



# WSS NEWS

October 2006

WASHINGTON  
STATISTICAL  
SOCIETY

## 16<sup>th</sup> Annual Morris Hansen Lecture

Michael F. Goodchild, Professor of Geography (University of California, Santa Barbara) will give the 16th Annual Morris Hansen Lecture on Monday November 6 at 3:30p.m. in the Jefferson Auditorium of the Department of Agriculture's South Building (Independence Avenue SW, between 12th and 14th Street).

Dr. Goodchild will speak on "Statistical Perspectives on Spatial Social Science." Sarah Nusser (Iowa State University) and Linda Pickle (National Cancer Institute) will be the discussants. A reception will follow the lecture. The Hansen Lecture Series is sponsored by the Washington Statistical Society, Westat, and the National Agricultural Statistics Service.

The USDA's South Building is between 12th and 14th Streets at the Smithsonian Metro Stop (Blue Line). Enter through Wing 5 or Wing 7 from Independence Ave. (The handicapped entrance is at 12th & Independence). A photo ID is required.

Please pre-register for this event to help facilitate access to the building. Pre-register on line at <http://www.nass.usda.gov/morrishansen/>

### WSS and Other Seminars

(All events are open to any interested persons)

October

- |          |  |
|----------|--|
| 4 Wed.   | Baseline adjustment by inducing partial ordering when measurements are ordered categories                        |
| 16 Mon.  | Nonprofit employment: Improving estimates with a match of IRS information forms and BLS QCEW                     |
| 18 Wed.  | Moving versus Fixed Sampling Designs for Detecting Airborne Biological Pathogens                                 |
| 20 Fri.  | On Missing Data and Interactions in SNP Association Studies  |
| 24 Tues. | Protecting the Confidentiality of Commodity Flow Survey Tabular Data by Adding Noise to the Underlying Microdata |

November

2 Thurs. Partially Synthetic Data for Disclosure Avoidance: An Application to the American Community Survey Group Quarters Data

6 Mon. Hansen Lecture  
Statistical Perspectives on Spatial Social Science

14 Tues. Working with the American Community Survey: Findings from the National Academies Panel

15 Wed. The Advanced Technology Program: Evaluating a Public-Private Partnership

Also available on the Web at the following URL: <http://www.scs.gmu.edu/~wss/>

## Announcement

### **SIGSTAT Topics for October 2006 – December 2006**

October 18, 2006: The MLAB Mathematical and Statistical Modeling System  
(<http://www.civilized.com>)

MLAB is a tool for mathematical and statistical computation and modeling. It has special competence in fitting models to data, including ordinary-differential-equation (ODE)-defined models. MLAB also has a variety of special functions such as Voronoi diagrams, optimal smoothing splines, weighted moving quantile(non-parametric) curves, and many others. [See [www.civilized.com](http://www.civilized.com) for a preview of MLAB.]

MLAB will be introduced and a variety of examples will be discussed, focusing on fitting parametric models, and on fitting various non-parametric smoothing models to data.

An interesting analysis of synergy/antagonism for the effect of multiple "treatments" will be presented. (This work was inspired by studying the effects of treatments using multiple drugs, but the methodology is more generally applicable.)

Topics will be solicited from the audience. Gary Knott and Daniel Kerner will give the presentation.

November 15, 2006: Using SAS PROC MIXED to Fit Multilevel & Hierarchical Models

This talk will follow the paper, "Using SAS PROC MIXED to Fit Multilevel Models, Hierarchical Models, and Individual Growth Models" by Judith Singer (1998) which can be downloaded from her website, <http://gseweb.harvard.edu/~faculty/singer/>.

In the November meeting we'll use a school effects model, designed for data nested within naturally occurring hierarchies (e.g., students within classes). Charlie Hallahan will be the speaker.

December 20, 2006: Using SAS PROC MIXED to Fit Individual Growth Models

This talk will follow the paper, "Using SAS PROC MIXED to Fit Multilevel Models, Hierarchical Models, and Individual Growth Models" by Judith Singer (1998) which can be downloaded from her website, <http://gseweb.harvard.edu/~faculty/singer/>.

In the December meeting we'll use an individual growth model designed for exploring longitudinal data (on individuals) over time. Charlie Hallahan will be the speaker.

