

McMASTER UNIVERSITY
GRADUATE PROGRAM IN STATISTICS

STATISTICS SEMINAR

Speaker: Melissa Dobbie
Mathematical and Informational Sciences
Commonwealth Scientific and Industrial Research Organization (CSIRO)
Queensland, Australia

Title: Sparse Sampling: Spatial Design for Aquatic Monitoring

Day: Tuesday, January 29, 2008

Time: 3:30 - 4:30 PM

Place: HH/217 - Deloitte Colloquium Room
(refreshments in HH/216 at 3:00 PM)

SUMMARY

In practice, convenience or representative sampling is often undertaken to make assessments of ecosystem health for a target population. However, a key disadvantage with using these approaches is that the relationship between the sample data and population characteristics is unknown, thus the basis for extrapolation and subsequent inferences is unclear. On the other hand, model-based and probability-based designs might be statistically valid but may not be practical for some aquatic monitoring problems. This talk reviews approaches to spatial sampling design to enable informed decisions to be made about developing both practical and statistically-valid spatial designs for future aquatic monitoring.

REFERENCES

To be announced.

ABOUT THE SPEAKER



After completing undergraduate studies in statistics and mathematics at The University of Queensland, Melissa Dobbie worked at the Australian Bureau of Statistics in Canberra for a year.

In 1995, she joined Australia's Commonwealth Scientific and Industrial Research Organisation (CSIRO) in Canberra as a Biometrician and worked on a variety of interesting scientific problems in ecology, hydrology and plant physiology. In 2001, Melissa was awarded her PhD for research on modelling correlated zero-inflated count data, which she completed under the supervision of Professor Alan Welsh at the Australian National University.

Also in 2001, she took leave from CSIRO and spent a year in Canada on a Teaching Postdoctoral Fellowship at the University of British Columbia in Vancouver. Here she collaborated with Professor Jim Zidek and Dr Nhu Le to fine-tune some software and develop an associated reference manual for forming spatial predictions of air pollution. Melissa also lectured two statistics subjects at UBC during this year.

Since returning to Brisbane in mid-2002, Melissa has been working on some challenging environmental problems, with an emphasis on ecosystem health monitoring. The work has required statistical expertise in all facets of monitoring, but particularly with designing monitoring studies and also some spatial-temporal trend analysis.

Melissa is currently visiting Canada as the 2008 AusCan Scholar, a program initiated by the Statistical Societies of Australia and Canada to promote scientific interaction between the two statistical communities and to provide opportunity for the scholar to enhance their professional development and interact with leading researchers in the country visited.

Further information about Melissa is available from <http://www.csiro.au/people/Melissa.Dobbie.html> and about the AusCan scholarship from http://www.ssc.ca/main/about/auscan_e.html

MORE SEMINAR INFORMATION

Please contact Angelo Canty at 905-525-9140 ext. 27079, email: cantya@mcmaster.ca.