WSS NEWS

WASHINGTON STATISTICAL SOCIETY

November 2003

QUALITY ASSURANCE IN THE GOVERNMENT SYMPOSIUM

The Washington Statistical Society is pleased to announce the sixth Quality Assurance in the Government Symposium. This symposium picks up with Quality Assurance where the very successful 1988 through 1992 symposia left off. The objectives of this symposium are to provide a basic introduction/update to quality assurance principles, to illustrate through case studies practical applications of these principles, and to address policy and organizational issues associated with quality assurance. The symposium will be held December 9 and 10, 2003.

Please see the enclosed brochure for additional details.

Annual Holiday Dinner!!!

Please come join your friends and colleagues for a celebration of the holiday season. The 2003 WSS Holiday Dinner will be held Wednesday, December 10, at the Vantage Point Restaurant & Lounge in the Holiday Inn Rosslyn Key Bridge. Hope to see you there!

Reservations must be received by December 5, 2003. Simply complete and mail the 2003 Holiday Flyer.

WSS and Other Seminars (All events are open to any interested persons)	
November **5 Wed.**	**Calibration Weighting: Past, Present, and Future**
6 Thurs.	**Using Latent Variable Models to Assess Non-Sampling Error and Measurement Bias In Survey Research**
12 Wed.	**The Wave 2 National Epidemiologic Survey on Alcohol and Related Conditions (NESARC): Survey Design and Incentive Experiment**
13 Thurs.	**The 2003 Roger Herriot Award For Innovation in Federal Statistics: Statistical Issues in Counterterrorism**
December **2 Tues.**	**Efficient Estimation for Surveys with Nonresponse Follow-Up Using Dual-Frame Calibration**

Also available on the World Wide Wed at the following URL: http://www.science.gmu.edu/~wss

Announcements

SIGSTAT Topics for Fall 2003

November 12, 2003: Code Portability: SAS Data step in DBMS/Copy - using it as a SAS Work-Alike

Many SAS users own Conceptual Software 's DBMS/COPY , a widely used utility for transferring data between software packages. Conceptual's software product lines have been acquired by DataFlux [a subsidy of SAS Institute] in October of 2002. This talk is a "Primer" on running SAS DATA step code with minimal change in the DBMS environment.

December 10: PROC MIXED - Part 2: The General Linear Mixed Model & Evaluating Covariance Structures (http://www.sas.com)

Continuing the topic from October, we'll discuss the general linear mixed model and how it is specified in PROC MIXED.

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 12:30 to 1:30. 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/.

FCSM 2003 Conference

The Federal Committee on Statistical Methodology's (FCSM) 2003 Research Conference will be held November 17-19 at the Sheraton Crystal City Hotel, Arlington, Virginia. The conference will feature a plenary address by Colm O'Muircheartaigh and focus on a wide range of current research and methodological topics relevant to federal government statistical programs. For a copy of the advance program and more information about the conference, please refer to http://www.fcsm.gov/events/#upcoming.

Introduction to Capital Science

On Saturday and Sunday, March 20-21, 2004, The Washington Academy of Sciences and its Affiliated Societies (including the Washington Statistical Society) will hold the pan-Affiliate Conference, Capital Science. It will be held in the Conference Facility of the National Science Foundation in Ballston. With more than 25 of the Academy's Affiliates participating, the Conference will serve as an umbrella for scientific presentations, seminars, tutorials, and talks. After late September 2003, the Conference website will be operative, showing the schedule of events, abstracts of papers, and logistical information, as well as providing the ability to pre-register. Go to http://www.washacadsci.org/

The Conference has two equally important purposes. First, it will provide the Academy's Affiliates with a venue to present and, through the Proceedings, publish papers of scientific merit. Given shrinking budgets and the concomitant loss of travel funds, this alone would be reason enough to hold the Conference.

But the Conference will also highlight 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. The Academy believes that showcasing the intellectual muscle of the area will help provide the support needed to continue to build and keep the United States at the forefront of scientific achievement.

Michael P. Cohen of BTS (202-366-9949, Michael.cohen@bts.gov) is the Washington Statistical Society representative to the Washington Academy of Sciences (not to be confused with the *National* Academy of Sciences). For more information, please contact him.