SIGSTAT is the Special Interest Group in Statistics for the CPCUG, the Capital PC User Group, and WINFORMS, the Washington Institute for Operations Research Service and Management Science.

All meetings are in Room S3031, 1800 M St, NW from 12:00 to 1:00. Enter the South Tower & take the elevator to the 3rd floor to check in at the guard's desk.

First-time attendees should contact Charlie Hallahan, 202-694-5051, [hallahan@ers.usda.gov](mailto:hallahan@ers.usda.gov), and leave their name. Directions to the building & many links of statistical interest can be found at the SIGSTAT website, <http://www.cpcug.org/user/sigstat/>.

**Note from the WSS NEWS Editor**

Items for publication in the December issue of the WSS NEWS should be submitted no later than October 31, 2006. E-mail items to Michael Feil at [michael.feil@usda.gov](mailto:michael.feil@usda.gov).

## Program Announcement

- Title:** **Baseline adjustment by inducing partial ordering when measurements are ordered categories**
- Chair:** Grant Izmirlian, NCI Division of Cancer Prevention
- Speaker:** YanYan Zhou, Florida International University
- Discussant:** Vance Berger, NCI Division of Cancer Prevention
- Date/time:** Wednesday, October 4, 2006 / 11:00 a.m. to 12:00 noon
- Location:** NIH's Executive Plaza complex. Executive Plaza North, Conference Room 319, 6130 Executive Boulevard, Rockville, Maryland; pay parking is available. Check with security upon entry photo ID required.
- Sponsor:** NCI Division of Cancer Prevention and WSS Section on Public Health and Biostatistics
- Abstract:** In the context of randomized clinical trials, multiplicity arises in many forms. One prominent example is when a key endpoint is measured and analyzed both at baseline and after treatment. It is common to analyze each separately, but more efficient to adjust the post-treatment comparisons for the baseline values. Adjustment techniques generally treat the covariate (baseline value, in this case) as either nominal or continuous. Either is problematic when applied to an ordinal covariate, the former because it fails to exploit the natural ordering and the latter because it relies on an artificial notion of linear prediction and differences between values.
- We propose new methods for adjusting for ordinal covariates without having to treat them as nominal or continuous.

## Program Announcement

Title: **Nonprofit employment: Improving estimates with a match of IRS information forms and BLS QCEW**

Speaker: Martin David, The Urban Institute

Discussants: John Czajka, Mathematica Policy Research  
Paul Arnsberger, IRS

Chair: Linda Atkinson, Economic Research Service, USDA

Date/time: Monday, October 16, 2006 / 12:30 – 2:00 p.m.

Location: Bureau of Labor Statistics Conference Center, Room 9. To be placed on the seminar attendance list at the Bureau of Labor Statistics you need to e-mail your name, affiliation, and seminar name to [wss\\_seminar@bls.gov](mailto:wss_seminar@bls.gov) (underscore after `wss`) by noon at least 2 days in advance of the seminar or call 202-691-7524 and leave a message. Bring a photo ID to the seminar. BLS is located at 2 Massachusetts Avenue, NE. Take the Red Line to Union Station.

Sponsor: WSS Economics Section

Abstract: Using the QCEW for 2002, Salamon and Sokowloski (2005) estimated employment in nonprofit organizations to be 8.2% of private workers in the US. Alternative estimates (in this report) use information returns filed on IRS Form 990 and 990EZ supplemented by matches to the QCEW. The IRS registers Federal employer identifying numbers (EIN) of exempt organizations and requires most to file Forms 990 annually. The IRS Forms used and the QCEW have limited coverage of the exempt sector. In addition, more than 20% of Form 990 filers fail to report employment and Form 990EZ filers are not required to report employment.

Using the two data sources matched on EIN improves employment estimates. (a) Employment counts on Form 990 are substantially increased by imputing QCEW employment to nonreporters; and (b) employment counts for organizations filing 990EZ are 100% imputed from the QCEW. For organizations that do not match, aggregate employment can be estimated by extrapolating from the probability of false negative reports observed for matched organizations. Coverage and nonreporting vary by industry class. The most global estimates can be made using the National Taxonomy of Exempt Organizations (NTEE) coded for IRS information returns. NAICS is only available for matched data.

