



WSS NEWS

March 2008

WASHINGTON
STATISTICAL
SOCIETY

2008 Wray Jackson Smith Scholarship

Applications due by April 15, 2008! The Government Statistics Section (GSS) and Social Statistics Section (SSS) of ASA are pleased to announce the availability of a scholarship in memory of Wray Jackson Smith, a founding member of the GSS and long-time contributor to Federal statistics. The Wray Jackson Smith Scholarship (WJSS), co-sponsored with the Washington Statistical Society, the Caucus for Women in Statistics, Harris-Smith Institutes, Mathematica Policy Research, and Synectics for Management Decisions, Inc., is intended to reward promising young statisticians for their diligence, thereby encouraging them to consider a future in government statistics. Everyone is encouraged to seek out promising candidates and to urge them to apply.

Type of Project

The WJSS Award provides funding of \$1,000 for use in exploring any of a broad number of opportunities for furthering the development of a career related to government statistics. Applicants are encouraged to be creative in seeking support for a wide variety of uses, including:

- * Tuition, board, and books for courses or short courses
- * Conference attendance
- * Purchase of books, software, data sets, or other supporting materials for research projects related to government statistics.

Activities may relate to any level of government, including Federal, state, and local governmental units. They must be statistical in nature, focusing on data, methodology, analysis, or data presentation. Recent award winners have used the WJSS to fund attendance at the Joint Statistical Meetings, support continued public policy research, and to take short courses to better understand and analyze data for current research.

Application

To apply for a WJSS Award, the following information must be sent to the Wray Jackson Smith Scholarship Committee by April 15, 2008:

- * A completed WJSS Application Form (see: <<http://www.amstat.org/sections/sgovt/>> for current year's form and click on the format you want to use)
- * A proposal of activity to be funded
- * Academic transcript (for current/recent students) or job performance reviews for the past 2 years (for non-students) or equivalent proof of superior academic and/or professional performance
- * Two letters of recommendation.

Please send materials to:

*Wray Jackson Smith Scholarship Committee
c/o Michael P. Cohen
1615 Q Street NW #T-1
Washington DC 20009-6310 USA*

or electronically to: mpcohen@juno.com

Selection Process

The WJSS Committee, consisting of a total of three GSS and SSS members, will review each proposal, based on an established rating scheme, and select the awardee. Each application will be judged based on the following criteria:

- * Stage in Career
- * Past Performance
- * Quality of the Proposed Activity
- * Relevance of Activity to Government Statistics
- * Innovation/Ingenuity of the Proposed Project
- * Feasibility of Completion of Activity
- * Two Letters of Recommendation

Announcements of the awardees are made by June 1, 2008. All applicants are notified by e-mail.

Eligibility

The WJSS is targeted at students and persons early in their career in government statistics. Applicants must have a Bachelor's degree or equivalent level of education. Membership in the Government Statistics Section, Social Statistics Section, or in the ASA is not required. For more information, contact Mike Cohen by e-mail: mpcohen@juno.com

Wray Jackson Smith Scholarship Committee

The Committee for 2008 consists of Michael P. Cohen (Chair) mpcohen@juno.com, Robert A. Kominski Robert.A.Kominski@census.gov, and Stephen Campbell Stephen.Campbell@nist.gov. The Committee members thank Juanita Tamayo Lott for her invaluable advice and assistance.

HERRIOT AWARD NOMINATIONS SOUGHT

Nominations are sought for the 2008 Roger Herriot Award for Innovation in Federal Statistics. The award is intended to reflect the special characteristics that marked Roger Herriot's career:

- Dedication to the issues of measurement;
- Improvements in the efficiency of data collection programs; and
- Improvements and use of statistical data for policy analysis.

The award is not limited to senior members of an organization, nor is it to be considered as a culmination of a long period of service. Individuals at all levels within Federal statistical agencies, other government organizations, nonprofit organizations, the private sector, and the academic community may be nominated on the basis of their contributions.

The recipient of the 2008 Roger Herriot Award will be chosen by a committee comprising representatives of the Social Statistics and Government Statistics Sections of the American Statistical Association, and of the Washington Statistical Society. Roger Herriot was associated with and strongly supportive of these organizations during his career. The award consists of a \$1000 honorarium and a framed citation, which will be presented at a ceremony at the Joint Statistical Meetings in August 2008. The Washington Statistical Society will also host a seminar given by the winner on a subject of his or her own choosing.

The previous recipients of the Roger Herriot Award are Joseph Waksberg (Westat), Monroe Sirken (NCHS), Constance Citro (CNStat), Roderick Harrison (Census Bureau), Clyde Tucker (BLS), Thomas Jabine (SSA, EIA, CNStat), Donald Dillman (Washington State University), Jeanne Griffith (OMB, NCES, NSF), Daniel Weinberg (Census Bureau), David Banks (FDA, BTS, NIST), Paula Schneider (Census Bureau), Robert E. Fay III (Census Bureau), Nathaniel Schenker (NCHS), and Nancy Kirkendall (EIA).

Nominations for the 2008 award will be accepted beginning in February 2008. Nomination packages should contain:

- A cover letter from the nominator that should include references to specific examples of the nominee's contributions to innovation in Federal statistics. These contributions can be to methodology, procedure, organization, administration, or other areas of Federal statistics, and need not have been made by or while a Federal employee.
- Up to six additional letters in support that demonstrate the innovative nature of each contribution.
- A current vita for the nominee, including contact information.

Both individual and group nominations may be submitted. The committee may consider nominations made for the 2007 award, but it encourages resubmission of those nominations with updated information.

For more information, contact Brian Harris-Kojetin, Chair, 2008 Roger Herriot Award Committee, at 202-395-7314, or bharrisk@omb.eop.gov. Completed packages must be received by April 1, 2008. Electronic submissions in MS-Word or as a "pdf" file are strongly encouraged. Please contact the chair if you need to make arrangements to fax or mail a nomination.

