



# WSS NEWS

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WASHINGTON  
STATISTICAL  
SOCIETY

October 2005

## President's Letter

I am honored to be serving as president of the WSS for the year that began at the end of June. WSS, the largest ASA chapter, also is a very active chapter. With several seminars each month and other special events scattered throughout the year, the opportunities for professional and social interaction with other statisticians in the DC area are many and varied.

I hope to make this a year in which WSS provides even more service to its members. The Board of Directors has added an additional program area, Human Rights, and the program chairs are Wendy Rotz of Ernst and Young and Robie Sangster of the Bureau of Labor Statistics. I already have filled some vacant program chair positions, and I have asked the program chairs to organize at least 3 seminars in the coming year. Of course, some sections will easily surpass that goal.

Although we plan to be even more active this year, that does not mean you have to pay more. In fact, for the second year in a row, the Board has reduced dues. As reported in the September newsletter, beginning in January, the dues will be \$7 for ASA members and \$9 for associate members. This is a \$3 reduction and is made possible by the transition to the electronic newsletter.

Another priority this year also was a priority for John Czajka last year—attracting new members. To that end, John is working with a committee he appointed to not only attract new members, especially those in our area who recently joined ASA, but also to welcome new WSS members. WSS also wants to reach out to the student community. I plan to follow the Boston chapter's lead and have WSS become an affiliate chapter of Mu Sigma Rho, the national honorary society for statistics. We will work with the local universities to encourage student membership in both Mu Sigma Rho and WSS.

One more thing. Having a steady stream of new volunteers is critical to our continued vitality as the organization that we all know. If you have not volunteered in any capacity previously, I urge you to think about doing so. Or think about giving or organizing a seminar. If you are interested, you can contact me at [nctucker@cox.net](mailto:nctucker@cox.net) 202-691-7371.

Let's make this a great year and thank John for a great year last year!

Clyde Tucker

<b>WSS and Other Seminars</b> (All events are open to any interested persons)		
<b>October 19</b>	<b>Wed.</b>	<b>The Use of Contact History Data for Exploring Survey Nonresponse in Federal Demographic Surveys. (A Joint Seminar)</b>
<b>20</b>	<b>Thurs.</b>	<b>Best Practices In Estimating And Reporting Nonresponse Bias</b>
<b>20</b>	<b>Thurs.</b>	<b>Julius Shiskin Award Presentation Methodological Problems with the Consumer Price Index</b>
<b>26</b>	<b>Wed.</b>	<b>A Lifetime in Official Statistics -- A Question &amp; Answer Period with Dr. Ivan Fellegi, Chief Statistician - Statistics Canada</b>
<b>November 2</b>	<b>Wed.</b>	<b>Morris Hansen Lecture Causal Inference Through Potential Outcomes: Application to Quality of Life Studies with 'Censoring' Due to Death and to Studies of the Effect of Job-Training Programs on Wages</b>

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

## Announcements

### WSS AUDIT

The audit of the WSS financial statements for July 1, 2003 through June 30, 2004 has been completed. The auditor thanks the Treasurer for this period, Erin Whitworth Dyal, and the current Treasurer, John M. Finamore, for providing copies of the necessary records. The auditor gives very special thanks to John M. Finamore for two invaluable letters providing a detailed reconciliation of the financial accounts for this period.

The auditor also examined the WSS tax returns for fiscal year 2002 (July 1, 2002 to June 30, 2003) and for fiscal year 2003 (July 1, 2003 to June 30, 2004).

Both treasurers acknowledge that WSS had additional unexplained revenue during fiscal year 2002 in the amount of \$4,479.50. This amount is included in the fiscal year 2003 tax return as "other income (bank account reconciliation)." The auditor did not find any further discrepancies.

As of June 30, 2004, the WSS had an account balance of \$36,616.42. Of this, \$17,513.16 was in a checking account, and \$1,207.56 and \$17,895.70 were in two fixed term CDs.