Estimates are adjusted for false positive and false negative matches. Criteria that identify false positives eliminate many matched establishments in the years 1999-2003. (The method used in Salamon and Sokowloski can not identify such cases.) False negatives occur because some EIN's are invalid. Estimates of employment taken from the QCEW for organizations that have no Form 990 or File Form 990-EZ are weighted to account for invalid EIN's in the QCEW. The report concludes with recommendations for further work and suggestions for improvements in data processing used by IRS and BLS.

## Program Announcement

- Title:** **Moving versus Fixed Sampling Designs for Detecting Airborne Biological Pathogens**
- Speaker:** Steven K. Thompson, Simon Fraser University, Department of Statistics and Actuarial Science
- Chair:** Myron Katzoff, NCHS
- Date/Time:** Wednesday, October 18, 2006 / 12:00 – 1:00 p.m.
- Location:** Bureau of Labor Statistics (BLS) Conference Center, Room 9. To be placed on the seminar attendance list at BLS, email your name, affiliation and seminar name to [wss\\_seminar@bls.gov](mailto:wss_seminar@bls.gov) (do not omit the underscore after “wss”) by noon at least two day before the seminar or call 202-691-7524 and leave a message providing that information. Bring a Photo ID to the seminar. BLS is located at 2 Massachusetts Avenue, NE across from Union Station which is on the Red Line.
- Sponsor:** Defense and National Security Section
- Abstract:** For detecting releases of biological pathogens and other airborne health hazards, is it better to set out sensors in fixed positions or to have them move in some pattern? Beyond simple detection of the hazard, what is the best fixed or moving pattern for characterizing the release in space and time? The more general question is what is the best design for sampling a population that is changing, when the sampling units themselves may move as observations are collected. In this talk I'll describe the motivation for a study of this issue, the results of the study, and some open questions remaining.

## Program Announcement

- Title:** On Missing Data and Interactions in SNP Association Studies
- Speaker:** Ingo Ruczinski, PhD  
Department of Biostatistics  
Johns Hopkins Bloomberg School of Public Health
- Date/time:** Friday, October 20, 2006 / 10:00 – 11:00 a.m.
- Location:** Georgetown University, Lombardi Comprehensive Cancer Center, New Research Building, Room E501, 3900 Reservoir Road, NW, Washington, DC 20007. Please contact Marina Vacaru at 202-687-4114 or [emv6@georgetown.edu](mailto:emv6@georgetown.edu) if there are any questions.
- Sponsor:** Department of Biostatistics, Bioinformatics and Biomathematics, Georgetown University
- Abstract:** In this presentation we discuss possible solutions for two common problems in SNP association studies: the presence of missing data in the covariates, and the search and evaluation of models allowing for higher order SNP-SNP and SNP-environment interactions.

The majority of SNP association studies are based on data with missing genotype information. The most common approach for dealing with those missing data is to omit the observations that have missing records in the model's covariates. This approach however can have severe shortcomings for the statistical inference, namely a potential bias in the parameter estimates, and the loss of power. The latter can be overwhelming especially when SNP-SNP interactions are considered. In this presentation we show some examples that illustrate the shortcomings of omitting observations, and compare some methods to address the missing data issue. In particular, we propose a novel tree-based imputation algorithm as a solution, and demonstrate how this approach can be used to draw valid statistical inference in the search for and assessment of SNP-SNP interactions, using the Logic regression methodology.

## Program Announcement

**Title:** **Protecting the Confidentiality of Commodity Flow Survey Tabular Data by Adding Noise to the Underlying Microdata**

**Speakers:** Paul B. Massell, Statistical Research Division, U.S. Census Bureau

**Discussant:** Jacob Bournazian, Energy Information Administration, U.S. Department of Energy

**Chair:** Linda Atkinson, Economic Research Service, USDA

**Date/time:** Tuesday, October 24, 2006 / 12:30 – 2:00 p.m.

**Location:** Bureau of Labor Statistics Conference Center, Room 8. To be placed on the seminar attendance list at the Bureau of Labor Statistics you need to e-mail your name, affiliation, and seminar name to [wss\\_seminar@bls.gov](mailto:wss_seminar@bls.gov) (underscore after `wss`) by noon at least 2 days in advance of the seminar or call 202-691-7524 and leave a message. Bring a photo ID to the seminar. BLS is located at 2 Massachusetts Avenue, NE. Take the Red Line to Union Station.

