



WSS NEWS

December 2007

WASHINGTON
STATISTICAL
SOCIETY

Holiday Party

The Holiday Party will be held at Gordon Biersch which is located at 900 F Street, NW, Washington, DC on December 19, 2007 at 6:00 p.m. See the flyer for more details.

Nominations Sought for 2008 Julius Shiskin Award

Nominations are invited for the annual Julius Shiskin Memorial Award for Economic Statistics. The Award is given in recognition of unusually original and important contributions in the development of economic statistics or in the use of statistics in interpreting the economy. Contributions are recognized for statistical research, development of statistical tools, application of information technology techniques, use of economic statistical programs, management of statistical programs, or developing public understanding of measurement issues. The Award was established in 1980 by the Washington Statistical Society (WSS) and is now cosponsored by the WSS, the National Association for Business Economics, and the Business and Economics Statistics Section of the American Statistical Association (ASA). The 2007 award recipient was Arthur Kennickell, Senior Economist and Head of the Microeconomic Surveys Unit at the Federal Reserve Board, for his leadership of the Federal Reserve's Survey of Consumer Finances and his achievements as an international expert on the design and implementation of household economic surveys.

Because the program was initiated many years ago, it is little wonder that statisticians and economists often ask, "Who was Julius Shiskin?" At the time of his death in 1978, "Julie" was the Commissioner of the Bureau of Labor Statistics (BLS) and earlier served as the Chief Statistician at the Office of Management and Budget (OMB), and the Chief Economic Statistician and Assistant Director of the Census Bureau. Throughout his career, he was known as an innovator. At Census he was instrumental in developing an electronic computer method for seasonal adjustment. In 1961, he published *Signals of Recession and Recovery*, which laid the groundwork for the calculation of monthly economic indicators, and he developed the monthly Census report *Business Conditions Digest* to disseminate them to the public. In 1969, he was appointed Chief Statistician at OMB where he developed the policies and procedures that govern the release of key economic indicators (Statistical Policy Directive Number 3), and originated a Social Indicators report. In 1973, he was selected to head BLS where he was instrumental in preserving the integrity and independence of the BLS labor force data and directed the most comprehensive revision in the history of the Consumer Price Index (CPI), which included a new CPI for all urban consumers.

Nominations for the 2008 award are now being accepted. Individuals or groups in the public or private sector from any country can be nominated. The award will be presented with an honorarium of \$750 plus additional recognition from the sponsors. A nomination form and a list of all previous recipients are available on the ASA Website at www.amstat.org/sections/bus_econ/shiskin.html or by writing to the Julius Shiskin Award Committee, Attn: Monica Clark, American Statistical Association, 732 North Washington Street, Alexandria, VA 22314-1943. Completed nominations must be received by April 1, 2008. For further information contact Steven Paben, Julius Shiskin Award Committee Secretary, at paben.steven@bls.gov.

WSS and Other Seminars

(All events are open to any interested persons)

December

- 5 Wed. **Evaluating Alternative One-Sided Coverage Intervals for an Extreme Binomial Proportion**

- 6 Thur. **Evaluating Continuous Training Programs Using the Generalized Propensity Score**

- 7 Fri. **Disparate Modes of Survey Data Collection**

- 10 Mon. **Empirical likelihood based calibration method in missing data problems**

- 11 Tues. **Book Signing: *Statistical Methods in Human Rights***

- 12 Wed. **Approaches to Reducing and Evaluating Nonresponse Bias, With Applications to Adult Literacy Surveys**

January

- 9 Wed. **Alternative Survey Sample Designs, Seminar #2: Sampling with Multiple Overlapping Frames**

- 16 Wed. **Medicaid Underreporting in the CPS: Results from a Record Check Study**

- 17 Thur. **Questionnaire Design Guidelines for Establishment Surveys**

- 23 Wed. **Coverage Measurement for the 2010 Census**

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

Announcement

SIGSTAT Topics for Fall 2007

December 19, 2007: Survival Models in SAS: PROC LIFEREG – Part 1

(<http://www.sas.com/apps/pubscat/bookdetails.jsp?pc=55233>)

Continuing the series of talks based on the book “Survival Analysis Using the SAS System: A Practical Guide” by Paul Allison, in November we’ll start Chapter 4: Estimating Parametric Regression Models with PROC LIFEREG. Topics discussed are:

1. the Accelerated Failure Time model
2. alternative distributions
3. categorical variables and the CLASS statement
4. maximum likelihood estimation
5. hypothesis tests

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, 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/>.

Capital Science 2008

The Washington Academy of Sciences and its Affiliates Present Capital Science 2008 to be held March 29-30, 2008.

On Saturday and Sunday, March 29-30, 2008, The Washington Academy of Sciences and its Affiliated Societies (including WSS) will hold the third in the series of biennial pan-Affiliate Conferences, Capital Science 2008. It will be held in the Conference Facility of the National Science Foundation in Arlington, VA at the Ballston Metro stop. With about 20 of the Affiliates participating, the Conference will serve as an umbrella for scientific presentations, seminars, tutorials, and talks. These pan-Affiliate Conferences underline the fact that the Washington, DC area is not only the political capital of the country but, in many respects, the nation’s intellectual capital -- with several major universities and government laboratories that are the homes of an astonishing number of Nobel laureates.

Keep checking the Web site <http://www.washacadsci.org/capsci08/Index.htm> for more information as it becomes available.

Announcement

Washington Academy of Sciences “STARS” Program

Global competition is creating an urgent need to motivate and attract some of the best and brightest students into science and technology careers. In the U.S. Congress, K-12 education is receiving renewed bipartisan support in both the House and Senate.

The Washington Academy of Sciences (W.A.S.) (of which the WSS is an affiliate member) is expanding its "STARS" (Science and Technology Aptitude Recognition for Schools) youth-in-science outreach program.

In recent years, the program has included not only active participation in several Senior High School Science Fairs, but also science events at Elementary and Middle Schools. The AAAS and the IEEE have supported our efforts by grants to the “STARS” program.

The W.A.S. is planning 9 major events in the 2008 school year. They will offer Challenge Cups, cash prizes, plaques, student memberships in Scientific Societies, certificates and other awards. Award winning student projects will also be listed in the W.A.S. Journal and Web site. Outstanding school teachers will also be recognized.

You will not need any special preparation, and the Washington Academy of Sciences will provide everything needed on site at the school.

Typically this will involve about a 4-hour commitment at a participating school (in the DC, MD or Northern VA area) sometime in the January-March 2008 time frame.

The number of schools and students benefiting from the "STARS" Program depends directly on your commitment to participate.

Note: This is a separate activity from the WSS Science Fair Judging Program.

If you are interested, please e-mail a one-liner by December 15th 2007, saying: "I would like to be included in the 2008 W.A.S. Judges' Roster" to Paul Hazan, WAS Vice President for Junior Academy Affairs (pmhazan@comcast.net / Tel: (301) 603-0536) and include your name, e-mail, affiliation, address, and telephone number.

You will be notified as soon as the schools give us their event dates.

Announcement

Seminar on Survey Respondent Incentives: Research and Practice

March 10, 2008
L'Enfant Plaza Hotel
Washington, DC

Hosted by the Council of Professional Associations on Federal Statistics

Incentive payments to survey respondents have been used extensively for many years to improve response rates. Considerable research evidence supports the value of monetary incentives to increase cooperation and improve the speed and quality of response in a broad range of data collection efforts. In 1992, a Symposium on Providing Incentives to Survey Respondents, hosted by the Council of Professional Associations on Federal Statistics (COPAFS), brought together a broad spectrum of survey research professionals from government, business, academia, and research organizations to focus on these issues in detail—to review the “state-of-the art.” (To read the report go to: www.members.aol.com/copafs/incentives.htm). Since that time, the use of respondent incentives in survey practice has increased dramatically across all sectors. Yet there has been no professional forum since the 1992 symposium that has sought to bring survey professionals together with a specific focus on these issues. The purpose of the proposed seminar is to fill that void.