THE JEANNE E. GRIFFITH MENTORING AWARD

On receiving the Roger Herriot Award in June 2001, Jeanne E. Griffith said:

One of the most rewarding aspects (of Federal statistics) for me was the opportunity to promote creative activities and energies among my staff...When I have had the blessing to mentor young people in their careers, I have tried to emphasize...(that) only they, themselves, can make the most of (the)...chances that life presents.

Dr. Griffith died in August 2001 after working for more than 25 years in the Federal statistical system. Throughout her career, and especially in her latter senior management positions at the National Center for Education Statistics and the National Science Foundation, one of Jeanne's highest priorities was to mentor and encourage younger staff at all levels to learn, to grow, and to recognize and seize career opportunities as they came along.

The Jeanne E. Griffith Mentoring Award has been established to encourage mentoring of junior staff in the Federal statistical system. It is presented annually, beginning in 2003, to a supervisor who is nominated by co-workers and supervisors, and chosen by the Award Selection Committee.

The award is co-sponsored by the Interagency Council on Statistical Policy, the Council for Excellence in Government, the Washington Statistical Society, the Social Statistics and Government Statistics Sections of the American Statistical Association, and the Council of Professional Associations on Federal Statistics.

Nominations for 2008 will be accepted beginning in January 2008. The last date for submission of nominations is March 28, 2008, and the Award Committee will make its determination of the award winner by May 9, 2008. The award will consist of a \$1,000 honorarium and a citation, which will be presented at a ceremony arranged by the co-sponsors in June 2008.

The winning mentor will be selected for his or her efforts in supporting the work and developing the careers of junior staff. Examples of typical mentoring activities include:

- Advising junior staff to help them create career opportunities, networking skills, and contacts for growth and development;
- Counseling junior staff and providing resources to help develop their technical writing, analysis, presentation and organizational skills and knowledge;
- Encouraging junior staff growth and career development through attendance and oral presentations at meetings with higher level officials, staffs of other agencies, professional associations, training courses, and conferences;
- Motivating junior staff and building self confidence through feedback on their efforts, being a listener when that is needed, and creating a caring and supportive environment;
- Serving as a role model for junior staff through professional expertise, information and insights, balancing collegial and personal roles, and including everyone across rank, race, ethnicity, and seniority.

For further information on the award, contact Ed Spar, Council of Professional Associations on Federal Statistics (COPAFS) by phone: 703-836-0404; fax: 703-836-0406; or by e-mail at copafs@aol.com. The nomination cover sheet and guidelines form-or a photocopy of it-should be attached to a nomination memorandum or letter. Forms can be obtained by contacting Ed Spar, or by downloading from the COPAFS website at <http://www.copafs.org>. All nominations should be returned to the Jeanne E. Griffith Mentoring Award Committee, c/o COPAFS, 2121 Eisenhower Avenue, Suite 200, Alexandria, VA 22314 no later than March 28, 2008.

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)

March

- 5 Wed. **Generalized Confidence Intervals: Methodology and Applications**
- 6 Thurs. **Bringing Statistical Principles to US Elections**
- 6 Thurs. **Statistics Can Lie But Can Also Correct for Lies: Reducing Response Bias in NLAAS via Bayesian Imputation**
- 13 Thurs. **A Semiparametric Generalization of One-Way ANOVA**

April

- 2 Wed. **Studies in Military Medicine from the Center for Data Analysis and Statistics (CDAS) at West Point**
- 8 Tues. **Using the Peters-Belson Method in EEO Personnel Evaluations**

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

Announcement

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

SIGSTAT Topics for Spring 2008

March 12, 2008: Rasch measurement using SAS procedures

The Rasch measurement model is a latent-trait item response theory model that is being used increasingly to assess and develop multiple-indicator measures of social, psychological, and other phenomena outside of the educational testing field where most of the development of such models has occurred. Specialized software exists to fit response data to Rasch and related models, but for some applications, SAS procedures can also be used. Joint (or unconditional) maximum likelihood models (JML) can be estimated using SAS PROC LOGISTIC. A new STRATA option in PROC LOGISTIC makes it possible to estimate conditional maximum likelihood (CML) models. Marginal maximum likelihood (MML) models can be estimated using PROC NLMIXED. The talk will be presented by Mark Nord.

April 16, 2008: Survival Models in SAS: PROC PHREG 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 begun in October 2007, we'll start Chapter 5: Estimating Cox Regression Models with PROC PHREG.

Topics covered are:

1. The proportional hazards model
2. Partial likelihood
3. Tied data

May 21, 2008: Survival Models in SAS: PROC PHREG – Part 2 (<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 begun in October 2007, we'll continue with Chapter 5: Estimating Cox Regression Models with PROC PHREG.

Topics covered are: Tied data

June 18, 2008: Survival Models in SAS: PROC PHREG – Part 3 (<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 begun in October 2007, we'll continue with Chapter 5: Estimating Cox Regression Models with PROC PHREG.

Topics covered are: Time-Dependent Covariates

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/>.

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

Announcement

**A TWO-DAY WORKSHOP ON
BAYESIAN METHODS THAT FREQUENTISTS SHOULD KNOW
THE UNIVERSITY OF MARYLAND STATISTICS CONSORTIUM
COLLEGE PARK, APRIL 30 -MAY 1, 2008**

Co-sponsors:

The University of Maryland Statistics Consortium

Office of Research and Methodology, National Center for Health Statistics, CDC Survey Research
Methods Section of the American Statistical Association Washington Statistical Society

The main purpose of the workshop is to assess the current state of usage of the Bayesian methodology in different disciplines and to discuss potential issues preventing the applications of the Bayesian methods. The workshop will highlight methods that have broad interest and appeal cutting across the Bayesian/Frequentist divide.