**Sponsor:** WSS Economics Section

**Abstract:** BTS and the U.S. Census Bureau are co-sponsors of the Commodity Flow Survey (CFS). The CFS produces data on the movement of goods in the United States. These data are used by analysts for transportation planning and decision-making and for modeling transportation facilities and services demand. Cell suppression has been used over the years to protect magnitude data values. Data users, especially transportation modelers, have indicated their desire for access to tables with fewer suppressed cells. Census and BTS are exploring the addition of noise to the underlying CFS microdata as an alternative method for protecting the magnitude values. The noise method used here is due to Evans, Zayatz, and Slanta (J. Official Statistics, 1998). Initial research findings have been quite positive. This paper will present our results to date including analysis of noise effects on selected CFS tables. We will describe various ways of measuring the effectiveness of this noise method on any set of tables.

This talk is an expanded version of an invited paper presented at an ASA session on disclosure at JSM2006. That paper was co-authored with Neil Russell, who, at the time of this research, was the confidentiality officer at the Bureau of Transportation Statistics (BTS).



## **Program Announcement**

- Title:** **Partially Synthetic Data for Disclosure Avoidance: An Application to the American Community Survey Group Quarters Data**
- Chair:** Yves Thibaudeau, U.S. Census Bureau
- Speakers:** Sam Hawala, U.S. Census Bureau  
Rolando Rodríguez, U.S. Census Bureau
- Discussant:** Jerry Reiter, Duke University Institute of Statistics and Decision Sciences
- Date/time:** Thursday, November, 2, 2006 / 12:30 to 2:00 p.m.
- Location:** Bureau of Labor Statistics, Conference Center in G440. To be placed on the seminar list attendance list at the Bureau of Labor Statistics you need to e-mail your name, affiliation, and seminar name to [wss\\_seminar@bls.gov](mailto:wss_seminar@bls.gov) (underscore after 'wss') by noon at least 2 days in advance of the seminar or call 202-691-7524 and leave a message. Bring a photo ID to the seminar. BLS is located at 2 Massachusetts Avenue, NE. Use the Red Line to Union Station.
- Sponsor:** Methodology Section, WSS
- Abstract:** We investigate the disclosure avoidance approach of releasing to the public partially synthetic microdata. Partially synthetic data are data constructed by keeping some of the actual observations and substituting others with modeled values. This form of data release has the advantage of reflecting the loss of information incurred for confidentiality protection so that inferences are correct. The approach works by selecting variables and records for which we produce synthetic values through models chosen conveniently to satisfy disclosure avoidance but still providing data analysis conclusions comparable to those based on the original data. We assess the method by providing an estimate of disclosure risk and some analytic validity comparisons between estimates of statistics produced from the synthetic and original data.

## **Program Announcement**

- Title:** Working with the American Community Survey: Findings from the National Academies Panel
- Chair:** Susan Schechter, U.S. Census Bureau
- Speaker:** Graham Kalton, Westat; Connie Citro, Committee on National Statistics, the National Academies
- Discussant:** Andrew Reamer, The Brookings Institution
- Date/Time:** Tuesday, November 14, 2006 / 12:30 to 2:00 p.m.
- Location:** Bureau of Labor Statistics, Conference Center in Room 1. To be placed on the seminar list attendance list at the Bureau of Labor Statistics you need to e-mail your name, affiliation, and seminar name to [wss\\_seminar@bls.gov](mailto:wss_seminar@bls.gov) (underscore after 'wss') by noon at least 2 days in advance of the seminar or call 202-691-7524 and leave a message. Bring a photo ID to the seminar. BLS is located at 2 Massachusetts Avenue, NE. Use the Red Line to Union Station.
- Sponsor:** Methodology Section, WSS
- Abstract:** The American Community Survey (ACS) has just issued data products for states and large counties and cities for 2005--the first year of full implementation for the survey, which has been in testing and development since 1996. The speakers, who are, respectively, the chair and co-study director of a CNSTAT/NAS Panel on the Functionality and Usability of Information from the ACS, will discuss two topics under review by the panel. The first topic concerns the ways in which the ACS replaces and is different from the decennial census long-form sample and some of the implications for data users. The second topic concerns estimation issues for the ACS, including the weighting for 1-year, 3-year, and 5-year period estimates and the effects of population controls.

