



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

Satellite workshops/seminars (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, as well as post-conference seminars in Canberra with Dr Emlyn Williams.

Earlybird fees apply til August 31, 2011. After August 31, 2011 the fee reverts to the normal fee.

Workshop 1 (Pre-conference) Ian – to finalise details?

Title: A Practical Introduction to the Analysis of Geocoded Health and Areal Health Data

Date: Friday, December 2, 2011 (9:00am-5:00pm)

Place: ??? Room, Citigate Hotel, Sydney (See Map???)

Presenter: Professor Montserrat Fuentes (North Carolina State University)

Co-author: Professor Sudipto Bannerjee (University of Minnesota)

Fees:	Earlybird	Normal
IBSAR Member	<input type="checkbox"/> \$275	<input type="checkbox"/> \$325
Non-Member	<input type="checkbox"/> \$325	<input type="checkbox"/> \$375

Abstract

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 text books 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.

Workshop 2 (Pre-conference) to be confirmed with Brian!

Title: A modern application of linear mixed models with case studies.

Date: Saturday, December 3, 2011 (9:00am-5:00pm)

Place: Campus Innovation Centre, University of Wollongong (See Map)

Presenter: Professor Brian Cullis (University of Wollongong)

Co-authors: ???

Fees:	Earlybird	Normal
IBSAR Member	<input type="checkbox"/> \$275	<input type="checkbox"/> \$325
Non-Member	<input type="checkbox"/> \$325	<input type="checkbox"/> \$375

Seminar (Post-conference)

Title: ???.

Date: Friday, December 9, 2011

Place: Australian National University, Canberra (See Map)

Presenter: Professor Hans-Peter Piepho (University of Hohenheim)

Contact: Dr Emlyn Williams