Michael P. Cohen, WSS Financial Auditor

### SIGSTAT Topics for October 2005 – March 2006

#### October 19, 2005: MATLAB

MATLAB is a high-level language and interactive environment that enables you to perform computationally intensive tasks faster than with traditional programming languages such as C, C++, and FORTRAN. MATLAB is used extensively throughout many fields.

Shawn Bucholtz will give a discussion of the use of MATLAB for econometric analysis, focusing specifically on Spatial Econometric models. He will discuss various MATLAB toolboxes,

including those available to ERS researchers, and his thoughts on the MATLAB user community. He will give a brief overview of the MATLAB Distributed Computing Engine and Toolbox.

#### **November 9, 2005: SAS PROC POWER**

The new POWER procedure performs prospective power and sample size analyses for a variety of goals, such as the following: determining the sample size required to get a significant result with adequate probability (power); characterizing the power of a study to detect a meaningful effect; and conducting what-if analyses to assess sensitivity of the power or required sample size to other factors. Linda Atkinson will be the speaker.

#### **December 14, 2005: SAS PROC MDC**

The MDC (Multinomial Discrete Choice) procedure analyzes models where the choice set consists of multiple alternatives. The procedure supports conditional logit, mixed logit, heteroskedastic extreme value, nested logit, and multinomial probit models. Charlie Hallahan will be the speaker.

#### **January 11, 2006: SAS PROC QUANTREG**

The QUANTREG procedure models the effects of covariates on the conditional quantiles of a response variable by means of a quantile regression. Ordinary least-squares (OLS) regression models the relationship between one or more covariates  $X$  and the *conditional mean* of the response variable  $Y$  given  $X=x$ . Quantile regression extends the regression model to conditional quantiles of the response variable, such as the median or 90<sup>th</sup> percentile. Charlie Hallahan will be the speaker.

#### **February 8, 2006: SAS PROC ENTROPY**

The ENTROPY procedure implements a parametric method of linear estimation based on Generalized Maximum entropy. The ENTROPY procedure is suitable when there are outliers in the data and robustness is required, or when the model is ill-posed or undetermined for the observed data, or for regressions involving small data sets. Charlie Hallahan will be the speaker.

#### **March 8, 2006: SAS PROC GLIMMIX**

The GLIMMIX procedure fits statistical models to data with correlations or nonconstant variability and where the response is not necessarily normally distributed. These models are known as generalized linear mixed models (GLMM). The GLMMs, like linear mixed models, assume normal (Gaussian) random effects. Conditional on these random effects, data can have any distribution in the exponential family. In the absence of random effects, the GLIMMIX procedure fits generalized linear models (fit by the GENMOD procedure). Charlie Hallahan will be the speaker.

SIGSTAT is the Special Interest Group in Statistics for the CPCUG, the Capital PC User Group, and WINFORMS, the Washington Institute for Operations Research Service and Management Science. All meetings are in Room S3031, 1800 M St, NW from **12:00 to 1:00 (note new time)**. Enter the South Tower & take the elevator to the 3<sup>rd</sup> floor to check in at the guard's desk.

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

## Program Announcement

Title: **The Use of Contact History Data for Exploring Survey Nonresponse in Federal Demographic Surveys. (A Joint Seminar)**

Chair: Richard L Bitzer, U.S. Census Bureau

Speakers: Nancy Bates, U.S. Census Bureau  
James M. Dahlhamer, National Center for Health Statistics/Centers for Disease Control and Prevention

Date/Time: Wednesday, October 19, 2005 / 12:30 - 2 p.m.

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

Sponsor: Methodology Section, WSS

Abstracts:

### **Reluctance to Participate in Federal Demographic Surveys: An Exploration of the National Health Interview Survey and Consumer Expenditure Survey using Survey Process Data**

Nancy Bates and Andrea Piani  
U.S. Census Bureau

In 2002-2003, the Census Bureau designed an automated contact history data collection system known as the Contact History Instrument or CHI. The CHI was developed to systematically record the number of contact attempts, mode, date and time of attempt and other details behind interim outcomes in personal visit surveys (e.g., reasons for refusals and strategies attempted).