## **Program Announcement**

- Title:** The Advanced Technology Program: Evaluating a Public-Private Partnership
- Speaker:** Stephanie Shipp, Director, Economic Assessment Office, Advanced Technology Program, NIST
- Chair:** Nancy Donovan, GAO
- Discussant:** Lynda Carlson, NSF
- Date/time:** Wednesday, November 15, 2006 / 12:30 to 2:00 p.m.
- Location:** Bureau of Labor Statistics Conference Center, Room 9. To be placed on the seminar attendance list at the Bureau of Labor Statistics you need to e-mail your name, affiliation, and seminar name to [wss\\_seminar@bls.gov](mailto:wss_seminar@bls.gov) (underscore after `wss') by noon at least 2 days in advance of the seminar or call 202-691-7524 and leave a message. Bring a photo ID to the seminar. BLS is located at 2 Massachusetts Avenue, NE. Take the Red Line to Union Station.
- Sponsor:** WSS Social and Demographic Statistics Section
- Abstract:** The Advanced Technology Program challenges industry to accelerate the development of high-risk technologies that are unlikely to be developed at all or in time to compete in rapidly changing markets. The innovative technologies that ATP funds have the potential to generate significant commercial payoffs and widespread benefits to the U.S. economy, which is the ultimate goal of the program. ATP tracks the progress of these funded projects during the life of the project funding (3 to 5 years) and for up six years after ATP funding ends. ATP tracks projects even longer if the project is successful. This overview will highlight ATP's evaluation best practices that assess the success of individual projects and the portfolio of all projects.

## Employment

As a service to local statisticians, *WSS News* provides notification of employment opportunities and description of those seeking employment here in the Washington, DC, area. Readers are encouraged to take advantage of this feature of the newsletter. The deadline for inserting notices is five (5) weeks before the publication date. Those interested should email or call Anne Peterson, at [apeterson@insightpolicyresearch.com](mailto:apeterson@insightpolicyresearch.com) or (703) 373-6645.

### WESTAT

#### AN EMPLOYEE-OWNED RESEARCH CORPORATION

Westat is an employee-owned corporation headquartered in the suburbs of Washington, DC (Rockville, Maryland). We provide statistical consulting and survey research to the agencies of the U.S. Government and to a broad range of business and institutional clients. With a strong technical and managerial staff and a long record of quality research, Westat has become one of the leading survey research and statistical consulting organizations in the United States.

Our company was founded in 1961 by three statisticians. The current staff of more than 1,800 includes over 60 statisticians, as well as research, technical, and administrative staff. In addition, our professional staff is supported by data collection and processing personnel situated locally and in field sites around the country. The work atmosphere is open, progressive, and highly conducive to professional growth.

Our statistical efforts continue to expand in areas such as the environment, energy, health, education, and human resources. Westat statisticians are actively involved in teaching graduate-level courses in statistical methods and survey methodology in collaborative arrangements with area colleges and universities.

We are currently recruiting for the following statistical position:

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The Department of Epidemiology & Biostatistics is recruiting for a full time faculty member at the Assistant or Associate Professor level with expertise in biostatistics.

The successful candidate will have the opportunity to join a growing Department of Epidemiology and Biostatistics in the nation's capital that has a highly respected and energetic teaching and research faculty and the opportunity to conduct clinical trials research at The Biostatistics Center.

Under the leadership of its new Chairman, Alan E. Greenberg, MD, MPH, the Department has expertise in HIV/AIDS, cancer, behavioral, and aging epidemiology, geographical health information systems, and biostatistical methods. In addition, the Department has established collaborative opportunities with other Departments in the GWU School of Public Health and Health Services, the GWU Medical Center, the Veterans Administration Hospital, Children's National Medical Center, the National Cancer Institute, the Department of Defense, and the DC Department of Health.

