We will offer a hands-on opportunity to explore the use of WinBUGS, the leading Bayesian software package, as well as several spatial packages in R for spatial geocoded and areal data. The computing demonstrations will encompass exploratory spatial data analysis as well as

estimation of statistical models with practical data sets in public health and the environmental sciences.

The following are useful textbooks for Bayesian statistics and hierarchical models for spatial data analysis:

· Banerjee, S., Carlin, B.P. and Gelfand, A.E. (2004). Hierarchical Modeling and Analysis for Spatial Data. Publisher: CRC/Chapman and Hall.
· Diggle, P.J. and Ribeiro Jr., P.J. (2007). Model-based Geostatistics. Publisher: Springer.
· Waller, L. and Gotway, C. (2004). Applied Spatial Statistics for Public Health Data. Publishers: John Wiley and Sons.
· Carlin, B.P. and Louis, T.A. (2000).Bayes and Empirical Bayes Methods for Data Analysis. Second Edition. Publisher: CRC/Chapman and Hall.
· Diggle, P., Fuentes, M., Gelfand, A.E. and Guttorp, P. (2010). Handbook of Spatial Statistics. Publisher: CRC/Taylor and Francis.
· Gelman, A., Carlin, J.B., Stern, H.S. and Rubin, D.B. (2004). Bayesian Data Analysis. Second Edition. Publisher: CRC/Chapman and Hall.
· Dalgaard, P. (2002). Introductory Statistics with R.
· Faraway, J.J. (2005). Linear Models with R. Publisher: CRC/Chapman and Hall.
· Lee, P. M. (2004). Bayesian Statistics Publisher: Hodder Arnold.
· Venables, W.N., Smith, D.M. and the R Development Core Team (2002). An Introduction to R: Revised and Updated.

The web sites for software:

- WinBUGS or OpenBUGS
- You can download the new registration key for WinBUGS from HERE. NOTE THAT YOU DO NOT REQUIRE ANY REGISTRATION KEY FOR OPENBUGS.
- R.

Last updated November 18, 2011. MF&BC-DB-JT&MD