The first session of the seminar will describe current practices in the use of respondent incentives across the three major domains of surveys: 1) surveys sponsored by federal agencies; 2) surveys conducted by academic investigators, including those funded by federal or other grants; and 3) surveys sponsored and conducted by private sector organizations and commercial establishments.

Session two will be a panel discussion bringing together survey research professionals who have conducted and are knowledgeable of major research, practices and trends on the use of respondent incentives in government, academic, commercial surveys. The theme of this session is: who, what, where, when, why and how do we pay? The panelists will focus in detail on what we are doing and what we know about the use of respondent incentives.

The concluding session will bring together a panel of survey researchers who have had considerable experience in the design and implementation of sample surveys. They will attempt to consolidate and synthesize the seminar discussion, identify common elements/themes, and suggest future directions for implementation and research.

Seminar Registration: \$125.00. For a copy of the program and registration information contact COPAFS at copafs@aol.com or call COPAFS at 703-836-0404 and ask for Edward Spar or Lee Ann Sklar. The program and registration form are also available at the COPAFS site at: www.copafs.org

Program Announcement

- Title:** **Evaluating Alternative One-Sided Coverage Intervals for an Extreme Binomial Proportion**
- Chair:** Keith Rust, Westat
- Speakers:** Phillip Kott, Research and Development Division, NASS, and Yan Liu, Statistics of Income Division, IRS
- Discussant:** Randy Curtin, NCHS
- Date/Time:** Wednesday, December 5, 2007 / 12:30 – 2:00 p.m.
- Location:** Bureau of Labor Statistics, Conference Center. 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 (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 Program, WSS
- Abstract:** The interval estimation of a binomial proportion is difficult, especially when the proportion is extreme (very small or very large). Most of the methods discussed in the literature implicitly assume simple random sampling. These interval-estimation methods are not immediately applicable to data derived from a complex sample design. Some recent papers have addressed this problem, proposing modifications for complex samples. Matters are further complicated when a one-sided coverage interval is desired. This paper provides an extensive review of existing methods for constructing coverage intervals for a binomial proportion under both simple random and complex sample designs. It also evaluates the empirical performances of different one-sided coverage intervals under both a simple random and a stratified random sample design.

Program Announcement

- Title:** Evaluating Continuous Training Programs Using the Generalized Propensity Score
- Speaker:** Arne Uhlendorff, IZA Institute for the Study of Labor, Bonn
- Discussant:** Julia Lane, National Opinion Research Center at the University of Chicago
- Chair:** Linda Atkinson, Economic Research Service, USDA
- Date/Time:** Thursday, December 6, 2007 / 12:30 – 2:00 p.m.
- Location:** Bureau of Labor Statistics Conference Center. 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 (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:** This paper assesses the dynamics of treatment effects arising from variation in the duration of training. We use German administrative data that have the extraordinary feature that the amount of treatment varies continuously from 1 day to 720 days (i.e. 2 years). This feature allows us to estimate a continuous dose-response function that relates each value of the dose, i.e. days of training, to the individual post-treatment employment probability (the response). The dose-response function is estimated after adjusting for covariate imbalance using the generalized propensity score, a recently developed method for covariate adjustment under continuous treatment regimes. Our results indicate an increasing dose-response function for treatments of up to 360 days, and a similarly steady decline afterwards.

Program Announcement

- Title:** Disparate Modes of Survey Data Collection
- Speaker:** Mark Pierzchala, Senior Fellow, Mathematica Policy Research, Inc.
- Discussant:** Brad Edwards, Vice President, Westat
- Chair:** Carl Pierchala, Mathematical Statistician, National Highway Traffic Safety Administration
- Date/Time:** Friday, December 7, 2007 / 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 (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 Data Collection Methods
- Abstract:** Multimode surveys are increasingly fielded in an effort to reduce costs, increase response rates, and accelerate data collection. However the essential survey-taking process of posing a question, formulating an answer, and communicating and recording a response occurs differently in each mode. For example in Web and paper modes the survey presentation is visual and the respondent is solely responsible for understanding the question and providing an answer. On the other hand, in CAPI and CATI modes, the survey presentation is aural and providing an answer involves an interviewer.

This seminar reviews the concept of disparate modes. Survey modes are disparate for a survey item when they result in a different optimal question form in each mode. The intrinsic aspects of each mode are reviewed for their influence on disparity taking into account the specific kinds of items the survey uses.

This presentation uses examples of multimode surveys conducted by Mathematica Policy Research, Inc. It reviews the methods used to investigate this topic, where and why disparity occurs, and how some kinds of items are more prone to disparate presentation across modes. It also notes that different question forms for an item across modes can be the result of the survey design and survey operations environment rather than due to intrinsic disparity. Much of this material was presented at the International Statistical Institute conference in August 2007 in Lisbon, Portugal.

Note from the WSS NEWS Editor

Items for publication in the January issue of the WSS NEWS will be accepted until December 10, 2007. E-mail items to Michael Feil at michael.feil@usda.gov.

Program Announcement

Title: Empirical likelihood based calibration method in missing data problems

Time/Place: Monday, December 10, 2007, 11 - 12 p.m. / Room 9201, OBR Conference Room. OBR/NHLBI, 6701 Rockledge Drive, Bethesda, MD 20892

To enter the building, contact: Gang Zheng, 301-435-1287 and your photo ID is also required. Parking behind of the buildings is free.

Directions of driving. From Frederick (north): Take 1-270 South. Take exit 1 for Rockledge Drive. Merge onto Rockledge Blvd. Turn right at Rockledge Drive. From DC/NVA (south): Take 1-495 North. Slight left at 1-270 Spur North for Rockville/1-270/Frederick. Take exit 1 for Democracy Blvd. Keep right at the fork and follow signs for Democracy Blvd E and merge onto Democracy Blvd. Turn left at Rockledge Dr.

Abstract: Calibration estimation has been developed into an important field of research in survey sampling during last decade. It is now an important methodological instrument in the production of statistics. A few national statistical agencies have developed software designed to compute calibrated weights based on auxiliary information available in population registers and other sources. However its application in general statistics outside of survey sampling is limited. In this paper we have found the simple calibration method is a powerful tool to handle the general missing data problem when the parameters of interest are defined by unbiased estimating equations. Unlike the traditional calibration method in which the calibrated weights do not depend on any unknown parameters, our calibration weights depend on the unknown parameters of interest and must be estimated by the calibration estimating equations. Large sample results and simulations are included. All results show that in general the proposed empirical likelihood calibration method produces improved estimation over its competitors. This talk is based on joint works with some of my colleagues.

Announcement

Save the Date

December 11th 12:30-2:00pm

Book Signing at Reiter's Books

Jana Asher, David Banks, and Fritz Scheuren
Statistical Methods in Human Rights

Food and beverages provided.

All three authors will be there: Reiter's Books, 1990 K Street NW, Washington DC

Sponsor: WSS Human Rights Section

Look forward to seeing you there

Program Announcement

- Title:** Approaches to Reducing and Evaluating Nonresponse Bias, With Applications to Adult Literacy Surveys
- Chair:** Tom Krenzke, Westat
- Speaker:** Wendy Van de Kerckhove, Westat
- Discussant:** Brian Harris-Kojetin, Office of Management and Budget
- Date/Time:** Wednesday, December 12, 2007 / 12:30 – 2:00 p.m.
- Location:** Bureau of Labor Statistics, Conference Center. 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 (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 Program, WSS
- Abstract:** Almost all surveys are subject to some level of nonresponse. Nonresponse bias can be substantial when two conditions hold, 1) when the response rate is relatively low, and 2) when the difference between the characteristics of respondents and nonrespondents is relatively large. As addressed in the most recent OMB guidelines, approaches to reducing and evaluating nonresponse bias should consider both components. This presentation describes several approaches for reducing and evaluating nonresponse bias in surveys aimed at assessing adult literacy. Several bias-reduction approaches will be presented relating to data collection, weighting, and imputation for outcome-related nonresponse. In addition, an evaluation of nonresponse bias will be shown that extends the standard demographic comparison of respondents and nonrespondents to incorporate key survey estimates.