Using CHI data from the 2005 National Health Interview Survey and the 2005 Consumer Expenditure Survey, we explore reasons why some households are reluctant to participate in the interview process. We investigate the extent of reluctance, what the most frequently cited reasons are, and whether these vary by characteristics such as survey topic, household composition, and other auxiliary variables such as region, urbanicity, or mode of contact. We also report how patterns of reluctance may change as the number of contacts increases. Finally we explore whether some reasons are more highly correlated with the decision to refuse the survey. In closing we offer recommendations how CHI data can be used as a feedback mechanism for improving field productivity and understanding the reasons people participate in federal surveys.

### **Developing Models of Initial Contact in the National Health Interview Survey (NHIS)**

James M. Dahlhamer, Barbara J. Stussman, Catherine M. Simile and Beth Taylor  
National Center for Health Statistics, Centers for Disease Control and Prevention

Response rates in government surveys have been declining over the past two decades raising concerns about the ability of survey estimates to accurately reflect the characteristics of the target population. One of the reasons for declining response rates is the reduced accessibility of households, arising, in part, from increased physical control of access to housing units and household compositions in which no one is home for long periods of time. In an effort to achieve

acceptable rates and quality of response, interviewers need to be as efficient as possible in contacting sample households so as to leave ample time for gaining respondent cooperation. The purpose of this study, therefore, is to identify factors that influence contactability.

The National Health Interview Survey (NHIS), an on-going population-based health survey conducted by the National Center for Health Statistics, Centers for Disease Control and Prevention, recently adopted the stand-alone, Blaise-based Contact History Instrument (CHI). Interviewers use CHI to record critical information on each contact attempt, including mode, date, and time of attempt, features of doorstep interactions, and strategies used for making contact and gaining cooperation. Using core survey and CHI data from the 2005 NHIS, models of initial contact with sample households are developed and tested. In addition to social-environmental (e.g., MSA status, region of residence) and household-level measures (e.g., the presence of children, household size, etc.) known to influence contactability, the role of interviewer strategies (e.g., time and mode of contact attempt, information-seeking behaviors) is assessed. By identifying attributes of difficult-to-contact households and the strategies for improving accessibility, survey procedures can be adjusted to improve the efficiency of field operations.

**Note from the WSS NEWS Editor**

Items for publication in the December issue of the WSS NEWS should be submitted no later than October 25, 2005. E-mail items to Michael Feil at [michael.feil@usda.gov](mailto:michael.feil@usda.gov).

## **Program Announcement**

- Title:** **Best Practices In Estimating And Reporting Nonresponse Bias**
- Chair:** Brian Harris-Kojetin, Office of Management and Budget
- Speaker:** John Dixon, U.S. Bureau of Labor Statistics
- Discussant:** Jill Montaquila, Westat
- Date/Time:** Thursday, October 20, 2005 / 12:30 - 2 p.m.
- Location:** Bureau of Labor Statistics, Conference Center Room 7. To be placed on the seminar list attendance list at the Bureau of Labor Statistics you need to e-mail your name, affiliation, and seminar name to [wss\\_seminar@bls.gov](mailto:wss_seminar@bls.gov) (underscore after 'wss') by noon at least 2 days in advance of the seminar or call 202-691-7524 and leave a message. Bring a photo ID to the seminar. BLS is located at 2 Massachusetts Avenue, NE. Use the Red Line to Union Station.
- Sponsor:** Methodology Section, WSS
- Abstract:** Declining response rates have prompted increasing concern among statistical agencies about potential nonresponse bias. Since most surveys have little information about those who don't respond, estimating the effect of nonresponse on key estimates can be a difficult task. This presentation illustrates some of the methods which may be useful in studying the impact of nonresponse in household surveys using the CPS as an example. Every survey is different, so different methods may be needed depending on the differences in nonresponse and differences in estimates. Using multiple methods and a sensitivity analysis to show what might be a plausible effect of nonresponse is the focus of the talk. Data from the CPS Census match study will serve as the benchmark to evaluate and compare the different methods for nonresponse bias analysis.