Note from the WSS NEWS Editor

Items for publication in the January 2004 WSS NEWS should be submitted no later than November 25, 2003. E-mail items to Michael Feil at michael.feil@usda.gov.

Program Announcement

This is the first in a series of WSS seminars on calibration and related types of estimation.

Title: **Calibration Weighting: Past, Present, and Future**

Speaker: Phillip S. Kott, National Agricultural Statistics Service, U.S. Dept. of Agriculture

Date/Time: Wednesday, November 5, 2003, 12:30 - 2:00 p.m.

Location: Bureau of Labor Statistics, Postal Square Building (PSB), Conference Center, Room tba, 2 Massachusetts Ave., N.W., Washington, D.C. Please use the First Street entrance to the PSB. To gain entrance to BLS, please see notice at the end of this announcement.

Sponsor: WSS Methodology Section

Abstract: Calibration is a methodology for adjusting probability-sample weights. Using a single set of calibration weights can produce model-unbiased estimators for a number of different target variables. This talk reviews a bit of the history of calibration weighting before Deville and Särndal (1992) coined the term, discusses the contribution of their famous paper, and highlights a few major developments since, including some new results by the speaker.

A change in the definition of a calibration estimator is recommended. This change expands the class to include such special cases as, 1, randomization-optimal estimators (usually called "optimal estimators" in the literature), and, 2, randomization-consistent estimators incorporating local polynomial regression.

The most common nonlinear calibration adjustment is raking. Viewed as a form of calibration, raking can be generalized to include continuous control variables.

Calibration weighting can be used to adjust for unit nonresponse and coverage errors. In this context, the difference between a linear and nonlinear calibration adjustment can be nontrivial. Consequently, some care is often needed in constructing a valid linearization estimator of quasi-randomization mean squared error. An analogous, nonstandard jackknife avoids iteration even when the calibration weights themselves are computed using an iterative process as is the case with generalized raking.

* To attend seminars at BLS, you need to email your name, affiliation, and title of the seminar to wss_seminar@bls.gov (underscore between "wss" and "seminar") by noon at least two days in advance, or call 202-691-7524 and leave a message. Bring a photo id to the seminar. A new list begins October 1, 2003. Once you are on the list you need not contact BLS for seminars through December 31, 2003. BLS is located at 2 Massachusetts Ave NE. Take the Red Line to Union Station.

Program Announcement

U.S. Bureau of Census
STATISTICAL RESEARCH DIVISION SEMINAR

Topic: **Using Latent Variable Models to Assess Non-Sampling Error and Measurement Bias In Survey Research**

Speaker: Adam C. Carle, Ph.D., Post-Doctoral Research Associate
Statistical Research Division

Date/Time: Thursday, November 6, 2003, 11:00 - 12:30 p.m.

Location: U.S. Bureau of the Census, 4700 Silver Hill Road, Suitland, Maryland - Room 3225, FOB 4. Please call (301) 763-4974 to be placed on the visitors' list. A photo ID is required for security purposes.

Abstract: Recent years have seen a trend in research undertaken at the U.S. Census Bureau and elsewhere to establish the quality of data collected in surveys. Among topics of specific concern is measurement bias, a type of non-sampling error. Measurement bias, also labeled differential item functioning, is present when individuals equivalent on true levels of a variable (*e.g.,* income, depression, etc.), but from different groups (*e.g.* males and females, race, etc.), do not have identical probabilities of observed scores. Bias can lead to inaccurate estimates, attenuate or accentuate group differences, and affect the validity and reliability of research. Latent variable models offer researchers a tool to demonstrate that an instrument functions with equal precision across different groups. This seminar will present the results of the speaker's recent dissertation as a vehicle for discussing measurement bias and latent variable models. The study explored the possibility of measurement bias across sex on the Children's Depression Inventory using rating scale item response theory (IRT), confirmatory factor analysis (CFA) for continuous measures, and CFA for ordered-categorical measures. The presentation will broadly address the possible effects of measurement bias, why survey methodologists and statisticians should find it of concern, and finally review the application of latent variable models to assess differential item functioning and bias.