The two-day Program will consist of six plenary sessions, a pair of general lectures (the Statistics Consortium Distinguished Lectures) in a special afternoon session on Wednesday, April 30, and a Poster Session to be held during a general Reception immediately following the general lecture session. The plenary sessions each consist of a 45 minute to 1 hour lecture with a formal discussion wherever possible, followed by floor discussion.

The confirmed participants of the plenary sessions and general lectures are: James O. Berger (Duke University), Snigdhanu Chatterjee (University of Minnesota), Malay Ghosh (University of Florida, Gainesville), Stephen Fienberg (Carnegie Mellon University), Roderick J.A. Little (University of Michigan, Ann Arbor), Carl N. Morris (Harvard University), J.N.K. Rao (Carleton University) and Alan M. Zaslavsky (Harvard University).

Posters that are related to the theme of the workshop will be accepted, subject to space constraints. Please visit the workshop web site <http://www.jpsm.umd.edu/stat/workshop> for detailed information on the workshop, on the Statistics Consortium Distinguished Lectures, and on submission of abstracts for posters. There is no registration fee for attending the workshop, the Statistics Consortium Distinguished Lectures or the reception. We strongly request that you indicate your interest by completing the registration form, which can be downloaded from the website, and sending it to statcons@math.umd.edu or to: Eric Slud, Statistics Consortium, Mathematics Department, Mathematics Building, University of Maryland, College Park, MD 20742, USA, by March 15, 2008. Note that there is no registration fee for attending the workshop.

Program Announcement

- Title:** Generalized Confidence Intervals: Methodology and Applications
- Speaker:** Thomas Mathew, University of Maryland Baltimore County
- Chair:** Myron Katzoff, CDC/National Center for Health Statistics
- Date/Time:** March 5, 2008 (Wednesday) / 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 email your name, affiliation and seminar name to wss_seminar@bls.gov (note that there is an underscore after 'wss') by noon at least two days in advance of the seminar or call 202-691-7524 and leave a message with this information. Bring a photo ID to the seminar. BLS is located at 2 Massachusetts Ave., NE. Take the Red Line to Union Station.
- Sponsor:** WSS Defense and National Security and Public Health and Biostatistics Sections
- Abstract:** The concept of generalized confidence intervals is fairly recent, and is useful to obtain confidence intervals for certain complicated parametric functions. The usual confidence intervals are derived using the percentiles of a pivotal quantity. Generalized confidence intervals are derived based on a generalized pivotal quantity, which is a function of a random variable, its observed value, and also the parameters. In the talk, I will explain the construction of a generalized pivotal quantity and will describe the conditions that they must satisfy. I will then discuss a series of applications of the generalized confidence interval methodology for obtaining confidence intervals for (i) the lognormal mean, (ii) the lognormal variance, (iii) the mean and variance of limited and truncated normal as well as lognormal distributions and (iv) some problems involving random effects models. In each case, I will motivate the problem with specific applications and will also illustrate the results using the relevant data analysis. Some attractive features of the generalized confidence intervals are that they are easy to compute and they exhibit excellent performance even for small sample sizes. We will comment on the situation where some variation on the assumption of normality does not apply.

Program Announcement

- Title:** **Bringing Statistical Principles to US Elections**
- Speakers:** Arlene Ash, Boston University School of Medicine
Mary Batcher, Ernst & Young, LLP
- Discussant:** David Marker, Westat
- Chair:** Wendy Rotz, Ernst & Young, LLP
- Date/Time:** March 6, 2008 (Thursday) / 12:30 - 2 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:** Human Rights Statistics, WSS
- Abstract:** Members of The ASA Special Interest Group on Volunteerism and the ASA Scientific and Public Affairs Advisory Committee have been actively working on issues related to elections. Vote counts seem to be off in some measurable way in some precinct whenever there is an election. The most recent example is in the November 2006 results in the 13th district of Florida where the undervote, apparently due to poor design form, appears to have changed the election outcome. These incidents provide interesting discussions for statisticians and survey methodologists but the more important result is that they undermine confidence in the electoral process.
- Electronic vote tally miscounts arise for many reasons, including hardware malfunctions, unintentional programming errors, malicious tampering, or stray ballot marks that interfere with correct counting. Thus, Congress and several states are considering requiring audits to compare machine tabulations with hand counts of paper ballots in randomly chosen precincts.
- This session will describe some of the analyses that have been used to indicate potential problems. It will also describe work that ASA members have been doing in conjunction with election activists to bring statistical principles to the procedures for sampling precincts for post-election audits of election results.

Program Announcement

Title: **Statistics Can Lie But Can Also Correct for Lies: Reducing Response Bias in NLAAS via Bayesian Imputation**