## Program Announcement

### WSS Seminar and Julius Shiskin Award Presentation

- Title:** **Methodological Problems with the Consumer Price Index**
- Speaker:** W. Erwin Diewert, Department of Economics, University of British Columbia
- Chair:** Rich Allen, National Agricultural Statistics Service, USDA
- Date/Time:** Thursday, October 20, 2005/ 3:30 to 5:30 p.m.
- Location:** Bureau of Labor Statistics Conference Center, Rooms 7 and 8. To be placed on the seminar attendance list at the Bureau of Labor Statistics you need to e-mail your name, affiliation, and seminar name to [wss\\_seminar@bls.gov](mailto:wss_seminar@bls.gov) (underscore after `wss`) by noon at least 2 days in advance of the seminar or call 202-691-7524 and leave a message. Bring a photo ID to the seminar. BLS is located at 2 Massachusetts Avenue, NE. Take the Red Line to Union Station.
- Sponsor:** Economics Section and Shiskin Award Committee
- Abstract:** The paper outlines the approach statistical agencies used in constructing a Consumer Price Index prior to the appearance of the new international CPI Manual and explains why there was a need for new approaches. The paper explains the main theoretical approaches to index number theory and how they converge on just a few index number formulae that are “best” for each approach. Fortunately, these “best” formulae all closely approximate each other and hence there is no need for national statistical agencies to choose between the competing theoretical approaches in order to define a “target” index concept for their CPI. The paper concludes with a list of 6 main problems associated with constructing a CPI.
- Shiskin Award:** Following the seminar presentation, the Julius Shiskin Award of 2005 will be presented to Professor Diewert, for path-breaking economic theoretical innovations, notably in index number theory, adapted to improve national economic statistics around the world. He has contributed original theoretical work in a wide range of fields, from measurement of capital services to analyses of productivity to applications of duality theory and flexible functional forms. Professor Diewert is a leading economic and statistical theorist who is dedicated to improving economic statistics throughout the world. The Julius Shiskin Award was intended to honor original and important contributions in the development of economic statistics and in their use in interpreting economic events, and is jointly sponsored by the Washington Statistical Society and the National Association of Business Economists.

Please join the Washington Statistical Society on October 20, 2005, at 3:30 p.m. to honor W. Erwin Diewert as we present the award to him and celebrate in a reception following the award.

## **Program Announcement**

**Title: A Lifetime in Official Statistics -- A Question & Answer Period with Dr. Ivan Fellegi, Chief Statistician - Statistics Canada**

**Date/Time:** Wednesday, October 26, 2005; 10:30 a.m. to 12:00 p.m.

**Location:** Morris Hansen Auditorium

**Abstract:** Dr. Ivan Fellegi was appointed Chief Statistician of Canada in 1985. He has served Statistics Canada since 1957 in positions of increasing responsibility. He chaired the Conference of European Statisticians of the United Nations Economic Commission for Europe (ECE), 1993-97. He has been President of a number of statistical bodies including the International Statistical Institute, the International Association of Survey Statisticians, and the Statistical Society of Canada. In 1978 he was appointed to the Commission on the Reorganization of the US Statistical System, established by President Carter. He has served on panels of the National Academy of Sciences. In 1997, he was awarded the Gold Medal by the Statistical Society of Canada and awarded the Robert Schuman medal by the European Community. Dr. Fellegi has published extensively on statistical methods, on the social and economic applications of statistics and on the successful management of statistical agencies. Dr. Fellegi will discuss the importance of mission and leadership in statistical organizations and will answer related questions.

For more information, and to gain access to the Census Bureau for this event, contact Yves Thibaudeau at (301)763-1906 or at [yves.thibaudeau@census.gov](mailto:yves.thibaudeau@census.gov) by Tuesday, October 25.