This seminar is physically accessible to persons with disabilities. For TTY callers, please use the Federal Relay Service at 1-800-877-8339. This is a free and confidential service. Requests for sign language interpreting services or other auxiliary aids should be directed to Yvonne Moore at (301) 457-2540 text telephone (TTY), 301-763-5113 (voice mail), or by e-mail to S.Yvonne.Moore@census.gov

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U.S. Census Bureau, Statistical Research Division Seminar

Dr. Bridget Grant, Chief of Laboratory of Epidemiology and Biometry in the Division of Intramural Clinical and Biological Research at the National Institute on Alcohol Abuse and Alcoholism will make a presentation titled "The Wave 2 National Epidemiologic Survey on Alcohol and Related Conditions (NESARC): Survey Design and Incentive Experiment" on Wednesday, November 12, 2003 from 10:30 a.m. to 12:00 p.m. at the Morris Hansen Auditorium, Federal Office Building #3, U.S. Census Bureau, 4700 Silver Hill Road, Suitland, MD. Please call (301) 763-4974 to be placed on the visitors' list. A photo ID is required for security purposes.

Program Announcement

The 2003 Roger Herriot Award For Innovation in Federal Statistics

Title: **Statistical Issues in Counterterrorism**

Recipient and
Main Speaker: David L. Banks, Duke University

Other
Speakers: Nancy L. Spruill, Office of the Secretary of Defense
                 Wendy L. Martinez, Office of Naval Research

Chair: Fritz Scheuren, NORC

Date/Time: Thursday, November 13, 2003 12:30 - 2:00 p.m. Reception to Follow

Location: BLS Conference Center, 2 Postal Square Building, across from Union Station. Conference
                 Rooms 2 and 3.*

Co-sponsors of the Herriot Award: Washington Statistical Society, American Statistical Association's
Government Statistics Section and Social Statistics Section

ABSTRACT: In less than 20 years of service, David L. Banks has made significant contributions to federal
                 statistics. At the National Institute of Standards and Technology he pioneered the use of
                 Bayesian statistics for metrology and made key comparisons to improve accuracy and
                 support international commerce. At the Department of Transportation (DOT), he helped to
                 build a new federal statistical agency (BTS) and led efforts in the economic analysis of
                 transportation data. During his short time at the Food and Drug Administration, he led the
                 effort to apply statistical methods for risk analysis and game theory to counter bio-terrorism.

                 Fritz Scheuren will discuss David's many contributions to the federal statistical community.
                 After which, David will present a talk, "Statistical Issues in Counterterrorism."
                 Counterterrorism has introduced a number of new research problems for statisticians. This
                 talk quickly reviews the range of topics that are being addressed by various researchers, and
                 then focuses upon two in which there seems to be particular potential: the combination of
                 statistical risk analysis with game theory, and the use of multidimensional scaling to improve
                 biometric identification algorithms.

                 Nancy L. Spruill and Wendy L. Martinez will comment on David's talk and his contributions
                 promoting the use of good statistical methods in government counterterrorism efforts

Roger Herriot was the Associate Commissioner for Statistical Standards and Methodology at the National
Center for Education Statistics (NCES) before he died in 1994. Throughout his career at NCES and the
Census Bureau, Roger developed unique approaches to the solution of statistical problems in federal data
collection programs.

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wss_seminar@bls.gov (underscore between "wss" and "seminar") by noon at least two days in advance, or
call 202-691-7524 and leave a message. Bring a photo id to the seminar. A new list begins October 1, 2003.
Once you are on the list you need not contact BLS for seminars through December 31, 2003. BLS is located
at 2 Massachusetts Ave NE. Take the Red Line to Union Station.

Program Announcement

This is the second in a series of WSS seminars on calibration and related types ofestimation.

Title: **Efficient Estimation for Surveys with Nonresponse Follow-Up Using Dual-Frame Calibration**

Speaker: Vincent G. Iannacchione, Statistics Research Division, RTI International

Co-authors: Avinash C. Singh and Jill A. Dever, RTI International

Date/Time: Tuesday, December 2, 2003, 12:30 - 2:00 p.m.