Speaker: Xiao-Li Meng, Harvard University

Chair: David Cantor, Westat

Date/Time: March 6, 2008 (Thursday) / 3:30 – 4:30 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: This talk is based on the joint work with Liu, Chen and Alegria of the same title. The National Latino and Asian American Study (NLAAS) is a multi-million dollar survey of psychiatric epidemiology, the most comprehensive survey of its kind. Data from the NLAAS was made public in July 2007. A unique feature of NLAAS is its embedded experiments for estimating the effect of alternative interview questions orderings. Although the findings from the experiments were not completely unexpected, the magnitudes of the effects were nevertheless astonishing. Compared to survey results from the widely used traditional ordering, the self-reported psychiatric service-use rates often doubled or even tripled under the new, more sensible, ordering introduced by NLAAS. These findings partially answer some perplexing questions in the literature, e.g., why the self-reported rates of using religious services were typically much lower than results from other sources of empirical evidence. At the same time, however, these new insights come at a price. For example: how can one assess racial disparities when different races were surveyed with different survey instruments, (e.g., the existing data on white populations were collected using the traditional questionnaire ordering) when it is now known that these survey instruments induce substantial differences? The project documented in this paper is part of the effort to address these questions. We do this by creating models for imputing the correct responses had the respondents under the traditional survey not been able to take advantage of skip patterns to reduce interview time. The ability to skip large numbers of questions resulted in increased rates of untruthful negative responses over the course of the interview. The task of modeling the imputation is particularly challenging because of the complexity of the questionnaire, the small sample sizes for subgroups of interests, the existence of high-order interactions among variables, and above all, the need to provide sensible imputation for whatever subpopulation a future user might be interested in studying. This paper is intended to serve three purposes: (1) to provide a published record of the key steps and strategies adopted in creating the released multiple imputation for NLAAS, (2) to alert the potential users of the limitations of the imputed data, and (3) to provide a vivid demonstration of the type of challenges and opportunities typically encountered in modern applied statistics.

Program Announcement

- Title:** A Semiparametric Generalization of One-Way ANOVA
- Speaker:** Benjamin Kedem, University of Maryland
- Chair:** Myron Katzoff, CDC/National Center for Health Statistics
- Date/Time:** March 13, 2008 (Thursday) / 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 email your name, affiliation and seminar name to wss_seminar@bls.gov (note that there is an underscore after 'wss') by noon at least two days in advance of the seminar or call 202-691-7524 and leave a message with this information. Bring a photo ID to the seminar. BLS is located at 2 Massachusetts Ave., NE. Take the Red Line to Union Station.
- Sponsors:** WSS Public Health and Biostatistics and Defense and National Security Sections
- Abstract:** Under the classical one-way ANOVA, with normal data and equal variances, the problem is to test the equality of means. Then, under the hypothesis of normality, the problem reduces to testing equality of distributions. By relaxing the normal assumption, we show how to test for equi-distribution directly and obtain tests that rival the usual t and F tests. The key idea is to "tilt" a reference distribution. This provides estimates for all the distributions from which we have data, using a modified kernel density estimate which is superior to the traditional kernel estimate. The attractive feature of the semiparametric generalization is that it provides BOTH powerful tests and graphical displays of all the estimated distributions. This will be demonstrated using gene expression data. The "tilting" idea has numerous other statistical applications. We shall briefly outline several recent applications.

Program Announcement

- Title:** **Studies in Military Medicine from the Center for Data Analysis and Statistics (CDAS) at West Point**
- Speakers:** LTC Rodney X. Sturdivant, Ph.D., Center for Data Analysis and Statistics (CDAS), Department of Mathematical Sciences, United States Military Academy, West Point, NY
MAJ Krista Watts, M.S., Center for Data Analysis and Statistics (CDAS), Department of Mathematical Sciences, United States Military Academy, West Point, NY
- Chair:** Myron Katzoff, CDC/National Center for Health Statistics
- Date/Time:** April 2, 2008 (Wednesday) / 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, email your name, affiliation and seminar name to wss_seminar@bls.gov (note that there is an underscore after wss') by noon at least two days in advance of the seminar or call 202-691-7524 and leave a message with this information. Bring a photo ID to the seminar. BLS is located at 2 Massachusetts Ave., NE. Take the Red Line to Union Station.
- Sponsors:** WSS Public Health and Biostatistics & Defense and National Security Sections
- Abstract:** The importance of maintaining and improving the health and fitness of soldiers in the Army has always been high. Stresses of combat as an Army at war have made concerns in this area even greater and highlighted new areas where improvements are necessary. The military medical community has responded with new treatment ideas that have resulted in studies that will both contribute to efforts on behalf of our soldiers and impact medical practices more generally. The Center for Data Analysis and Statistics (CDAS) has been involved in several of these studies in support of Walter Reed, Beaumont Army Medical Center and Keller Army Community Hospital. We will discuss several of these studies and the results to include Leishmania detection, ACL repair, air casts, LASEK surgery, incidence rates for injuries among different demographics, lumbar support for air crews and medical leadership.

Program Announcement

- Title:** Using the Peters-Belson Method in EEO Personnel Evaluations
- Speaker:** Michael Sinclair, Director of Statistical Analyses, Equal Employment Advisory Council
- Chair:** Hormuzd A. Katki, National Cancer Institute
- Statistical discussant:** Barry Graubard, National Cancer Institute
- Legal discussant:** Jeffrey Bannon, EEOC
- Date/Time:** April 8, 2008 (Tuesday) / 12:30 - 2:00 p.m.
- Location:** Bureau of Labor Statistics Conference Center, Room 10. Bring a photo ID to the seminar. BLS is located at 2 Massachusetts Ave., NE. Take the Red Line to Union Station.
- Sponsor:** Human Rights Committee
- Abstract:** The Peters-Belson method was developed to examine wage discrimination using linear regression analyses. In application, one conducts a regression analysis on the favored class and applies it to the non-favored class to identify a disparity between the actual and predicted values. Recently, the method was extended to examine health care disparities and other forms of discrimination for binary outcomes via logistic regression. In this paper, we will examine the general properties in personnel hiring discrimination evaluations as compared to a standard regression analysis as related to the size of the applicant pool, the differences in the traits for the favored and non-favored class members, and the employer's uniform consideration applied for factors by class. We will also discuss some of the philosophical and legal issues from selected court cases surrounding the use of this approach relative to a standard regression analysis and the methodology for applying a jackknife variance estimator to measure the statistical precision in the disparities.