## Program Announcement

### The 2005 Morris Hansen Lecture

The fifteenth annual Morris Hansen Lecture will be delivered by Donald B. Rubin of Harvard University. The title of his lecture will be "Causal Inference Through Potential Outcomes: Application to Quality of Life Studies with 'Censoring' Due to Death and to Studies of the Effect of Job-Training Programs on Wages." The discussants will be Graham Kalton of Westat, Inc. and Edward L. Korn of the National Cancer Institute. Carol House of the National Agricultural Statistics Service will give opening remarks, and Trena Ezzati-Rice of the Agency for Healthcare Research and Quality will serve as the Chair. The Hansen Lecture series is sponsored by the Washington Statistical Society, Westat, Inc., and the National Agricultural Statistics Service.

The lecture will be held from 3:30 to 5:30 on Wednesday, November 2, 2005 in the Jefferson Auditorium, U.S. Department of Agriculture, South Building, which is located on Independence Avenue, SW, between 12<sup>th</sup> and 14<sup>th</sup> Streets. A reception will follow immediately (from 5:30 to 6:30) in the Jamie L. Whitten Building, across Independence Avenue. The Independence Avenue exit from the Smithsonian METRO station is at the 12th Street corner of the South Building, which is also where the handicapped entrance is located. Attendees who do not require handicapped access should enter at the 5th wing, along Independence Avenue. Please bring a photo ID to facilitate gaining entrance to the building. The lecture is open to the public, there is no admission fee, and an "RSVP" is not necessary.

Abstract of the lecture: Causal inference is best understood using potential outcomes, which include all post-treatment quantities. The use of potential outcomes to define causal effects is particularly important in more complex settings, i.e., observational studies or randomized experiments with complications such as noncompliance. This lecture deals with the issue of estimating the causal effect of a treatment on a primary outcome that is "censored" by an intermediate outcome, for example, the effect of a drug treatment on Quality of Life (QOL) in a randomized experiment where some of the patients die before their QOL can be assessed. Because both QOL and death are post-randomization quantities, they both should be considered potential outcomes, and the effect of treatment versus control on QOL is only well-defined for the subset of patients who would live under either treatment or control. Another application is to an educational program designed to increase final test scores, which are not defined for those who drop out of school before taking the test. A further application is to studies of the effect of job-training programs on wages, where wages are only defined for those who are employed, and thus the effect of the job-training program on wages is only well-defined for the subset of individuals who would be employed whether or not they were trained. Some empirical results are presented from Zhang, Rubin, and Mealli (2004), which indicate that this framework can lead to new insights because the analysis is not predicated on traditional econometric assumptions.

About the lecturer: Donald B. Rubin is the John L. Loeb Professor of Statistics and former Chairman of the Department of Statistics at Harvard University, where he has taught for over 20 years. Professor Rubin has over 300 publications, including several books, on a variety of topics, including causal inference, missing data, sample surveys, computational methods, Bayesian statistics, and applications in many areas of social and biomedical science; and he is among the most highly cited mathematical scientists in the world. Among his many honors and awards, he is a Fellow of the American Statistical Association, the Institute of Mathematical Statistics, and the American Association for the Advancement of Science, a past John Simon Guggenheim Fellow, a member of the International Statistical Institute and the American Academy of Arts and Sciences, a past Fisher Lecturer at the Joint Statistical Meetings, and a recipient of two of the most prestigious awards available to statisticians: the Samuel S. Wilks Medal of the American Statistical Association and the Emanuel and Carol Parzen Prize for Statistical Innovation. Professor Rubin holds an A.B. degree (psychology) from Princeton University, and M.S. (computer science) and Ph.D. (statistics) degrees from Harvard.