Location: Bureau of Labor Statistics, Postal Square Building (PSB), Conference Center, Room tba, 2 Massachusetts Ave., N.W., Washington, D.C. Please use the First Street entrance to the PSB. To gain entrance to BLS, please see notice at the end of this announcement.

Sponsor: WSS Methodology Section

Abstract: In surveys where response rates are low, a follow-up survey of nonrespondents may be used to augment the respondents from the main survey. This may help in reducing the residual nonresponse bias still present in survey estimates based only on the main survey after adjustments for high nonresponse are made via modeling. However, when cost considerations require that the follow-up sample size be small, the reduction in bias obtained from the follow-up may be negated by the increase in sampling variance due to highly unequal selection probabilities in the combined sample. In this situation, a possible solution may be to trim the extreme weights in order to reduce the mean square error (MSE) associated with key survey estimates. However, it is not clear how to control the bias introduced by trimming.

We present an alternative in which we make more efficient use of information in the data. Our method is motivated by analogy with small-area estimation techniques in that our goal is to balance the variance of an unbiased but unstable quasi design-based estimator (this is based on the main and the follow-up samples with possibly nonresponse model adjustments for the follow-up) with a biased but stable quasi model-based estimator (this is based on the main sample with a nonresponse model adjustment). The term 'quasi' is used to signify that in the first case, the design-based estimate plays the major role as only a small part of the sample has nonrespondents, while in the second case with no follow-up, model adjustment for nonresponse plays the major role as a large part of the sample has nonrespondents.

We propose that the ideas underlying dual-frame estimation together with sampling weight calibration can be used to develop composite weights to produce estimates that are expected to strike a balance between variance and bias. The weight calibration is performed such that it has built-in controls for extreme weights while preserving the known population totals for various auxiliary variables as well as zero controls for difference estimates from the two samples for a key set of study variables. The proposed method is illustrated for a survey of Gulf War veterans with a nonresponse follow-up survey.

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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.ipr@verizon.net or (703) 979-1191.

Statisticians

The Financial Advisory Services ("FAS") practice of PricewaterhouseCoopers provides comprehensive financial, economic and strategic advice to companies with complex business problems. Within FAS, the Dispute Analysis & Investigation (DA&I) group provides a broad range of consulting services to attorneys and other parties involved in litigation, arbitration or mediation and other alternative dispute resolution forums. Specialty practice areas include economic, statisitical and finanicial analysis, complex litigation and data analysis, breach of contract claims, business interruption, investigation services, intellectual property disputes, construction disputes, securities fraud, and insurance claims services.

Economists and Statisticians within the Economic Analysis practice work together to develop practical and achievable solutions for our 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. Successful candidates will possess 3to 5 years of related experience. Knowledge of statistical analysis and SAS programming required. We welcome candidates with distinguished academic achievement, a high level of personal integrity and a high level of energy and a strong desire to learn.

MA/MS/PhD with areas of concentrations in Statistics and/or mathematics.

Please send resumes to: FASCareers@us.pwcglobal.com

MANAGING RESEARCH SCIENTIST
(Senior-Level Statistician)

JDG has been retained by a $135 MM not-for-profit research institution founded in 1946 to locate a Senior Manager within its Statistical Research program. The location of the position is Washington, DC.

Responsibilities include providing technical oversight, direction and quality assurance/control of research and evaluation activities. This encompasses conceptualization, development and execution of program evaluations, educational assessments, computation of comparative statistics, and development of specialized software to implement computationally complex methods of computing precision of survey statistics.

Many of the projects extend beyond the application of statistical methods and include development of software that clients can use in their own work. They have created several unique software applications, including a package which facilitates direct estimation of sample statistics from complex survey data. The software development emphasizes the need to combine sophisticated analysis with the needs of clients to obtain information in as straightforward a manner as possible. It also incorporates complete, easy to understand, online documentation that users can rely on to understand statistical methods used and their application in the software.

Education: Ph.D. in statistics or Mathematics is required. Other heavily quantitative Ph.D.s will also be considered.