Program Announcement

U. S. CENSUS BUREAU DEMOGRAPHIC STATISTICAL METHODS DIVISION SEMINAR

Title: **Alternative Survey Sample Designs, Seminar #2: Sampling with Multiple Overlapping Frames**

Speaker: Professor Sharon Lohr, Arizona State University

Discussant: Professor Jean D. Opsomer, Colorado State University.

Date/Time: Wednesday, January 9, 2008 / 9:30 a.m. - 12:00 p.m.

Location: U. S. Census Bureau, 4600 Silver Hill Road, Auditorium, Suitland, Maryland.
By Metro, use the Green Line to Suitland Station and walk through the Metro parking garage to the main entrance of the Census Bureau. Please send an e-mail to Carol.A.Druin@census.gov, or call (301) 763 4216 to be placed on the visitors' list for this seminar by 4 January 2008. A photo ID is required for security purposes.

Abstract: The Census Bureau's Demographic Survey Sample Redesign Program, among other things, is responsible for research into improving the designs of demographic surveys, particularly focused on the design of survey sampling. Historically, the research into improving sample design has been restricted to the "mainstream" methods like basic stratification, multi-stage designs, systematic sampling, probability-proportional-to size sampling, clustering, and simple random sampling. Over the past thirty years or more, we have increasingly faced reduced response rates and higher costs coupled with an increasing demand for more data on all types of populations. More recently, dramatic increases in computing power and availability of auxiliary data from administrative records have indicated that we may have more options than we did when we established our current methodology.

This seminar series is the beginning of an exploration into alternative methods of sampling. In this second seminar of the three seminar series, from 9:30 to 10:30, we will hear about Professor Lohr's work on the use of multiple overlapping frames for sampling. She will discuss various alternative approaches and their statistical properties. Following Professor Lohr's presentation, there will be a 10-minute break, and then from 10:40 to 11:30, Professor Jean Opsomer will provide discussion about the methods and their potential in demographic surveys, particularly focusing on impact on estimation. The seminar will conclude with an open discussion session from 11:30 to 11:45 with 15 additional minutes available if necessary.

Seminar #3 is currently slated for June 2, 2008 and will feature Professor Yves Tille of University of Neuchatel in Switzerland discussing balanced sampling.

This event is accessible to persons with disabilities. Please direct all requests for sign language interpreting services, Computer Aided Real-time Translation (CART), or other accommodation needs, to HRD.Disability.Program@census.gov. If you have any questions concerning accommodations, please contact the Disability Program Office at 301-763-4060 (Voice), 301-763-0376 (TTY).

Program Announcement

Title: Medicaid Underreporting in the CPS: Results from a Record Check Study

Chair: Robert Stewart, Congressional Budget Office

Speaker: Joanne Pascale, U.S. Census Bureau

Discussant: John Czajka, Mathematica Policy Research

Date/Time: Wednesday, January 16, 2008 / 12:30 – 2:00 p.m.

Location: Bureau of Labor Statistics, Conference Center
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 (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 Program, WSS

Abstract: The Medicaid program covers roughly 38 million people in the U.S., and the research community regularly studies the effectiveness of the program. Though administrative records provide information on enrollment status and history, the data are 3 years old before they can be used for analysis, and they do not offer information on certain characteristics of Medicaid enrollees, such as their employment status, health status and use of health services. Researchers generally turn to surveys for this type of rich data, and the Current Population Survey (CPS) is one of the most common sources used for analysis. However, there is a fairly substantial literature that indicates Medicaid is underreported in surveys when compared to counts from records. Recently an inter-agency team of researchers was assembled to address the Medicaid undercount issue in the CPS. Records on enrollment in 2000-2001 were compiled from the Medicaid Statistical Information System (MSIS) and matched to the CPS survey data covering the same years. This matched dataset allows researchers to compare data on known Medicaid enrollees to survey data in which those same enrollees were (or were not) reported to have been covered by Medicaid. This kind of "truth source" enables a rich analysis of the respondent and household member characteristics associated with Medicaid misreporting. In the CPS a single household respondent is asked questions about coverage status for all other household members, and one possible source of misreporting is the relationship between the household respondent and the other household members for whom he or she is reporting. Recent research from cognitive testing of the CPS suggests that the household respondent may be more likely to report accurately about another household member if they both share the same coverage. This paper explores whether the hypothesis suggested by cognitive testing is evident in the records data. Other variables are also considered, such as recency and duration of coverage and demographics of both respondents and people for whom they are reporting.

Program Announcement

- Title:** Questionnaire Design Guidelines for Establishment Surveys
- Speaker:** Rebecca L. Morrison, Survey Statistician, U.S. Census Bureau
- Discussant:** Brenda G. Cox, Survey Research Leader, Battelle
- Chair:** Jennifer K. Lawhorn, Graduate Student, Georgetown University and Intern, Energy Information Administration
- Date/Time:** Thursday, January 17, 2008 / 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 (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 Data Collection Methods
- Abstract:** Previous literature has shown the effects of question wording or visual design on the data provided by respondents. However, few articles have been published that link the effects of question wording and visual design to the development of questionnaire design guidelines. This article proposes specific guidelines for the design of establishment surveys within statistical agencies based on theories regarding communication and visual perception, experimental research on question wording and visual design, and findings from cognitive interviews with establishment survey respondents. The guidelines are applicable to both paper and electronic instruments, and cover such topics as the phrasing of questions, the use of space, the placement and wording of instructions, the design of answer spaces, and matrices.
- This talk is an expanded version of a paper given at ICES-3 in Montreal, Quebec, Canada in June 2007. It represents a collaborative effort with Don A. Dillman (Washington State University), and Leah M. Christian (University of Georgia).

Program Announcement

- Title:** Coverage Measurement for the 2010 Census
- Chair:** Gregg Diffendal, U.S. Census Bureau
- Speaker:** Thomas Mule, U.S. Census Bureau
- Discussant:** Michael Cohen, Committee on National Statistics
- Date/Time:** Wednesday, January 23, 2008 / 12:30 – 2:00 p.m.
- Location:** Bureau of Labor Statistics, Conference Center. 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 (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 Program, WSS
- Abstract:** For the 2010 Census Coverage Measurement (CCM), we plan to use logistic regression modeling instead of post-stratification cells in the dual system estimation. We believe that by using logistic regression that we can potentially utilize more variables than we have used in the past in trying to minimize the impact of correlation bias and high variances. Logistic regression gives us the option of using variables in the modeling as main effects and not having to introduce any unnecessary interactions. In addition to potentially utilizing more variables, logistic regression can also use variables in the model as continuous variables. This presentation shows some of the initial results of using continuous variables for the modeling and dual system estimation.

Announcement

APPLIED STRUCTURAL EQUATION MODELING

A two-day short course sponsored by the Joint Program in Survey Methodology

MAY 20-21, 2008

Presented at the Hyatt Regency Bethesda

PATRICK STURGIS

University of Surrey, UK

COURSE OBJECTIVES

This course will focus on the application of structural equation modeling (SEM) techniques to substantive research questions. Structural Equation Modeling (SEM) is a powerful and flexible approach to modeling a broad range of data types and formats. It combines aspects of measurement theory, latent variable modeling, simultaneous equations and path analysis, within a single modeling framework. It can be used for analyzing both cross-sectional and longitudinal data. This course will provide an introduction to what SEM is and what it can be used for by substantive analysts across the social sciences and across a range of sectors. The focus of the course is on the application of structural equation models for addressing real substantive questions. At the conclusion of the course participants will:

- Be able to understand key terms, concepts and the 'philosophy' of SEM
- Be able to 'read' path diagrams
- Understand and know how to estimate mediational/indirect effects
- Understand the logic and implementation of multiple group models
- Understand how SEM can be used to model categorical outcome variables
- Understand how to fit SEM in the presence of missing data
- Be familiar with the Amos user environment
- Understand how SEM can be applied to repeated measures/panel data

Although the course will not contain lab classes, there will be exercises and demonstrations to underpin lecture presentations. Course participants will receive a workbook containing all material presented in the lectures and classes, plus additional reading lists and weblinks.