## Announcements

### 2005 Science Fair Winners

WSS presented awards to 57 Washington area students at five regional science fairs this spring, in the District of Columbia, Fairfax County, Montgomery County, Northern Virginia, and Prince George's County. Since 1986, WSS has been recognizing students whose science fair projects demonstrate excellence in the application of statistical methods. Since 1996, The Gallup Organization has made an annual donation of \$1000 for prizes. This year, a total of \$600 was divided among 5 first place winners (prizes ranged between \$75 and \$150) and the balance used to purchase ASA school memberships for the winners' schools. There were 9 second place winners and each received a copy of *Statistics: A Guide to the Unknown*, third edition, by Tanur, et al. All first and second place winners also receive a one-year subscription to STATS magazine. Others received certificates of honorable mention. The judging was coordinated by Bob Clickner. Thanks to all WSS members who volunteered as judges. They are: Lee Abramson, Jeff Bailey, Dwight Brock\*, Gene Burns, Promod Chandhok, Bill Cleveland, Bob Clickner, Michael Cohen\*, Mike Fay, Gloria Gridley\*, Gene Heyman, Tzu-Cheg Kao, Jurate Landwehr, Ruey-Ping Lu, Lou Mariano, Michael Messner, Fred Olson, Arnold Reznek, John Rogers, Wendy Rotz, Sid Schwartz\*, Stuart Scott, Mike Stoto, Glenn White\* and Lorie Wijntjes. (\* Chief Judge).

### Second NIU Workshop on Longitudinal Data Analysis

**October 20 – 21, 2005**

The Division of Statistics at Northern Illinois University (NIU) is pleased to host the second workshop (the first was held in November, 1997) with the theme of **“Recent Developments in Longitudinal Data Analysis With Emphasis on Missing Data.”**

As before, it will be led and taught by Dr. Edward F. Vonesh of Baxter Healthcare Corporation, who is a leading researcher in the area with over twenty five years of experience in the healthcare industry.

The number of participants is limited to forty. For more details on the scientific content , registration, accommodation and other logistics ,please see <http://www.niu.edu/CLASEP> .

For any remaining questions or concerns, please contact Mohsen Pourahmadi at [pourahm@math.niu.edu](mailto:pourahm@math.niu.edu) or (815) 753-6829.

## Employment

As a service to local statisticians, *WSS News* provides notification of employment opportunities and description of those seeking employment here in the Washington, DC, area. Readers are encouraged to take advantage of this feature of the newsletter. The deadline for inserting notices is five (5) weeks before the publication date. Those interested should email or call Anne Peterson, at [apeterson@insightpolicyresearch.com](mailto:apeterson@insightpolicyresearch.com) or (703) 387-3032.

### WESTAT

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 1,700 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/5001)**

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 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](mailto:resume@westat.com); FAX: (888) 201-1452. We are an Equal Opportunity Employer.

#### **Tenure Track Position**

The Department of Mathematics and Statistics in the College of Arts and Sciences at American University has an opening for a tenure track assistant professor in Statistics or Mathematics for Fall 2006.

Qualifications: earned doctorate in Mathematics or in Statistics by Fall 2006, as well as evidence of effective teaching and either a record of or the potential for continuing productive scholarship.

Responsibilities: teaching undergraduate and graduate level mathematics or statistics courses; conducting research; advising and mentoring students, with particular sensitivity to women and minority students; institutional service.

Application review will begin immediately and continue until the position is filled. Submit letter of application and vitae to Search Committee, Department of Mathematics and Statistics, American University, 4400 Massachusetts Avenue NW, Washington, DC 20016-8050. Have official transcripts and three letters of reference sent directly to the department. At least one letter should specifically mention teaching experience.

All applicants are encouraged to review full application instructions, available at [www.mathstat.american.edu/positions](http://www.mathstat.american.edu/positions), or from the department at (202) 885-3124, or by email at [mathstat@american.edu](mailto:mathstat@american.edu). American University is an Equal Employment Opportunity / Affirmative Action employer, committed to a diverse faculty, staff, and student body. Women and minority candidates are strongly encouraged to apply.

### **PricewaterhouseCoopers LLP Statistician Positions**

PricewaterhouseCoopers LLP is seeking interested applicants for **Statistician** positions with a minimum of two years of related experience for our Washington, DC office. A Master's or Doctoral degree in statistics is required. Applicants should have strong communication skills and SAS programming experience.