Contact: Joseph DeGioia, JDG Associates, Ltd., 1700 Research Boulevard, Rockville, MD 20850; Phone: 301-340-2210; Email: degioia@jdgsearch.com

The Biostatistics Center
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 124 with 26 biostatisticians/epidemiologists, including 9 faculty. We are recruiting MS and Ph.D. level staff to participate in these and future studies. Please visit our web site (below).

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.

Assistant to Full Research Professorial Positions: (3 or more openings):

Ph.D. level positions available on or about July 1, 2002. To serve as Associate Project Director (Co-Investigator) or future Project Director (Principal Investigator). Minimum Requirements: Doctorate in Biostatistics, Statistics or Epidemiology, 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. Review of applications began on June 10, 2002 and will continue until the positions are filled.

Master's Level Research Position: (1 or more)

Minimum Requirements: 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.

Rank/position title and salary commensurate with experience and qualifications. Tuition benefits for employee (including Ph.D. in Statistics, Biostatistics and Epidemiology) and for spouse and dependent children. Letter and CV to: Colleen Foster, HR Manger, The George Washington University Biostatistics Center, 6110 Executive Blvd., Suite 750, Rockville, MD 20852. No phone calls please. http://www.bsc.gwu.edu

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

Mathematical Statistician

The National Cancer Institute (NCI) anticipates an opening for a position within the Statistical Research and Applications Branch (SRAB) of the Division of Cancer Control and Population Sciences. This is located within the National Institutes of Health (NIH), Department of Health and Human Services (DHHS). SRAB provides

statistical expertise and sets the direction for mathematical and statistical research used to carry out surveillance of the nation's cancer burden and understanding of how cancer control activities influence that burden. Recent examples include: change point analysis to characterize cancer trends, recurrent event survival analysis of screening mammography patterns. Position responsibilities will include: development of methods and associated software, and design/analysis of pertinent studies to answer key questions about cancer incidence, survival, mortality and cancer-related health status in diverse populations of the US. Excellent communication skills are necessary to communicate and translate statistical information to diverse audiences.

Doctoral degree required in statistics, biostatistics, or related field with experience/interest in the development and interpretation of health statistics. Salary $71,461-$106,086. The location is Rockville, MD, near Washington, DC. Excellent benefits. DHHS and NIH are equal opportunity employers. Please send a cover letter summarizing your experience and interests along with your CV, and contact information for three references, by December 15, 2003 to:

Dr. Eric (Rocky) Feuer
Chief, Statistical Research and Applications Branch
National Cancer Institute
6116 Executive Blvd., Room 5041, MSC 8317
Bethesda, MD 20892-8317 (US Mail)
Rockville, MD 20852 (Overnight courier)
Phone: (301) 496-5029
Fax: (301) 480-2046
E-mail: rf41u@nih.gov

Pharmaceutical Positions

Biostatistician/Senior Biostatistician/Principal Biostatistician

This position is responsible for designing, analyzing, and reporting clinical trials in support of drug development. Duties include providing input on the study design, writing statistical methods sections for protocols, reviewing CRFs, writing statistical analysis plans, conducting analyses with SAS, writing statistical reports or coauthoring clinical study reports, interacting with regulatory agencies for study design, data handling, and analysis, and managing CROs for all statistics related issues.

Excellent oral and written communication skills are required as this person will collaboratively work in an interdisciplinary drug development team.

Experience in drug/biotech industry is desired. PhD in Biostatistics is preferred. Strong SAS

programming skill is required. Knowledge of other statistical package is a plus.

Biostatistician: PhD 0-3 yrs; MS 0-4 yrs drug/biotech experience
Sr. Biostatistician: PhD 2-6 yrs; MS 3-8 yrs drug/biotech experience
Principal Biostatistician: PhD 6-10 yrs; MS 8-12 yrs drug/biotech experience

Senior Statistical Programmer/Principal Statistical Programmer

This position is responsible for statistical programming support to the project teams. Duties include providing input on the design of CRFs, databases, table shells, and CRTs, pooling data from different sources and restructuring them in compliance to the regulatory e-submission guideline, programming in SAS to generate tables, graphs, and listings for study reports, writing documents for data files, programs, and validations. In addition, under the guidance of Director of Biostatistics, this person will collaborate cross functionally to build Biostatistics infrastructure. This includes standardizing and streamlining the biostatistics process, and writing appropriate programs for rapid data extraction and report.