JPSM SHORT COURSES

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

INFORMATION, REGISTRATION, PAYMENT AND CANCELLATION:
<https://projects.isr.umich.edu/jpsm/>

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

March 11-12, 2008 (Not yet open for registration) Survey Methods for Businesses and Organizations
Paul Biemer, David Cantor and Robert Gaddie

March 27-28, 2008 (Open for registration) Guidelines for Writing Questions for Standardized
Measurement: A Workshop

Nora Cate Schaeffer

Registration Deadline: March 13, 2008

Information: <https://projects.isr.umich.edu/jpsm/materials/2008-0327.html>

April 17-18, 2008 (Open for registration)

Cognitive Interviewing: A Hands-on Approach

Gordon B. Willis

Registration Deadline: April 3, 2008

Information: <https://projects.isr.umich.edu/jpsm/materials/2008-0417.html>

May 5-6, 2008 (Open for registration)

Sampling and Estimation for Establishment Surveys

Richard L. Valliant and Phill Kott

Registration Deadline: April 25, 2008

Information: <https://projects.isr.umich.edu/jpsm/materials/2008-0506.html>

May 20-21, 2008 (Open for registration)

Applied Structural Equation Modeling

Patrick Sturgis

Registration Deadline: May 6, 2008

Information: <https://projects.isr.umich.edu/jpsm/materials/2008-0520.html>

May 27-28, 2008 (Not yet open for registration) Focus Groups from Start to Finish David Morgan

Primary Funding for JPSM is from the Interagency Council on Statistical Policy

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](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

**Associate Administrator
USDA's Economic Research Service**

The Economic Research Service (ERS) serves as the economic research and policy analytical arm of the U.S. Department of Agriculture (USDA). With 450 employees and a budget of \$82 million, ERS conducts research that informs decision-makers on public programs and policies, which are national and international in scope and impact.

The Associate Administrator shares with the Administrator responsibility for formulating current, intermediate, and long-range policies and programs relating to economic and social science research and analysis and other activities for which ERS is responsible.

The incumbent must have proven ability to:

- * demonstrate in-depth knowledge and understanding of economic, statistical, and social science theory and methods of research
- * coordinate technical and policy matters among large groups of top-level officials/specialists
- * administer complex socio-economic research programs involving highly-trained professionals
- * relate successfully to the research and scientific communities, nationally and internationally
- * communicate technical economic and statistical information to individuals not professionally trained in economics or statistics

Location: Washington, DC

Education: Ph.D. in economics or related social science discipline highly preferred

View the complete position description at: <http://www.jdgsearch.com/active.cgi?id=587>

Submit Resume:

Jennifer Moss

JDG Associates, Ltd

1700 Research Blvd.

Rockville, MD 20850

301-340-2210

moss@jdgsearch.com

**Director, Market and Trade Economics Division
USDA's Economic Research Service**

The Economic Research Service (ERS) serves as the economic research and policy analytical arm of the United States Department of Agriculture (USDA). With 450 employees and a budget of \$82 million, ERS conducts research that informs decision-makers on public programs and policies.

The Market and Trade Economics Division (MTED) is responsible for a program of economic research, intelligence gathering, analysis, and data development and dissemination focused on commodity markets and trade in food and agricultural products.

The Director is responsible for strategically planning current and long-range policies and programs. He/she provides intellectual leadership by developing and clearly articulating to Division management and staff a “vision” of how the Division’s activities will fill important knowledge gaps while addressing Agency and USDA priorities. He/she will strive for a Division research program that directly addresses policy relevant issues, focuses on the contributions that economics can make to those issues’ illumination, and makes the best use of ERS’ comparative advantages.

Location: Washington, DC

Education: Ph.D. in economics or related social science discipline highly preferred

View the complete position description: <http://www.jdgsearch.com/active.cgi?id=586>

Submit Resume:

Jennifer Moss
JDG Associates
1700 Research Blvd.
Rockville, MD 20850
301-340-2210
moss@jdgsearch.com

**Department of Health & Human Services
National Institutes of Health
Eunice B. Shriver National Institute of Child Health & Human Development
Division of Epidemiology, Statistics and Prevention Research
Epidemiology Branch**

Staff Scientist Position

The Epidemiology Branch of the Division of Epidemiology, Statistics & Prevention Research at the Eunice Kennedy Shriver National Institute of Child Health & Human Development is conducting a national search for a qualified candidate to serve as a Staff Scientist for intramural epidemiologic research projects focusing on the human reproduction and development. These projects typically include prospective cohort designs with longitudinal capture of data, biospecimens and endpoints needed for answering questions about the role of environmental and genetic factors involved in human reproductive and developmental outcomes. The successful applicant will be expected to assist in the development and implementation of statistical methodologies for the analysis of data, preparation of scientific papers and other related work as required. The ideal candidate will have strong quantitative epidemiologic or biostatistical graduate training and related experience with an interest in research focusing on the use of longitudinal epidemiological methods for assessing reproductive health, pregnancy or human development.

Intramural Staff Scientists at the National Institutes of Health are expected to have sophisticated epidemiological or biostatistical research knowledge and skills to function independently under the general direction of a senior investigator and as a part of a research team. Qualifications include an earned doctorate in epidemiology or biostatistics, and additional years of postdoctoral experience relevant to the position. Preference will be given to applicants with demonstrated expertise in

reproductive epidemiology and/or epidemiological methods involving longitudinal analysis, survival analysis, proteomics, genetics, and statistical methods for exposure assessment using bio-specimens, as evidenced by publications in peer reviewed journals. Salary will be commensurate with training and experience.

The search will continue indefinitely until a qualified applicant is found. However, no candidate will be considered before March 15, 2008. For additional information regarding substantive aspects of the position, please contact Dr. Germaine Buck Louis (301-496-6155; louisg@mail.nih.gov). Other procedural inquiries and correspondence should be directed to Dr. Ann Trumble, Chair, Search Committee, DESPR, NICHD, 6100 Executive Blvd, Room 7B05, Rockville, Maryland 20852 (trumblea@mail.nih.gov). To apply, please submit a cover letter, curriculum vitae, statement of research interest and experience, and three letters of reference and forward to the Search Committee Chair.