WHO SHOULD ATTEND

The course is intended for persons involved in quantitative data analysis in government, commercial, and academic sectors. The presentation of material will be aimed predominantly at the conceptual rather than the mathematical level. The course assumes a basic working knowledge of the general linear model and probability theory. Some familiarity with factor analysis would be advantageous, though not a requirement.

THE INSTRUCTOR

Dr Patrick Sturgis is associate professor in quantitative sociology in the Department of Sociology, University of Surrey. His research interests are in the areas of public opinion, statistical modeling and survey methodology, with a particular focus on longitudinal surveys. He teaches survey methodology and statistical modeling at both undergraduate and postgraduate level and has published widely on different aspects of survey design and analysis. He is an Associate Fellow of the Southampton Social Statistics Research Institute (S3RI) and associate editor of the journal 'Survey Research Methods'. He is Principal Investigator on a 2 year UK Economic and Social Research Council project 'Social and Political Trust: A Longitudinal and Comparative Perspective'.

TENTATIVE SCHEDULE

TUESDAY, MAY 20, 2008

- 8:00 - 9:00 Registrant Check-in and Continental Breakfast
 9:00 - 9:15 Aims and Objectives of the course
 9:15 - 10:15 Lecture 1 Structural Equation Modeling: what is it and what can we use it for?
 10:15 - 10:30 Morning Break
 10:30 - 11:45 Lecture 2 Preliminaries:
 Overview of foundational ideas, terms and concepts; matrices; estimation; parameter constraints; 'reading' path diagrams; model identification
 11:45 - 1:00 Lunch Break
 1:00 - 2:00 Lecture 3 Measuring concepts 1:
 The 2-step model; Exploratory v Confirmatory Factor Analysis
 2:00 - 3:00 Lecture 4 Measuring concepts 2:
 Assessing model fit, exact v approximate fit; nested models; model modification, modification indices, correlated error variances
 3:00 - 3:15 Afternoon Break
 3:15 - 4:00 Lecture 5 The structural model 1:
 Exogenous and endogenous variables; multiple indicators multiple causes (MIMIC) model; mediational models, direct, indirect and total effects
 4:00 - 5:00 SEM exercise: turning a theory into a path diagram; assessing the identification status of models.
 5:00 Adjourn

WEDNESDAY, MAY 21, 2008

- 8:00 - 9:00 Registrant Check-in and Continental Breakfast
 9:00 - 9:30 Review of Day 1, overview of day 2
 9:30 - 10:30 Lecture 6 The structural model 2:
 Recursive and non-recursive models; missing data; categorical endogenous variables; mean structures
 10:30 - 10:45 Morning Break
 10:45 - 11:45 Lecture 7 Multiple Group Analysis:
 Modeling sub-populations; dummy variable interactions; meaning equivalence; factorial invariance.
 11:45 - 1:00 Lunch Break
 1:00 - 1:45 Worked Example using Amos
 1:45 - 2:45 Lecture 8 SEM for longitudinal data 1:
 Types of panel data; the simplex model; cross-lagged panel models; correlated disturbances
 2:45 - 3:00 Afternoon Break
 3:00 - 4:00 Lecture 9 SEM for longitudinal data 2:
 The latent growth curve model; time functions; fixed v random effect estimators; hybrid models; multiple indicator models; multiple process models.
 4:00 - 5:00 Lecture 10 Review, Summary, Q&A
 5:00 Adjourn

CALCULATOR

Registrants should bring a calculator to the course on both days.

COURSE MATERIALS

Registrants will be provided with a course pack containing course notes.

MEALS

JPSM group continental breakfasts, lunches and refreshments are included in the course fee.

SPONSOR AFFILIATE LIST:

<https://projects.isr.umich.edu/jpsm/sponsorlist.cfm>

FEES

The registration fee for staff at sponsoring agencies and affiliates is \$600, \$600 for full-time university students, and \$810 for other participants. Payment by credit card is required. Post registration payment may be done online using the registration number or by calling (800) 937-9320. Payment is required by May 6, 2008.

REGISTRATION

Online registration is required. Confirmation of acceptance will be sent after the registration form has been processed. Registration is not firm until you receive an acceptance email. The email will include directions to the course. The automatic web registration number is not an acceptance letter. Payment by credit card is required. Post registration payment may be done online using the web generated registration number or by calling (800) 937-9320. The registration deadline is May 6, 2008.

CANCELLATION

Please notify JPSM as soon as possible if you need to cancel your registration. Cancellation requests should be done online. You will be fully reimbursed if you cancel by May 6, 2008. Cancellation May 7-12, 2008 will require a \$100 administrative fee, the remainder will be reimbursed. Cancellation on or after May 13, 2008 is subject to the full fee amount.

LOCATION

The course will be held at the Hyatt Regency Bethesda, One Bethesda Metro Center, at 7400 Wisconsin Avenue and Old Georgetown Road in Bethesda, Maryland. The hotel is in the heart of Maryland's high-tech corridor with convenient access to the Capital Beltway and the Metro subway system. The Hyatt is accessible via the Metro Red Line at the Bethesda Metro stop. For overnight room reservations, call the Hyatt Regency Bethesda at 301-657-1234. There is a parking garage located directly underneath the Hotel which offers both valet and self-parking.

The garage is not owned or operated by the Hyatt Regency.

<http://bethesda.hyatt.com/property/areaguide/maps/index.jhtml>

FELLOWSHIPS

The Joint Program in Survey Methodology strives to increase the number of survey professionals from groups traditionally under-represented in the field. As part of the effort, a limited number of competitive fellowships are available for African-Americans, Hispanic Americans, Latinos, and Native American Indians for the short course. The registrant must be a US citizen or permanent resident.

Applicants should submit:

- (1) A 500-word essay describing their reasons for wanting to attend this short course, focusing on how their participation will enhance their chosen career path. The essay should indicate the applicant's background (i.e. African-American, Hispanic American, Latino, or Native American Indian).
- (2) A recommendation written by a person knowledgeable about the applicant's aptitude and interest in survey methodology.
- (3) The course online registration form.

If you are applying for a fellowship, please be certain to register early. Applications are due before April 22, 2008 JPSM will evaluate the applications and inform the successful applicants by April 29, 2008. The fellowship covers the registration fee for the course, including the cost of materials to be distributed during the course and the group lunch.

JPSM CITATION PROGRAMS

The citation programs are built around the JPSM short courses. The JPSM Citation in Introductory Survey Methodology is designed to provide the working professional and interested students with state-of-the-art knowledge about current principles and practices for conducting complex surveys combined with practical skills of day-to-day utility. The JPSM Citation in Introductory Economic Measurement is designed for professional staff requiring a grounding in the principles and practices of economic measurement. Completion of the citation programs involves taking a semester-length JPSM credit-bearing course and eight JPSM short courses, of which four are specified core courses. For information on the Certificate and Citation Programs visit the website at <http://www.jpsm.org> or call 301-314-7911.

INQUIRIES

Questions for this course should be directed to the JPSM Short Course, Institute for Social Research, University of Michigan, 426 Thompson Street, Room 4050, Ann Arbor, MI 48104-2321, Phone: (800) 937-9320, Fax: (734) 764-8263, Email: jpsmshort@isr.umich.edu .