Minimal 3 years of statistical programming experience in drug/biotech industry. Proficient in SAS, including SAS/BASE, SAS/STAT, and SAS/Graph. Programming in Splus, Visual Basic, and Web development is a plus. Degree in biostatistics is preferred.

Sr. Statistical Programmer: 3-8 yrs drug/biotech experience
Principal Statistical Programmer: 8-12 yrs drug/biotech experience

For information or application, please contact

Chao Wang, PhD
Director, Biostatistics
Guilford Pharmaceuticals
6611 Tributary Street
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wangc@guilfordpharm.com
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hr@guilfordpharm.com

Samuel W. Greenhouse Memorial Post-Doctoral Scientist
The Biostatistics Center
The George Washington University

Family and friends have established a post-doctoral scientist position in memory of the late Sam Greenhouse, pioneering biostatistician at the National Institutes of Health, and Professor of Statistics and Associate Director of The Biostatistics Center at The George Washington University. This 12-month, full-salary research position at The GWU Biostatistics Center located in Rockville, MD will provide the opportunities for methodological research and participation in the design and analysis of multi-center clinical trials and epidemiologic studies. A discretionary fund is provided for computers, travel, etc. Complete information is available from www.bsc.gwu.edu. Requirements: Doctorate in Statistics or Biostatistics awarded since January 1, 2002, methodological research with application to clinical trials or epidemiologic studies, some collaborative medical research experience, US citizenship or permanent residency. Tuition benefits for employee (including Ph.D. in Statistics, Biostatistics and Epidemiology) and for spouse and dependent children. Salary commensurate with experience and qualifications. Inquiries to John M. Lachin, Professor of Biostatistics and Epidemiology, and of Statistics, The Biostatistics Center, 6110 Executive Blvd., Rockville, MD 20852 (jml@biostat.bsc.gwu.edu).

The George Washington University is an equal opportunity/affirmative action employer.

Education Measurement

The Education Assessment Program of the American Institutes for Research, which works in test design, development and analysis with a variety of clients at the national, state, and local level, is seeking experienced education measurement specialists, testing specialists and quantitative psychologists to work on student assessment projects. These positions will be focused on applying and interpreting quantitative measurement data, reporting of statistical analysis and writing technical reports. The successful candidates will have professional experience in test development, score reporting and a thorough knowledge of classical and modern test theory, methods and applications. A Ph.D. in psychological or educational measurement with an emphasis on quantitative analysis or psychometrics, or industrial organizational psychology is required. Successful candidates should possess strong communication skills and be comfortable dealing with a range of technical, lay and policy audiences. Excellent writing skills and strong oral and interpersonal skills required.

AIR offers an excellent compensation package and benefits. Central location in Washington, DC. Please e-mail resume with cover letter, independently written and edited writing sample, and availability to resumes@air.org, subject line "Psychometrician" or forward to:

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WSS Program Chairs

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	Ext. 131	Anna Jan	202-327-6328	Wendy Rotz	202-327-7822
Mel Kollaner	202-537-6700				

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Jai Choi	301-458-4144			Eugene Burns	202-366-3491

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				Dean H. Judson	301-763-2057

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S.V. (Vince) Massimini	703- 883-5893	Jonaki Bose	202-366-9979	John Dixon	202-691-7516
				Antoinette Ware Martin	

Webmaster		**WSS NEWS Editor**	
Dan Jacobs	301- 403-4220	Michael Feil	202-690-3130

Employment		**Quantitative Literacy**		**Local Arrangement**	
Anne Peterson	703-979-1191	Carolyn Carroll	703-379-4500	Kevin Cecco	202-874-0464

Video Librarian		**Quantitative Literacy Poster Competition**		**Social Arrangements**	
Mel Kollander	202-537-6700	Archana Joshee	202-327-6859	Jeri Mulrow	703-292-4784
		Ryan Petska	202-327-7245		

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		Fritz Scheuren	202-320-3446		
		Carol House	202-720-4333		

Video Coordinator			**Science Fair Coordinator**	
John Dixon	202-691-7516		Lee Abramson	301-415-6180