DHHS and NIH are Equal Opportunity Employers

**Assistant or Associate Professor
Biostatistics**

**The George Washington University
Department of Epidemiology and Biostatistics
School of Public Health and Health Services**

The Department of Epidemiology and Biostatistics and The Biostatistics Center are recruiting for a dynamic full-time faculty member in Biostatistics at the Assistant or Associate Professor level. 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 be part of a data coordinating center conducting clinical trials and epidemiologic studies in diabetes at The Biostatistics Center. Rank, salary and employment in either a tenure or non-tenure track position will be commensurate with experience.

Under the leadership of its 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 School of Medicine and Health Sciences, the Veterans Administration Hospital, Children's National Medical Center, the National Cancer Institute, the Department of Defense, the DC Department of Health and Elizabeth Glaser Pediatrics AIDS Foundation.

The Biostatistics Center is renowned for its leadership as a coordinating center for multi-center clinical trials in multiple disciplines sponsored by the National Institutes of Health, and specifically as the biostatistical coordinating center for the Diabetes Prevention Program (DPP). The DPP, funded by the National Institute of Diabetes and Digestive, and Kidney Diseases, is a national study group of leading academic centers that has a randomized trial of interventions to prevent type 2 diabetes in subjects with impaired glucose tolerance.

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 started to admit students in the fall semester of 1995. There are currently 14 students matriculated in the PhD degree program in biostatistics and 11 students matriculated in the MS degree program in biostatistics.

Responsibilities of the position will include teaching upper level courses in theoretical and applied biostatistics, mentoring masters and doctoral students in biostatistics; clinical trial design and methodology, and data analysis at The Biostatistics Center, and developing an externally-funded research program.

Basic Qualifications: Applicants must hold a doctoral degree in biostatistics or statistics, strong verbal and written communication skills, some experience in teaching at a graduate-level biostatistics degree programs, experience with clinical trials, in particular with study design and statistical analysis using SAS, and a record of peer-reviewed publications.

Preferred Qualifications: Evidence of mentoring graduate students in biostatistics at the masters and doctoral levels, demonstrated success or potential to contribute to secure externally-funded research grants.

Successful candidate for the position may apply for a Samuel W. Greenhouse Biostatistics Research Enhancement award. This award is provided for a period of one year to the enhancement of biostatistics methodological research. Please check at <http://www.bsc.gwu.edu/bsc/sgaward.pdf> for more information about this award.

Application Procedure: To be considered, interested applicants should submit the following documents electronically: 1) current curriculum vitae; 2) a statement of research interests, 3) a statement of teaching and mentoring experience, and 4) list of 3 references with contact information to:

Search Committee, Biostatistics
c/o Stephanie Panichello, Department Manager
sphshp@gwumc.edu (electronic submissions are strongly preferred)
Department of Epidemiology and Biostatistics
School of Public Health and Health Services
The George Washington University
2300 I (Eye) Street NW, Suite 125
Washington, DC 20037

Review of applications will begin on April 1, 2008 and will continue until the position is filled. Only complete applications will be considered. Applications from women and minorities are strongly encouraged.

GWU SPHHS Webpage: <http://www.gwumc.edu/sphhs/>

The Biostatistics Center Webpage: <http://biostat.bsc.gwu.edu>

The George Washington University is an Equal Opportunity/Affirmative Action Employer.

**Survey Research Manager
Burlington, Massachusetts, USA**

KEMA Inc.'s Sustainable Market Strategies group is seeking a Survey Research Manager with experience in survey design, sampling, data processing, and technical/economic analysis. Familiarity with the energy utility industry, preferably in the area of energy efficiency or renewable energy, is a plus. This position can also be located at our Fairfax, Virginia office.

Tasks will include

Key responsibilities of the position include the following:

- * Design and oversight of quantitative analyses using data from the following sources: original surveys, utility billing systems, building and device-level meters
- * Survey research project management, including development of research plans, budgets, timelines, staffing, reporting, and client coordination
- * Supervision of analysts and data collection subcontractors
- * Statistical analysis and modeling of billing and other utility data using SAS
- * Developing sampling and weighting strategies for primary data collection
- * Statistical analysis of survey data, including development of survey statistics, multivariate analysis, characterization of variability and uncertainty
- * Authoring of related reports or report sections
- * Other duties depending upon interest and capabilities.

What we're asking

The successful candidate will have:

- * Strong quantitative skills
- * Bachelor's degree in Economics, Statistics, Sociology or related discipline; Masters degree preferred
- * Minimum of five years professional experience in survey research and statistical analysis
- * Ability to manage multiple tasks and meet deadlines
- * Good writing and oral communication skills
- * Project management and proposal development experience a plus
- * Team player attitude.

Applicants must be fully authorized to work in the U.S.

What we're offering

KEMA has over 250 energy professionals in offices throughout the United States. KEMA offers a congenial working environment, competitive salaries, and an exceptional benefits package that includes four weeks of earned time off a year.

KEMA is an international company providing energy consulting, technology implementation and market knowledge expertise to 500 energy and utility clients in over 70 countries. With 700+ consultants dedicated to the global utility industry, KEMA professionals include leading authorities and innovators in energy and utility technologies and markets, and business and management processes.

Are you interested?

For consideration, send your resume, including cover letter, to recruitus@kema.com, quoting the job code KSRM-BU-0108 in the subject line.

KEMA is an equal opportunity employer. Visit our website at www.kema.com.

Note from the WSS NEWS Editor

Items for publication in the April issue of the WSS NEWS will be accepted until March 15, 2008. E-mail items to Michael Feil at michael.feil@usda.gov.