JPSM HOME PAGE: <http://www.jpsm.org> Click on "Short Courses".

COURSE LISTS, REGISTRATION, PAYMENT AND CANCELLATION:

<http://projects.isr.umich.edu/jpsm/>

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<https://projects.isr.umich.edu/jpsm/sponsorlist.cfm>

Primary Funding for JPSM is from the Interagency Council

Announcement

SPRING 2008 SCHEDULE

The Joint Program in Survey Methodology, University of Maryland, College Park, MD

To enroll in a course, apply as a Non-Degree Seeking Student (Advanced Special Student) Please see instructions at www.jpsm.org

To Register please go to www.testudo.umd.edu

SURV400 Fundamentals of Survey Methodology; (3 credits) Grade Method: REG.

Prerequisite: STAT100 or permission of department. Credit will be granted for only one of the following: SURV699M or SURV400. Formerly SURV 699M. Introduces the student to a set of principles of survey design that are the basis of standard practices in the field. The course exposes the student to both observational and experimental methods to test key hypotheses about the nature of human behavior that affect the quality of survey data. It will also present important statistical concepts and techniques in simple design, execution, and estimation, as well as models of behavior describing errors in responding to survey questions. Not acceptable to graduate degrees in SURV.
0101 Tourangeau, R. Th 3:00pm- 5:40pm (LEF 2208)

SURV410 Introduction to Probability Theory; (3 credits) Grade Method: REG/P-F/AUD.

Prerequisite: MATH240; and MATH241 or permission of department. Also offered as STAT410. Credit will be granted for only one of the following: SURV410 or STAT410. Probability and its properties. Random variables and distribution functions in one and several dimensions. Moments, characteristic functions, and limit theorems.

0101 Freidlin, M. Tu Th 2:00pm- 3:15pm (MTH B0425)

0201 Brin, M. Tu Th 9:30am-10:45am (MTH 0403)

SURV420 Introduction to Statistics; (3 credits) Grade Method: REG/P-F/AUD.

Prerequisite: SURV410 or STAT410. Also offered as STAT420. Credit will be granted for only one of the following: STAT420 or SURV420. Mathematical statistics, presenting point estimation, sufficiency, completeness, Cramer-Rao inequality, maximum likelihood, confidence intervals for parameters of normal distributions, chi-square tests, analysis of variance, regression, correlation, and nonparametric methods. Course is offered in the spring semester only.

0101 Xu, J. Tu Th 5:00pm- 6:15pm (MTH B0421)

SURV616 Statistical Methods II; (3 credits) Grade Method: REG/AUD.

Prerequisite: SURV 615. Builds on the introduction to linear models and data analysis provided in Statistical Methods I. Topics include analysis of longitudinal data and time series, categorical data analysis and contingency tables, logistic regression, log-linear models for counts, statistical methods in epidemiology, and introductory life testing.

0101 Miller, S. Meets 01/07/08-04/16/08 Tu 3:30pm- 6:10pm (LEF 1218)

SURV625 Applied Sampling; (3 credits) Grade Method: REG/AUD.

Prerequisite: statistics course approved by the department. Practical aspects of sample design. Topics include: probability sampling (including simple random, systematic, stratified, clustered, multistage and two-phase sampling methods), sampling with probabilities proportional to size, area sampling, telephone sampling, ratio estimation, sampling error estimation, frame problems, nonresponse, and cost factors. This course will be held at BLS, Washington, DC; shared with UNC; and is being co-taught by Paul Levy and Vince Iannacchione.

0101(63650) STAFF Meets 01/17/08-04/16/08 MW 3:00pm- 4:30pm (Arranged)

0201(63651) Lepkowski, J. W 3:00pm- 6:00pm (LEF 1218)

SURV630 Questionnaire Design; (3 credits) Grade Method: REG/AUD.

The stages of questionnaire design; developmental interviewing, question writing, question evaluation, pretesting, and questionnaire ordering and formatting. Reviews of the literature on questionnaire construction, the experimental literature on question effects, and the psychological literature on information processing. Examination of the diverse challenges posed by self versus proxy reporting and special attention is paid to the relationship between mode of administration and questionnaire design.

0101(63661) Kreuter, F. Meets 01/09/08-05/08/08 Th 3:00pm- 5:40pm (LEF 1218)

SURV640 (PermReq) Survey Practicum I; (2 credits) Grade Method: REG.

Prerequisite: SURV640 and SURV641 must be taken in consecutive semesters. Restricted to degree seeking students in JPSM or permission of the instructor. For SURV majors only. Credit will be granted for only one of the following: SURV620 or SURV640. Formerly SURV 620. First part of an applied workshop in sample survey design, implementation, and analysis. Problems of moving from substantive concepts to questions on a survey questionnaire, designing a sample, pretesting and administering the survey.

0101(63671) Presser, S. M 4:00pm- 6:00pm (LEF 1218)

SURV650 Economic Measurement; (3 credits) Grade Method: REG/AUD.

Prerequisite: One course in intermediate microeconomics. Credit will be granted for only one of the following: SURV650 or SURV699L. Formerly SURV 699L. An introduction to the field of economic measurement. Sound economic data are of critical importance to policymakers, the business community, and others. Emphasis is placed on the economic concepts that underlie key economic statistics and the translation of those concepts into operational measures. Topics addressed include business survey sampling; the creation of business survey sampling frames; the collection of data from businesses; employment and earnings statistics; price statistics; output and productivity measures; the national accounts; and the statistical uses of administrative data. Lectures and course readings assume prior exposure to the tools of economic analysis. This course will be held at the Bureau of Labor Statistics in Washington, DC.

0101(63672) Abraham, K. Tu 2:30pm- 5:10pm (Arranged)

SURV699 Special Topics in Survey Methodology: Readings in Survey Methodology; (1-4 credits) Grade Method: REG/AUD.

0101(63681) Tourangeau, R. Time and room to be arranged

SURV699B Special Topics in Survey Methodology: Nonresponse in Surveys; (3 credits) Grade Method: REG/AUD.

[Click here for more SURV course information.](#)

0101(63701) Raghunathan, T. Sa. 8:00am-10:30am (LEF 1218)

SURV699D Special Topics in Survey Methodology: Envisioning the Survey Interview of the Future; (1-4 credits) Grade Method: REG/AUD.

0101(63711) Conrad, F. W 3:00pm- 5:40pm (LEF 1208)

SURV699M Special Topics in Survey Methodology: Measurement Error Methods; (1-4 credits) Grade Method: REG/AUD.

0101(63741) Miller, S. Th 3:00pm- 5:40pm (LEF 1218)

SURV699N Special Topics in Survey Methodology: Introduction to Survey Statistics Using Computers; (3 credits) Grade Method: REG/AUD.

Th 6:00pm- 8:40pm (LEF 1218)

SURV721 Total Survey Error II; (2 credits) Grade Method: REG/AUD.

Prerequisite: SURV720. Degree seeking in JPSM or permission of instructor. Credit will be granted for only one of the following: SURV720 and SURV721; or SURV723. Formerly SURV 723. Second part of a review of total survey error structure of sample survey data. Reviewing current research findings on the magnitudes of different error sources. Students will continue work on an independent research project which provides empirical investigation of one or more error source. An analysis paper presenting findings of the project will be submitted at the end of the course.

0101(63751) Tourangeau, R. Meets 01/07/08-05/16/08 M 6:00pm- 7:40pm (LEF 2208)

SURV742 Inference from Complex Surveys; (3 credits) Grade Method: REG/AUD.

Prerequisite: STAT 440. Inference from complex sample survey data covering the theoretical and empirical properties of various variance estimation strategies (e.g., Taylor series approximation, replicated methods, and bootstrap methods for complex sample designs). Incorporation of those methods into inference for complex sample survey data. Variance estimation procedures applied to descriptive estimators and to analysis of categorical data. Generalized variances and design effects presented. Methods of model-based inference for complex sample surveys examined, and results contrasted to the design-based type of inference used as the standard in the course. Real survey data illustrating the methods discussed. Students will learn the use of computer software that takes account of the sample design in estimation.