Our Advisory Services practice provides comprehensive analytic, financial, economic and strategic advice to companies with complex business problems. Statisticians and economists within our practice work together to develop practical solutions for our government and commercial clients, through the use of sampling applications, statistical and economic modeling, forecasting and prediction, and the ability to process and analyze large volumes of data.

For more information, please contact Dr. Jessica Pollner by email at [Jessica.Pollner@us.pwc.com](mailto:Jessica.Pollner@us.pwc.com) or phone at 202-822-4040.

### **Analysis Positions**

#### **THE COMPANY**

Fannie Mae is a Fortune 20, shareholder-owned company with a public-spirited mission: to tear down barriers, lower costs, and increase the opportunities for homeownership and affordable rental housing for all Americans. For more information about Fannie Mae and our career opportunities, please visit [www.fanniemae.com](http://www.fanniemae.com)

The position supports the ongoing activities of the Predictive Analytics and Geo-Services team within the Data Warehouse. It is expected that the candidate will work closely with the manager of the team and internal clients on projects supporting the lines of business. The following work breakdown is likely over the course of a year but at any point in time the distribution may differ drastically.

Data Mining: May develop, plan, lead and/or support targeted data mining efforts. (25%)

Spatial/Statistical Analytics: May design, perform and present various spatial analyses of data. (25%)

Data Quality Initiatives: May design, plan, lead and/or participate in data quality initiatives within the data warehouse. (25%)

Other Consulting/Development Tasks: Attend meetings; handle special projects, other tasks as assigned. (25%)

**Qualifications:**

Successful candidates will possess an advanced degree in statistics, mathematics, economics, computer science, the hard sciences or engineering or have a BS in one of these fields and significant related work experience. Prior related work experience in a similar position is preferred. More advanced degrees in any of these fields are preferred. Candidates must have strong organizational and communications skills. Preference will be given to candidates with strong consulting and writing skills in particular. Candidates are required to have substantial knowledge of at least 3 of the following areas: Bayesian statistics, spatial statistics, non-parametric methods, machine learning, data mining. Candidates are required to have demonstrable familiarity with at least one of the following programming languages: Java, C, C++.

Preference will be given to candidates with a background in SAS, but at a minimum candidates should be experienced with one of the following mathematical programming languages: SAS, SPSS, S-Plus or R, Mathematica, Matlab or Octave. Additional desired proficiencies include: data visualization, experience with the ERSI ARC family of GIS products, familiarity with geocoding, SQL, Unix shell scripting, PERL. This position will be based in downtown Washington, DC.

**COMPENSATION:**

Fannie Mae's compensation and benefits package is very competitive. It is designed to help employees meet varying needs throughout their careers and to reward employee's skills, experience, and potential. Fannie Mae is an equal employment opportunity employer and considers qualified applicants for employment without regard to race, gender, age, color, religion, national origin, marital status, disability, sexual orientation, or any other protected factor



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	<b>Secretary</b> Tom Broene	202-287-1715	<b>Treasurer</b> John Finamore	301-763-5993	
<b>Vice Chair for District 2 of Council of Chapters</b> Carolee Bush	202-997-2264			<b>Council of Chapters Representative</b> Glenn White	202-327-6414
	Leslie Wallace Nancy Bates	<b>Representative-at-Large</b> 301-738-3543 301-763-5248	Michael Sinclair Larry Cox	202-693-1153 301-458-4000	
		<b>WSS Program Chairs</b>			
<b>Agriculture and Natural Resources</b> Mel Kollander Mike Fleming	202-537-6700 202-720-8951	<b>Economics</b> Linda Atkinson Karen Pence	202-694-5046 202-452-2342	<b>Methodology</b> Don Malec Jonaki Bose	301-763-1718 202-366-9979
<b>Public Health and Biostatistics</b> Grant Izmirlan Jai Choi	301-496-7519 301-458-4144	<b>Public Policy</b> Brian A. Harris-Kojetin	202-395-7314	<b>Quality Assurance and Physical Sciences</b> Amrut Champaneri Eugene Burns Alan Jeeves	202-366-5998 202-366-3491 202-366-4194
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