Students' Corner

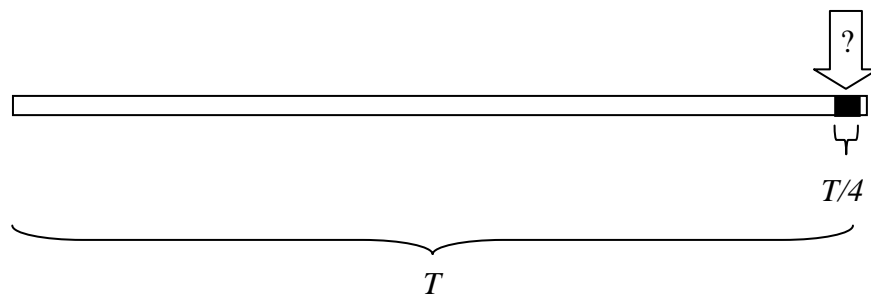
This month I'd like to bring to your attention something that has interested me the past few months. I start by paraphrasing a good example given by the New York Times science journalist John Tierney (Tierney, 2007). Suppose a pop song is playing on the radio, and it is announced that it has been at the top of the charts for 39 days. And assume that there was no special reason for you to have heard the song at this particular point in time; you just happened to have turned on the radio to a random channel and stumbled upon the song and the announcement. (E.g., you were not actively seeking 39-day chart toppers.) Can you estimate some confidence interval for this song's longevity, with only the following two givens:

- A. the duration of time observed thus far, t_{past} (e.g., 39 days); and
- B. the assumption that there was no special reason for you to have observed the song at just that time?

The assumption that there is nothing special about this particular moment of observation is called the *Copernican Principle*, since it is analogous to Copernicus' assumption that there was nothing special about our vantage point in the universe (and thus Copernicus displaced mankind from the center of the universe). But whereas Copernicus was concerned with a *spatial* observation point, here we are talking about a *temporal* one.

Astrophysicist J. Richard Gott III has proposed the following line of reasoning to address the question (Gott, 1993). By the Copernican Principle, there was nothing special about the day that we happened to have observed the pop song. It is therefore unlikely that we have just happened to have caught the song at the very tail end of its time at the top of the charts. Quantitatively, there is only a 1 out of 40 chance that we have caught the song in the final one-40th fraction of its time at the top. (We can generalize this and say that there is only a 1 out of X chance that we have caught the song in the final one-Xth fraction of its time at the top.)

To help visualize the situation, let us represent the song's time at the top of the charts as a line segment, whose length represents the unknown length of time T ; see the figure below. And let the arrow containing the question mark point to the time at which we have observed the pop song in its time at the top. The probability that we just happen to have made our random observation sometime within the final one-40th fraction of T is 1 out of 40, or 2.5%. So, there is only a 2.5% probability that the song will remain at the top for only one more day, before retiring after a 40-day stretch of time.



In exactly the same way, Gott would argue that there's only a 1 out of 40 chance that we have caught the song at the *very first* one-40th fraction of its time at the top. So, there is only a 2.5% probability that the song will remain at the top of the charts for another $39 \times (39 \text{ days}) = 1521$ days.

So, we have determined that there is only a 2.5% probability that the song will remain at the top for only one more week, and that there is only a 2.5% that it will remain at the top for another 1521 days. Thus there is a 95% probability that the song's remaining time at the top, in days, is within the interval [1,1521].

Do you agree with this "disarmingly simple statistical calculation" (Babu and Feigelson, 1993)? Is there a flaw in the logic?

Dr. Gott has most famously applied this sort of reasoning – called the *delta t argument* – (Babu and Feigelson, 1993) to estimate the time remaining before the human species goes extinct. Given that the human species has been around for about $t_{past} = 200,000$ years, and using the Copernican Principle, Dr.

Gott estimates that the time remaining for humans to survive as a species is between 5,100 years ($200,000/39 \approx 5128$) and 7.8 million years ($200,000 \times 39 \approx 7,800,000$). (Gott, 1993). Using the same sort of argument, he has further observed that there is a 50% chance that we're already into the second half of the human space programme's total lifespan. If we take the age of the human space programme to now be about 47 years (last year, Mr. Tierney was using the number 46 years, so I have incremented the number), that means that there is a 50% chance that it will end by the year 2055. Dr. Gott sees space colonization as crucial for ensuring the survival of our species; given the finite estimate of the time remaining for the human species to survive (7.8 million years), he therefore argues that it is urgent that we expend more resources towards space exploration while we still have an active space programme (Gott, 1993; Gott, 1997; Tierney, 2007).

Interestingly, the Wikipedia entry on using the Copernican Principle to estimate the time remaining for the human race (entitled "Doomsday argument") uses the number of human lives lived thus far rather than the number of years that the human species has survived thus far. Using an estimate that 60 billion humans have been born so far, Wikipedia comes up with a much lower upper estimate of the time remaining to the human race: only 9120 more years! Try reading the Wikipedia entry. Given that the total human population has been rapidly increasing during only the past couple hundred years or so, does it make sense to perform the measurement in terms of human lives rather than chronological years? I suppose the argument might be that, because of the rapid increase in population during the past few centuries, Dr. Gott would have been more likely to have been born and therefore alive to make his observations during the past few centuries, because that's when most humans have been alive.

As you might expect, there have been counterarguments and criticisms of Dr. Gott's estimate for the longevity of the human species. In their 1993 book, authors G. Jogesh Babu and Eric D. Feigelson offer two criticisms of Dr. Gott's "delta t argument." Their first criticism concerns the assumption of a uniform distribution for:

1. The underlying survival distribution of species; and
2. The arrival time of the observer (Dr. Gott himself) to obtain his observation.