The Biostatistics Center is a leader in the statistical coordination of clinical trials conducted by the National Institute of Health. The center is renowned for its leadership in multi-center trials in diabetes, cardiovascular disease, maternal/fetal clinical medicine, osteoporosis, and urology, and the genetic basis for a series of diseases.

The Department of Epidemiology and Biostatistics is involved in the MS and PhD degree programs in biostatistics and in epidemiology, among other graduate degree programs. The MS and PhD degree programs in biostatistics and in epidemiology admitted its first class in 1995. There are currently 15 doctoral students matriculated in the PhD degree in biostatistics and 10 students matriculated in the MS degree in biostatistics. More than half of the doctoral students in biostatistics are working on their dissertation research.

Responsibilities of the position will include teaching upper level courses in theoretical and applied biostatistics, mentoring masters and doctoral students in biostatistics, participating in clinical trials research at the GWU Biostatistics Center (<http://biostat.bsc.gwu.edu>), and developing an externally-funded research program.

Faculty rank and compensation will be commensurate with experience. Review of applications will begin on March 1, 2006, and will continue until the position is filled. Send letter of application, CV, and a list of 3 references, preferably electronically, to:

**Dr. Dante A. Verme**

Chair, Search Committee, Biostatistics

E-mail: [sphdav@gwumc.edu](mailto:sphdav@gwumc.edu) (electronic submissions strongly preferred)

Vice Chair for Educational Activities

Department of Epidemiology and Biostatistics

The George Washington University

School of Public Health & Health Services

2300 Eye St., NW, Ross Hall 125

Washington, DC 20037

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**Master's Level Research Positions:** These positions require a Master's in Biostatistics or Statistics and 1-5 years experience in analysis, supervision of data management and study design for biomedical applications. Good written and oral communication skills, and detailed knowledge of SAS required. Send CV to address below.

**Assistant to Full Research Professorial Positions** are available immediately to serve as Co-Investigator or Principal Investigator (Project Director) and to provide statistical direction of the design, conduct and analysis of studies and the conduct of methodologic research to meet the projects needs. We are seeking individuals who want to join a highly competent team of academic biostatisticians and epidemiologists; who desire to contribute to the design and analysis of major medical studies, seek substantive scientific and statistical responsibility, enjoy interacting with medical investigators; take pride contributing to the publication of major papers in leading medical journals, and desire to make an impact on the public health. Our faculty also participate in graduate programs in biostatistics, epidemiology and statistics which afford opportunities for teaching at the graduate level. The research projects also provide an environment rich in methodological problems, with opportunities for collaboration with research active Center faculty and graduate students.

**Minimum Position Requirements:** Doctorate in Biostatistics, Statistics or Epidemiology, or alternatively an M.D. or Ph.D. in Biological Science, Physical Science or Computer Science with a Masters in Biostatistics or Statistics, 1-5 years' experience with clinical trials, especially study design and statistical analysis of study results using SAS, excellent oral and written English communication skills, and supervisory experience.

**Application Procedures:** Applicants must send a Curriculum Vitae and three letters of reference; a letter to include a synopsis of their role in collaborative medical research that has led to medical scientific presentation or publication and a statement of career purpose indicating their career goals and how this position can help you achieve those goals; and applicants for Assistant Research Professor positions must send an Official Transcript of graduate coursework leading to the doctoral degree to: Sarah Fowler, Research Professor and Director, The George Washington University Biostatistics Center, 6110 Executive Blvd., Suite 750, Rockville, MD 20852. [HTTP://WWW.BSC.GWU.EDU](http://www.bsc.gwu.edu)

Review of applications is ongoing until the positions are filled. Rank/position title and salary commensurate with experience and qualifications. Tuition benefits for employees (including Ph.D. in Statistics, Biostatistics and Epidemiology) and for spouse and dependent children.

All research and regular faculty at the rank of Assistant Professor in Biostatistics or Statistics may apply for the Samuel W. Greenhouse Biostatistics Research Enhancement Award. For a period of 1 year, the award will provide 20% effort for methodological research and a discretionary fund to support professional activities, travel to professional meetings, supplies and equipment. Applicants for the research faculty position may also apply for the Greenhouse Award while their

faculty application is being considered. For complete information including Award Application Materials Requirements, please visit our website at: [www.bsc.gwu.edu](http://www.bsc.gwu.edu).