0101(63761) Valliant, R. Meets 01/07/08-04/18/08 M 3:00pm- 5:40pm (LEF 1218)

SURV744 Topics in Sampling; (3 credits) Grade Method: REG/AUD.

Prerequisite: SURV 440. Advanced course in survey sampling theory.

0101(63771) Montaquila, J Meets 01/04/08-04/18/08 Tu 3:00pm- 5:45pm (LEF 2208)

SURV760 Survey Management; (3 credits) Grade Method: REG/AUD.

Modern practices in the administration of large scale surveys. Alternative management structures for large field organizations, supervisory and training regimens, handling of turnover, and multiple surveys with the same staff. Practical issues in budgeting of surveys are reviewed with examples from actual surveys. Scheduling of sequential activities in the design, data collection, and processing of data is described. This course will be co-taught by Steven Heeringa and Carla Maffeo.

0101(63781) Maffeo, C. Meets 01/10/08-04/18/08 W 3:30pm- 5:45pm (LEF 2208)

SURV772 Survey Design Seminar; (3 credits) Grade Method: REG/AUD.

Formerly: SURV770 and SURV771. For SURV majors only. Not open to students who have completed SURV770 and SURV771. Credit will be granted for only one of the following: (SURV770 and SURV771) or SURV772. Students present solutions to design issues presented to the seminar. Readings are selected from literatures not treated in other classes and practical consulting problems are addressed. This class will run from January 17, 2006 through May 9, 2006.

0101(63791) Kreuter, F. Meets 01/16/08-05/08/08 Tu 3:30pm- 6:00pm (LEF 1208)

SURV829 Doctoral Research Seminar in Survey Methodology; (3-6 credits) Grade Method: REG.

This course will be co-taught by Partha Lahiri and Robert Groves. The First date of this class will be January 19, 2005.

0101(63801) Groves, R. Meets 01/09/08-04/18/08 M. 11:00am- 1:45pm (LEF 1218)

SURV898 Pre-Candidacy Research; (1-8 credits) Grade Method: REG/S-F. Individual Instruction course: contact department or instructor to obtain section number.

SURV899 (PermReq) Doctoral Dissertation Research; (6 credits) Grade Method: REG/S-F. Individual Instruction course: contact department or instructor to obtain section number.

Announcement

George Washington University Course Offerings Spring 2008

The Statistics Department at the George Washington University will offer the following graduate, and special topics undergraduate courses during Spring 2008 (January 14 – May 14, 2008) at the main campus.

Enhance your statistical analysis skills by taking one or more of these courses. Registering as a non-degree student is easy - please visit www.gwu.edu/~regweb/ for pertinent information.

For questions or further information please contact Dr. Reza Modarres, e-mail: Reza@gwu.edu, ph: 202-994-6888.

Undergraduate Courses:

Stat 181: Applied Time Series Analysis. Tuesday, 6:10-8:40 pm.
Instructor: Prof. T. Diaz

What is the difference between a fortune teller with a crystal ball and a forecaster with knowledge of time series techniques? Find out by learning the basic theory and application of regression, exponential smoothing, and the autoregressive integrated moving average (ARIMA) modeling and forecasting of univariate time series. Frequency-domain techniques will also be discussed, including the estimation of spectral density functions and performing tests of white noise and hidden periodicities. SAS will be used to demonstrate numerical examples. Prerequisite: Math 33, Stat 157-8 or 118.

Stat 197: Fundamentals of SAS Programming. Thursday, 6:10-08:40 pm.
Instructor: Prof. R. Teitel

This course is designed to introduce students to the fundamentals of programming and data management using the SAS system. Our goal is to provide a comprehensive understanding of programming, data modification, statistical data management, file handling, and macro writing. The course is divided into three unequal parts. The first part is devoted to the fundamentals of programming using the SAS system. It provides an overview of the programming language, its strengths and weaknesses, and its data model. The second part will concentrate on statistical data management and processing multiple data sets (files). The third part of the course focuses on the components of the macro facility. Prerequisite: Stat 129 or a similar basic computer science course.

Graduate Courses:

Stat 202-10: Mathematical Statistics. Thursday, 6:10-8:40pm.
Instructor: Dr. H. Mahmoud

This is the second part of a two-part series in Mathematical Statistics. The objective is to familiarize students with the concepts of Mathematical Statistics at the graduate level. This course is a prerequisite for MS and Ph.D. students in Statistics and Biostatistics and Ph.D. students in Epidemiology. Graduate students from other related quantitative fields such as Economics, Finance, Engineering, etc. may also find this course very useful and are encouraged to join.

Stat 202 deals mostly with statistical inference (201 deals with probability theory). Topics to be covered include sampling distributions (including Central Limit Theorem), data reduction (including sufficiency, ancillarity and completeness), point estimation (including method of moments,

maximum likelihood and Bayes estimation), properties of point estimators (including unbiasedness, minimum variance, efficiency, Cramer-Rao inequality), hypotheses testing (including likelihood ratio and Bayesian tests, Neyman Pearson Lemma, power and size of a test, p-value of a test), interval estimation (including Bayesian HPD intervals, intervals obtained through inversion of a test statistic or from a pivotal quantity) and asymptotic properties of procedures (including consistency and efficiency of estimators, large-sample confidence intervals, asymptotic distribution of likelihood ratio tests). This is roughly chapters 5-10 of the text: *Statistical Inference* by Casella and Berger (2nd ed.). Prerequisite: Multivariable Calculus (Math 33), Linear Algebra (Math 124) and Stat 201 or equivalent.

Stat 210: Data Analysis. Monday, 6:10-8:40pm.
Instructor: Dr. P. Bonangelino

This course will review statistical principles of data analysis using computerized statistical analysis procedures provided by the Statistical Analysis System (SAS). Specific topics include: graphical displays (density estimation), univariate analyses, multiple regression, collinearity diagnostics, influence diagnostics, data-dependent model biases, analysis of contingency tables and categorical data, logistic regression for qualitative responses, analysis of variance and covariance, and the general linear model. Each week will present a statistical method and sample analyses presented in SAS listings. Each week a data analysis project will be assigned requesting that specific statistical analyses be performed and that the results be presented and interpreted in a typed statistical report. There will be a final exam and each student will also be required to complete an independent data analysis project. Prerequisites: 1) Stat 118, 2) either Stat 157 or 201, and 3) Stat 183 or equivalent or proficiency with SAS.

Stat 226: Advanced Biostatistical Methods. Thursday, 6:10-8:40 pm.
Instructor: Dr. Z. Li

Course outline: Theory of least squares; Missing data and EM algorithm; Random effects model and EM algorithm for longitudinal data analysis; GEE for longitudinal data analysis; sequential analysis of clinical trials; Empirical Bayes methods and meta-analysis. Prerequisites: Stat 201-202 or permission of instructor.

Stat 242: Nonparametric Regression/Regression Graphics. Wednesday, 6:10-8:40pm.
Instructor: Dr. E. Bura

This course focuses on modern regression techniques. The enormous increase in computing power has greatly influenced applied statistical methods, and especially data modeling. In a variety of scientific and business fields and applications, the relationship between one or more variables (the response or output) and a candidate group of explanatory variables (the regressors, predictors or inputs) is under study. The goal is usually modeling this relationship so that the process is understood and possibly used for predicting future values of outputs. The traditional statistical approach was to use linear regression for fitting and prediction. Even though linear regression has been an overall successful data modeling tool, also due to its computational simplicity, it superimposes mathematical models to the data that may be oversimplified. In contrast, nonparametric regression techniques are entirely data-driven. Linear regression will be presented as a starting point to provide the essential framework for the course. Nonparametric regression, smoothing techniques (e.g., kernel regression, nearest neighbor regression, local polynomial fitting) additive models, regression trees, neural networks and dimension reduction methods will be covered. In addition, extracting information and building inferential procedures from plots associated with regression models, i.e., regression graphics, will be presented.

