



WyGISc Geospatial Forums – Fall 2009

THEME: STATISTICAL APPLICATIONS

Fridays - 12:00pm - 1:00pm, AG C 316

***** Statistical applications theme-based talks**

9/18: Dr. Kiona Ogle, Assistant Professor, BOTANY

****---Graphical models and Bayesian model in ecology: a meta-analysis application*

This talk will introduce basic concepts of Bayesian statistical modeling. The concepts and methodologies will be illustrated in a meta-analysis application that synthesizes literature information on specific leaf area (an important plant "functional trait") of 305 tree species occurring in the US. Graphical models will be overview as a tool for understanding relationships between different data sources, parameters, and latent processes.

9/25: Mr. Shawn Lanning, Research Scientist, WYGISC

--- Wyoming Tourism - From Retro to Forever West: Incorporating GIS into the new website and for Wyoming Travel and Tourism Personnel

This talk will outline the challenges and methods used for developing a geographic information system database for the Wyoming Travel and Tourism Department. Extensive data and resources exist to highlight tourism activities and events in Wyoming, however the conditions, format, and quality of the data often presents challenges and hinders the use of this data by Wyoming Travel and Tourism. This presentation will address the need for a GIS to integrate the available datasets, the advantages and issues associated with updating this spatial database.

10/02: Mr. Scott Lieske, Research Scientist, WYGISC

****--- Modeling Spatially Precise Costs of Public Service Provision*

Areas diverge from optimal patterns of land use because of information asymmetries and the ability to pass the costs of growth on to the general public. Inefficiencies occur due to average cost user charges which undercharge outlying low-density areas while overcharging interior or high-density areas. The ideal corrective action is to have information on and charge based upon the full marginal costs of providing services to each location. The research presented here utilizes geographic information science to develop and include a spatial index representative of pattern of development in a fiscal model of local government service provision. The inclusion of a spatial index in a fiscal model offers the opportunity to determine the spatially precise costs of development as well as map areas that are and are not fiscally efficient for the provision of public services.

10/09: Dr. Ramesh Sivanpillai, Associate Research Scientist, WYGISC

--- International Charter for Space and Major Disasters: Providing Satellite Data for Humanitarian Aid and Recovery Efforts

The International Charter for Space and Major Disasters is dedicated to providing satellite images for natural and man-made disasters. These images provide valuable information in support of recovery efforts in the affected countries/regions. The Charter was signed into effect on 20th October, 2000 by the French, Canadian and European Space Agencies and has grown over these years to include space agencies from the US, India, Argentina, Japan, UK, and China. The Charter has also established an extensive network of

volunteers in the member space agencies and countries. This talk will provide an overview of the Charter, its mission, and a brief review of its past and present satellite data assistance activities.

10/16: Mr. Thomas Furgeson, Associate Research Scientist, WYSAC;

***--- *Mapping Hathaway Scholarship Access and Outcomes*

The Wyoming legislature has charged the Wyoming Survey and Analysis Center (WYSAC) with the evaluation of the Hathaway Scholarship. They are interested in knowing the extent to which it is improving educational outcomes and creating a better qualified Wyoming workforce. We would like to explore with WYGISC the possibilities for mapping both geographies of access to the scholarship and its impact on the Wyoming labor force.

10/23: Dr. Jeffrey Beck, Assistant Professor, RENEWABLE RESOURCES

*** --- *Applications of Geospatial Technologies in Modeling Wildlife Habitat Quality*

Wildlife habitat quality is defined as the ability of an area to provide the conditions or resources necessary for individuals and populations of wildlife to persist. Consequently, one must link fitness parameters with spatial occurrence models to evaluate habitat quality. I will present examples of large-scale habitat quality evaluations and explore ideas for future applications of geospatial technologies to model wildlife habitat quality.

10/30: Dr. Richard Anderson-Sprecher, Director and Professor, STATISTICS

***--- *Spatial Statistics: an Overview*

Spatial Statistics as a field is multifaceted. Which methods are appropriate for my data? Why should I worry about spatial relationships? Applications of spatial statistics occur in many fields, and examples will be presented to illustrate the use and scope of spatial statistics.

11/6: Ms. Wendy Berelson, Research Scientist, WYGISC

--- *Enterprise GIS at UW: What, Why and How?*

Enterprise GIS provides organization-wide access to geospatial data and applications. The use of Enterprise GIS in university administration facilitates improved efficiencies. The Wyoming Geographic Information Science Center at the University of Wyoming designed and implemented an Enterprise GIS to assist Real Estate Operation and UW administrators access, update and query UW's real property related data. Enterprise deployment within Real Estate Operations has provided for a common infrastructure on which other administrative groups on campus can build their GIS datasets and applications.

11/13: Ms. Caley Gasch Salava, Doctoral Student, RENEWABLE RESOURCES

***--- *Use and limitations of geospatial statistics in soil ecology*

Most soil research utilizes conventional, frequentist statistics to describe trends in soil characteristics; yet, sometimes the variability in soil is also of interest. While geospatial analysis provides valuable information on patterns and trends, it has challenges and constraints. This topic will be explored through a case study where we established and implemented a spatial sampling design in reclaimed and reference soils.

11/18:

GIS DAY EVENTS

For more information, please visit the WyGISC web site at: <http://www.uwyo.edu/wyview>