(Babu and Feigelson, 1993). Item #1 above seems to take issue with the fact that Dr. Gott's application of the 'delta t argument' to the human species' "survival time" ignores actual data that we have for species longevities using fossil evidence; for example, *Homo erectus* lasted about 1.6 million years (Gott, 1997). Thus, Babu and Feigelson seem to be arguing that we are not given merely the single piece of information of how long humans have been around, but we actually have more data; thus they would argue that the given item (A) that I mentioned at the beginning of this column is not actually the only piece of information we have.

Item #2 above seems related to Wikipedia's use of human lives rather than chronological time to estimate the human species' survival time. Here, Babu and Feigelson seem to be arguing that there is indeed special reason for Dr. Gott to have observed the human race at just that time. Thus they would argue we violate the assumption in item (B) mentioned at the beginning of this column.

Babu and Feigelson's second criticism is that Dr. Gott has actually calculated the probability $P(t_{past}/39 < t_{future} < 39 \cdot t_{past}) = 0.95$, but has mistakenly interpreted it as the conditional probability $P(t_{past}/39 < t_{future} < 39 \cdot t_{past} | t_{past} = K) = 0.95$, where K is some known fixed quantity such as 39 days or 200,000 years (Babu and Feigelson, 1993).

The aforementioned Wikipedia entry offers several other rather more subtle counterarguments – "subtle" here meaning that I, being a mere student, do not fully understand them! If you're interested, take a look at them and see whether you can understand them. See especially the "self-referencing doomsday argument rebuttal."

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.

Babu GJ and Feigelson ED, *Astrostatistics*, London:Chapman & Hall, 1996. See Chapter 11, section 4.

Gott JR, Implications of the Copernican principle for our future prospects. *Nature*. 1993; 363:315

Gott JR, A grim reckoning, *New Scientist*. 18 Nov 1997; p. 3636.

Landsberg P, Dewynne J, and Please C, Rise and fall, *Nature*. 1993; 365:384

Monton B, Kierland B, How to predict future duration from present age, *The Philosophical Quarterly*. 2006 Jan; 56(222):16-38.

Tierney J, *A Survival Imperative for Space Colonization*, *New York Times*, July 17, 2007.

Wikipedia entry on the Doomsday Argument: http://en.wikipedia.org/wiki/Doomsday_argument



P.O. Box 752
Suitland, MD 20752

NON-PROFIT
ORG.
U.S. POSTAGE
PAID

Washington
Statistical
Society

President Michael P. Cohen 202-232-4651	Past President Jill Montaquila 301-517-4046	President-Elect Karol P. Krotki 202-728-2485
Secretary Chris Moriarity 301-458-4380	Treasurer Daniell Toth 202-691-7380	
Vice Chair for District 2 of Council of Chapters Glenn White 202-327-6414	Council of Chapters Representative Jonaki Bose 240-276-1257	
Representative-at-Large Polly Phipps 202-691-7513 Brian A. Harris-Kojetin 202-395-7314	Allen Schirm 202-484-4686 Jeri Mulrow 703-292-4784	
Student Representative Joe Maisog 703-465-2006		

WSS Program Chairs

Agriculture and Natural Resources Mel Kollander 703-642-8079 Mike Fleming 202-366-5419 Barry Nussbaum 202-566-1493	Economics Linda Atkinson 202-694-5046 Anne Polivka 202-691-7395	Methodology Meena Khare 301-458-4312 Keith F. Rust 301-251-8278
Public Health and Biostatistics Grant Izmirlan 301-496-7519 Myron Katzoff 301-458-4307	Public Policy Michael L. Cohen 202-334-3765 Shelly Martinez 202-395-3147	Quality Assurance and Physical Sciences Amrut Champaneri 202-366-5998 Alan Jeeves 202-366-4194
Defense and National Security Wendy Martinez 703-696-4320 Myron Katzoff 301-458-4307	Human Rights Wendy Rotz 202-327-7822 Hormuzd Katki 301-594-7818	Statistical Computing Charlie Hallahan 202-694-5051 Dean H. Judson 301-763-2057
Short Courses Sylvia Dohrmann 301-610-5119	Social and Demographic Statistics Judy Droitcour 202-512-9145 Promod Chandbok 202-366-2158	Membership John Czajka 202-484-4685 John Dixon 202-691-7516 Timothy Kennel 301-763-6795 Adam Safir 202-974-7822 Fritz Scheuren 202-320-3446
Electronic Mail Committee Michael Greene 301-504-7335 S.V. (Vince) Massimini 703-983-5893	Data Collection Methods Sameena Salvucci 202-484-4215 Nancy Clusen 202-484-5263 Carol Blumberg 202-586-6565 Eugene Burns 202-586-1385	Curtis Jacobs Award Tom Krenzke 301-251-4203
Webmaster Dan Jacobs 301-403-4220	WSS NEWS Editor Michael Feil 202-690-3130	Local Arrangements Kevin Cecco 202-874-0464
Employment Anne Peterson 703-979-1191	Quantitative Literacy Carolyn Carroll 202-320-8709	Quantitative Literacy Workshop Mark Otto 301-497-5872
Video Librarian Phil Kalina 703-725-6600	Quantitative Literacy Poster Competition Stacey Chan 202-327-5914 Ryan Petska 202-327-7245	Financial Advisor and Audit Committee Stuart Scott 202-691-7383 R. Clifton Bailey 703-893-8719
Social Arrangements Yasmin Said 301-538-7478 Yves Thiibaudeau 301-763-1706	WSS Committee on ASA Fellows Steve Cohen 301-427-1466 Dwight Brock 301-517-4026 Carol House 202-720-4333 Fritz Scheuren 202-320-3446	Historian Tom Mule 301-457-8322
Video Coordinator John Dixon 202-691-7516		
Science Fair Coordinator Bob Clickner 301-294-2815		