Stat 259: Advanced Probability. Wednesday, 6:10pm-8:40pm.
Instructor: Dr. H. Mahmoud

This course will cover advanced topics in probability, which are very important for stochastic modeling and statistical analysis. The course is valuable to those who wish to Topics to be covered include: Conditional expectation and martingales; classes of distribution: infinitely divisible, stable; exchangeable random variables; Brownian motion and connection to empirical distribution functions: Kolmogorov-Smirnov tests, the Lilliefors test; stochastic differential equations; Brownian sheets and Markov fields (if time permits). Prerequisite: Stat 257 or an equivalent measure-theoretic introduction to probability.

Stat 264: Advanced Statistical Theory II. Tuesday, 6:10-8:40pm.
Instructor: Dr. S. Bose

This is the second part (along with Stat 263) of a two-semester sequence in advanced statistical theory. The course covers asymptotic theory, hypothesis testing, and confidence regions. Useful asymptotic theory for estimation and hypothesis testing is covered. In addition, one learns the theoretical foundation for the construction of UMP tests and UMP among unbiased (UMPU) tests, in the exponential family, and in particular, the normal family and the concepts of similarity and Neyman structure; confidence sets, uniformly most accurate (UMA) confidence sets and UMA unbiased confidence sets. If time permits, we will also discuss Bayesian hypothesis testing and its differences with frequentist hypothesis testing, posterior probability of hypotheses, Bayes factor, and robust Bayesian hypothesis testing. Prerequisite: Stat 257, and 263.

Stat 273: Stochastic Processes. Monday, 6:10-8:40pm.
Instructor: Dr. N. Singpurwalla

Stochastic processes constitute one of the most important toolkits of modern statistical science. They are germane to a wide variety of topics in the engineering, the economic, the physical, the medical, and the social sciences. Examples are time series, survival analysis, reliability, operations research, finance, and physics. The aim of this course is to provide the participants a thorough grounding in the foundations of the underlying theory behind stochastic processes, and to take them through its key topics such as the Bernoulli process, the homogeneous and non homogeneous Poisson processes, Markov Chains and Markov processes, doubly stochastic counting processes, and the hidden Markov models, renewal processes, and then all the way to the Brownian motion, the Levy, and the gamma processes. Each process will be motivated by the practical scenario which spawns the process. Besides statistics and biostatistics, the course should be of relevance to students in business, economics, engineering, biology and the physical sciences.

Stat 288. Modern Theory of Survey Sampling. Tuesday, 6:10pm-8:40pm.
Instructor: Dr. P. Chandhok

The main objectives of the course are to provide a rigorous treatment of sampling theory and its applications. With this background the student can modify the existing theory, develop new theory, and better understand its applications. The prerequisites for the class are Statistics 287, or equivalent. Statistics 287 introduces simple random sampling with and without replacement, systematic sampling, unequal probability sampling with and without replacement, ratio estimation, difference estimation and regression estimation. This course will introduce the following areas: sampling and subsampling of clusters; multistage sampling; double sampling; repetitive surveys; errors of response and nonresponse and some ways of dealing with them, for example, imputation and; small-area estimation.

Statistics 289-10: Statistical Methods for Bioinformatics. Tuesday, 6:10-8:40pm.
Instructor: Dr. Y. Lai

Bioinformatics is a rapidly growing field in life sciences. It plays an essential role in the current biological and medical studies. In this course, we will focus on microarray data analysis. Microarray technology is an experimental method by which thousands of genes can be printed on a small chip and their expression can be simultaneously measured. Microarrays have been widely used in many biological and medical studies to understand genome-wide regulation as well as to detect novel disease related genes. However, due to the system noise and small sample size of microarray data, their statistical analysis can be challenging. Microarray data analysis involves many different statistical topics. This seminar course will focus on the following topics: genomics and microarray basics, image processes, data transformation and normalization, differential expression detection, multiple hypothesis testing, classification and cluster analysis, and other microarray related studies. Prerequisite: Stat 157&158 or equivalent, or permission of instructor.

Stat 289-11. Stochastic Methods in Finance. Thursday, 6:10pm-8:40pm.
Instructor: Dr. S. Balaji

Since the Chicago Board of option exchange opened in 1973, the options market has grown enormously. A wide variety of novel mathematical tools have been developed and employed to model and predict option prices. The 1973 Nobel Prize in Economics was awarded to Scholes and Merton for their derivation of what is now commonly known as the Black and Scholes formula. Stochastic calculus proves to be a valuable tool in option and derivatives pricing, bond pricing, and pricing of other securities. This course will present fundamental concepts and methods in stochastic calculus techniques. Specific topics will include: binomial representation theorem, Ito's lemma, martingale representation theorem, Black and Scholes formula, HJM interest rate model, bond pricing, and derivatives pricing. The techniques of stochastic calculus, to be discussed in this course, are useful not only in Finance, but also in other areas such as control and filtering theory, queuing and communication networks, and stochastic models in neurosciences. Prerequisites: Probability theory at the level of Stat 201, and multivariable calculus (Math 33 or equivalent).

Announcement

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Students' Corner

A friend of mine once observed that if all scientists published using a p-value of 0.05 as their significance threshold, then we could take a walk through the stacks in the science library, and every 20th paper we passed, on average, would be based on a false positive. (In retrospect, my friend's conjecture seems to be based on an erroneous interpretation of the p-value, but you get the idea.) We got a grim chuckle out of the thought and moved on.

Perhaps we should not have dismissed the thought so easily. This past September, an article appeared in the Wall Street Journal (WSJ) online, entitled "Most Science Studies Appear to Be Tainted By Sloppy Analysis."

http://online.wsj.com/public/article_print/SB118972683557627104.html

It discusses the work of Dr. John Ioannidis, an epidemiologist with joint appointments at the University of Ioannina School of Medicine, in Greece and Tufts University in Medford, Massachusetts. His unsettling thesis is that, for various reasons, most published scientific findings are wrong.

The article drew a swift response from Dr. David Lide, the editor in chief of the CRC Handbook of Chemistry and Physics (who happens to be writing from Gaithersburg, Maryland!). Dr. Lide declares that while he could not speak to the medical research literature as a physical scientist, as far as he could tell there wasn't a problem of sloppy analyses in the physics and chemistry literature.

One statement in the WSJ online article with which Dr. Lide took particular issue was: "No one actually knows how many incorrect research reports remain unchallenged." Dr. Lide writes, "Such statements convey no factual information and plant unfair suspicion on the vast majority who abide by professional standards of integrity." I think he is right; this statement is what writer Stephen Campbell calls an "Unknowable Statistic," in his book "Flaws and Fallacies in Statistical Thinking."

The WSJ online article mentions that Dr. Ioannidis published a paper in 2005 that sported the provocative title "Why Most Research Findings are False." The title says it all. Here is a link to the paper: <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1182327>. I encourage my fellow students to read it, and see what you think. (The WSJ online article also mentions that Dr. Ioannidis has a paper published in the August 2007 issue of JAMA; I will need to look that paper up.)

In the 2005 paper, Dr. Ioannidis gives six "corollaries." Disconcertingly, a majority of the six could very well apply to my own field of interest, functional mapping of the human brain. As an interesting exercise, go through the six corollaries and see how many are applicable to the scientific areas that most interest you.

Dr. Ioannidis points out that negative findings are important, too, but that they tend to be neglected. As an aside, I am reminded of the "File Drawer" problem, whereby the preference to publish positive findings results in a positive bias in the literature, while many of the negative findings are squirreled away into desks and cabinets, languishing unpublished beyond the light of day. Interestingly, an online journal has been established to help remedy this problem, providing a place where scientists can publish null findings (at least, in the social sciences). It is called the Journal of Spurious Correlations (no, not the Journal of Irreproducible Results!); here is the link:

<http://www.jspurc.org/>

Perhaps if you find yourself with a null finding, you can publish it in this journal!