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## The 2006 Morris Hansen Lecture

The Washington Statistical Society is pleased to announce the sixteenth in its annual series of lectures to honor the memory of Morris Hansen. This lecture series is made possible by a grant from Westat where Morris Hansen was Senior Statistician for 20 years and was serving as Chairman of the Board of Directors at the time of his death.

This year, the Morris Hansen Lecturer is **Michael F. Goodchild**, Professor of Geography at the University of California, Santa Barbara; Chair of the Executive Committee, National Center for Geographic Information and Analysis (NCGIA); and Director of NCGIA's Center for Spatially Integrated Social Science.

Professor Goodchild is the author of approximately 350 publications. His major publications include:

*Accuracy of Spatial Databases* (1989); *Geographical Information Systems: Principles and Applications* (1991); *Environmental Modeling with GIS* (1993); *GIS and Geographical Information Systems: Principles, Techniques, Management and Applications* (1999); *Geographic Information Systems and Science* (2001 and 2005); *Spatial Uncertainty in Ecology* (2001); *Spatial Data Quality* (2002); *Uncertainty in Geographical Information* (2002); *Foundations of Geographical Information Science* (2003); *Spatially Integrated Social Science* (2004); and *GIS, Spatial Analysis, and Modeling* (2005). He serves on numerous educational boards, and his many honors and awards include a lifetime achievement award from Environmental Systems Research Institute, Inc. Professor Goodchild holds a BA degree from Cambridge University in Physics in 1965 and his PhD in Geography from McMaster University.

## Program

Jefferson Auditorium  
U.S. Department of Agriculture  
South Building

Monday, November 6, 2006  
3:30 pm - 5:30 pm

### Opening Remarks

Carol House  
National Agricultural Statistics Service

### Chair

Norman Bradburn  
NORC/University of Chicago

### Keynote Speaker

Michael F. Goodchild  
University of California, Santa Barbara

### Discussants

Sarah M. Nusser  
Iowa State University

Linda W. Pickle  
National Cancer Institute

### Reception

Patio  
U.S. Department of Agriculture  
Jamie L. Whitten Building  
(Across Independence Avenue)  
5:30 - 6:30 p.m.

## Statistical Perspectives On Spatial Social Science

Michael F. Goodchild  
University of California, Santa Barbara

Several commentators have drawn attention to what appears to be a "spatial turn" in several disciplines, including some of the social sciences, driven in part by advances in the geographic information technologies – geographic information systems, the Global Positioning System, and satellite remote sensing – and in part by an increasing emphasis on place-based analysis and policy formulation. It is possible to identify several general characteristics of geographic data, each of which presents problems in the application of traditional statistical methods. Spatial dependence and spatial heterogeneity both run counter to standard assumptions of statistical methods, yet both are potentially useful properties of geographic data. There are interesting applications of classic problems in statistical geometry, and much attention over the past two decades has been devoted to modeling the uncertainties that are inevitably present in geographic data. The presentation ends with comments and speculation on future directions for the field, including an increasing emphasis on the temporal dimension.

## Sponsors

The Washington Statistical Society

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U.S. Department of Agriculture

### Program Committee

*Daniel Kasprzyk (Chair)*

*Norman Bradburn*

*Carol House*

*Trena Ezzati-Rice*

*Keith Rust*

*Nathaniel Schenker*

### Location

The Jefferson Auditorium  
USDA South Building  
Independence Avenue, SW  
Between 12th and 14th Streets  
Washington, DC  
Smithsonian METRO stop  
Enter through  
Wing 5 or Wing 7 from  
Independence Ave.  
(Handicapped Entrance at  
12th & Independence). This is a  
secure building. Photo ID is  
required. Expect delays.

Attendance at this event is  
open to the general public.

Pre-register to facilitate access  
to the building

<http://www.nass.usda.gov/morrishansen/>

No Admission Fee

P.O. Box 752  
Suitland, MD 20752



## 16TH ANNUAL MORRIS HANSEN LECTURE

**Michael F. Goodchild**  
**Professor of Geography**  
**University of California,**  
**Santa Barbara**

**Monday**  
**November 6, 2006**  
**3:30 pm - 6:30 pm**

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