Dr. Ioannidis' 2005 paper has of course received its share of criticism. Perhaps the most serious objection comes from Drs. Steven Goodman and Sander Greenland, from Johns Hopkins University. I won't go into detail here regarding their arguments, but you can find their letter here:

<http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1855693>

(The letter references a more extensive paper: <http://www.bepress.com/jhubiostat/paper135>)

And Dr. Ioannidis' rebuttal is here:

<http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1896210>

Tolkien once wrote a warning not to meddle in the affairs of wizards, and in keeping with that warning I am hesitant to come out on one side or the other in this debate. Some very prominent names are involved, and I am but a mere student, a "sorceror's apprentice." Still, I think it's safe to say that Dr. Ioannidis raises important issues for our consideration, and that the debate is of interest to my fellow students. Whether or not we agree with Dr. Ioannidis' argument, we can all agree that as students of statistics, we owe it to ourselves -- and to the people who will depend upon us for proper data analysis -- to always strive for statistical rigor.

That's all for this month. If you have any feedback on this column or ideas for future topics, please email me at jmm97@georgetown.edu. As always, your thoughts will be greatly appreciated.

Joe Maisog
Georgetown University / Medical Numerics

References:

Campbell SK, "Flaws and Fallacies in Statistical Thinking," Mineola, NY: Dover Publications, 2004. See chapter 4. Available online here:
<http://books.google.com/books?id=3q-GAsILFWoC>

Goodman S and Greenland, Why most published research findings are false: Problems in the Analysis, letter to the editor, PLoS Med 4(4):773.

Hotz, RL, "Most Science Studies Appear to Be Tainted By Sloppy Analysis," Wall Street Journal (WSJ) online, September 14, 2007.

Ioannidis JP, Why most published research findings are false, PLoS Med 2(8):696-701.

Lide DR, "Unfair Suspicion Cast On Scientific Research," letter to the editor, Wall Street Journal (WSJ) online, September 20, 2007.

The Tolkien quote is from "The Fellowship of the Ring," book 1, chapter 3. The full warning is "Do not meddle in the affairs of wizards, for they are subtle and quick to anger."

A minor correction for November's column: I have misspelled my friend's name! :-(- Instead of "Steven J. Fromm," it should be "Stephen J. Fromm."

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 or (703) 373-6645.

CLINICAL TRIAL BIOSTATISTICIANS M.S. and Ph.D. Level Positions

With an opportunity for substantial leadership responsibility in studies of international public health import.

The Biostatistics Center of The George Washington University, founded in 1972, is a leader in the statistical coordination of clinical trials conducted by the National Institutes of Health. We enjoy over \$45 million per year of NIH research funding for major studies in cardiovascular disease, diabetes, maternal/fetal medicine, osteoporosis, urology, and the genetic basis for various diseases. The center has a staff of over 100 with 27 biostatisticians/epidemiologists, including 10 faculty. We are recruiting M.S. and Ph.D. level staff to participate in these and future studies. Please visit our web site (below).

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

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.

The George Washington University is an Equal Opportunity/Affirmative Action employer

Survey Sampling Statistician

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:

Survey Sampling Statistician (Job Code WSS/DRM/7001)

Three or more years of relevant experience in sample design and selection, frames development, weighting, imputation, and variance estimation. Must have a master's or doctoral degree in statistics and have excellent writing skills. Coursework in sample survey design is highly desirable.

Westat offers excellent growth opportunities and an outstanding benefits package including life and health insurance, an Employee Stock Ownership Plan (ESOP), a 401(k) plan, flexible spending accounts, professional development, and tuition assistance. For immediate consideration, please send your cover letter, indicating the Westat Job Code, and resume by one of the following methods to:

Job Code is REQUIRED to apply.

Westat • Attn: Resume System • 1650 Research Boulevard • Rockville, MD 20850-3195

Email: resume@westat.com • FAX: (888) 201-1452

Equal Opportunity Employer. www.westat.com

Statistician

Arbitron Inc. (NYSE: ARB) is an international media and marketing research firm serving radio broadcasters, radio networks, cable companies, advertisers, advertising agencies, out-of-home advertising companies and the online radio industry in the United States and Europe. Our organization is constantly growing and changing to meet the needs of the media industry, and we are always on the lookout for talented individuals like you to join our team!

We are looking for a Statistician to join our Research department in Columbia, MD.

Responsibilities:

- * Develops and refines sample design and estimation methods that meet survey objectives for Arbitron ratings, qualitative and custom services
- * Conducts statistical analyses that provide information about the effectiveness of current and potential sample design and estimation methods, including variance estimation under complex sample designs
- * Develops and evaluates model-based statistical estimation methods for Arbitron ratings and qualitative services
- * Develops methods for estimating components of total survey quality measures
- * Communicates and documents statistical analyses and methods in a logical and understandable manner for internal and external customers
- * Uses SAS or similar statistical analysis software, as well as spreadsheet and database software for data analysis
- * Serves on interdepartmental teams seeking to implement new initiatives that have statistical implications

Requirements:

- * MS or Phd degree in Statistics or related field with emphasis on survey applications and statistical modeling required.
- * Three plus years of experience in survey methods and research,
- * Knowledge of complex sample design methods
- * Experience with variance estimation for complex sample designs
- * Background in model-based and timeseries estimation methods
- * Background in general statistical inference, including regression analysis, logistic regression modeling, analysis of variance, and hypothesis testing
- * Proficiency in SAS in a UNIX environment, including SAS/BASE and SAS/STAT, or similar modules in related statistical software
- * Proficiency with MS Word, Excel, and Access
- * Ability to communicate complex, technical ideas to non-statisticians
- * Ability to function independently and as part of a team
- * Outstanding organizational and communication (verbal and written) skills
- * Aptitude to detect, trouble-shoot, and foresee data and analysis issues and to implement creative solutions.

We believe a company is only as good as its people. Our mission is to create a diverse workplace where each individual is valued and respected.

We offer a comprehensive employment package, including competitive compensation, excellent health care plans, 401K matching, tuition assistance, stock purchase, skill development, flexible work environment and more.

Immigration Sponsorship will not be available for this position. Send your resume to: opsjobs@arbitron.com or Fax: 410-312-8607 Arbitron Inc., Attn: OE Recruiter, 9705 Patuxent Woods Drive, Columbia, MD. 21046

Equal Opportunity Employer
M/F/D/V

Instructor

George Mason University, Volgenau School of Information Technology and Engineering, Department of Statistics (Fairfax campus) is seeking a Visiting Term Instructor from August 25, 2008, to May 24, 2009. The candidate should have a Ph.D. in statistics or a related discipline and experience in teaching statistics at the undergraduate level. The teaching load is four courses in the fall of 2008 and four courses in spring 2009--both calculus- and noncalculus-based undergraduate statistics and probability courses. The minimum salary for the nine-month position is \$55,000. George Mason University is an equal opportunity employer committed to diversity. Applications are accepted only through the internet at <http://jobs.gmu.edu>.



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Washington Statistical Society

Holiday Party



Wednesday December 19, 2007

6:00 to 9:00 pm

Finger Foods and Cash Bar

Gordon Biersch Brewery

900 F Street NW, Washington DC

Close to the Gallery Place Metro Station (green, yellow or red line)

Wings-Hummus Salad-Pizza-Artichoke Hearts

Featuring Gordon Biersch Lagers

\$24 per person

Send Cheque Payable to WSS by December 14, 2007

Send to Yves Thibaudeau, 1037 17th ST S, Arlington, VA 22202

Or contact Yves at (301)-763-1706 or at yves.thibaudeau@census.gov

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