May 1988

WASHINGTON STATISTICAL SOCIETY

NEWSLETTER

April 27	Wednesday	Asymptotic Robustness of Latent Variable Models
May 3	Tuesday	Monte Carlo Methodology and the Finite Sample Properties of Statistics for Testing Nested and Non-Nested Hypotheses
May 13	Friday	The Bayesian Paradigm in Statistics
May 18	Wednesday	Multivariate Shewhart and CUSUM Control Charts
May 24-25	Tues./Wed.	Symposium: Quality Assurance in the Government

ANNOUNCEMENTS

Note from the Editor

About one year ago I completed a short study of the ways in which this newsletter might be changed and associated interest in those possible changes. Two basic findings emerged from this study. First, there was an interest in the establishment of a network of "reporters" who would be responsible for communicating news about promotions, reorganizations, new projects, and so on. This would enable the newsletter to inform its readers about current goings on in the Washington statistical community. Second, it was desired that the informative and interesting front pieces be continued, expanded, and presented more often.

One year later there has been little progress, so I would like to ask for your assistance. With respect to the system of reporters, it is unclear how this could be structured. Many statisticians are part of relatively small groups, but separate representation is impossible since a large number of reporters would be unwieldy. It would be desirable for the editor and the reporters to communicate on a regular basis, which becomes time consuming for even a moderately-sized group. Any thoughts on this problem would be appreciated.

With respect to the front pieces, I would like to hear from you about any articles that you are interested in submitting. I would be happy to discuss the appropriateness of any such submissions, along with recommendations for style, length, etc.

If you would like to discuss either of these issues my address and phone numbers are:

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301/454-7613
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WASHINGTON STATISTICAL SOCIETY PROGRAM CHAIRS

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W. Barnes Johnson 249-7388

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Newsletter Editor
Michael Cohen 454-6193

PROGRAM ABSTRACTS

TOPIC: **ASYMPTOTIC ROBUSTNESS OF LATENT VARIABLE MODELS**

SPEAKER: T. W. Anderson, Stanford University

CHAIR: Nozer Singpurwalla, George Washington University

DATE & TIME: Wednesday, April 27, 1988; 4:00 to 5:30 p.m. (Note special time.)

LOCATION: Room T-204, Rome Hall, Academic Center (on 22nd Street between I Street and H Street), George Washington University

SPONSORS: Physical Science and Engineering Section, WSS
Department of Economics, George Washington University
Department of Operations Research, George Washington University
Department of Statistics, George Washington University

ABSTRACT: A familiar example of a latent variable model is the factor analysis model in which a set of observed variables (for example, test scores) is considered as composed of two parts. One part is made up of (unobserved) common factor scores, the latent variables; the other part is (unobserved) errors, which are assumed to be uncorrelated. The common factors account for the correlation between the observed variables. Maximum likelihood estimates of the parameters in this and similar models are usually based on the latent variables and errors being normally distributed. In this paper, the large sample theory for such estimates, derived under normality, is shown to be valid for a large class of models with very general distributions of latent variables and errors. It is enough that the errors are independent and that the sample covariance matrix of factor scores has a limit in probability. Tests of goodness of fit are also valid. Applications of these results to panel studies, multiple battery factor analysis, and other models are discussed.

TOPIC: **MONTE CARLO METHODOLOGY AND THE FINITE SAMPLE PROPERTIES OF STATISTICS FOR TESTING NESTED AND NON-NESTED HYPOTHESES**

SPEAKER: Neil Ericsson, Federal Reserve Board

CHAIR: Francis Diebold, Federal Reserve Board

DISCUSSANT: David Findley, Bureau of the Census

DATE & TIME: Tuesday, May 3, 1988; 12:30 to 2:00 p.m.

LOCATION: Federal Reserve Board, Martin Building, Rooms 3219 and 3319, 20th & C, N.W.
(Please call 452-2461 at least one day in advance to ensure building admission.)

SPONSOR: Economics Section

ABSTRACT: Using recently developed Monte Carlo methodology, this paper investigates the effect of dynamics and simultaneity on the finite sample properties of maximum likelihood and instrumental variables statistics for testing both nested and non-nested hypotheses. Numerical-analytical approximations (response surfaces) to the unknown finite sample size and power functions of those statistics are obtained for dynamic one- and two-equation models. The results illustrate the value of asymptotic theory in interpreting finite sample properties and certain limitations for doing so. Two practical finite sample results arise: the F form of the Wald statistic is strongly favored over its chi-squared form; and the effects of "large-σ" and a small effective sample size are particularly pronounced for Sargan's (1958) instrumental variables statistic and Ericsson's (1983) Cox-type instrumental variables statistic. Re-examining Pesaran and Deaton's (1978) empirical example illustrates the additional information gained from the instrumental variables statistics.

PROGRAM ABSTRACTS (continued)

TOPIC: **THE BAYESIAN PARADIGM IN STATISTICS**

SPEAKER: Nozer Singpurwalla, George Washington University

CHAIR: John Lachin, George Washington University

DISCUSSANT: Sylvan Green, NCI and Laurence Freedman, NCI

DATE & TIME: Friday, May 13, 1988; 1:30 to 3:30 p.m. (Note special time.)

LOCATION: Federal Building, Room B1-19, 7550 Wisconsin Avenue, Bethesda, Maryland
(One block north of Bethesda Metro)

SPONSOR: Public Health and Biostatistics and Physical Sciences and Engineering Sections

ABSTRACT: This is a tutorial talk, at the foundational level, aimed at a broad audience of engineers, mathematicians, physicians, statisticians, and other physical and biological scientists. Here we shall discuss the Bayesian paradigm and its relevance to describing uncertainty. We start off by discussing scoring rules and the inevitability of probability. We emphasize that probability is subjective and use it to explain notions such as independence, parameters, probability models and statistical models. We state the likelihood principle and point out difficulties with notions such as confidence limits, testing of hypotheses, maximum likelihood estimation, non-parametric statistics, etc., and make some historical comments.

TOPIC: **MULTIVARIATE SHEWHART AND CUSUM CONTROL CHARTS**

SPEAKER: Dr. Frank Alt, University of Maryland College of Business and Management

CHAIR: David Marker

DATE & TIME: Wednesday, May 18, 1988; 12:30 to 2:00 p.m.

LOCATION: Room 2736, GAO Building, 441 G Street, N.W., Washington, D.C.
(Please call 523-1760 if you plan to attend in order to assure building entrance.)

SPONSOR: Methodology Section

ABSTRACT: For those situations in which it is necessary to simultaneously monitor two or more correlated characteristics, multivariate quality control methods will be necessary. Although such procedures are employed in industry, they can easily be implemented in the government or service sectors. This talk will focus on multivariate control charts, of which there are basically two types: Shewhart and CUSUM. Shewhart will be presented for both phase 1 (parameter estimates are obtained from rational subgroups) and phase 2 (standard or target values are specified). There is no unique cumulative sum method. Attention will focus on those methods developed by Woodall, Crosier, Healy, and Smith. These alternative methods will be evaluated by considering their average run lengths.

OTHER ANNOUNCEMENTS

ICPSR Annual Summer Program in Quantitative Methods

The twenty-sixth annual ICPSR Summer Program in Quantitative Methods of Social Research will be held in Ann Arbor, Michigan June 27 to August 19, 1988. The Summer Program will feature a number of special courses and presentations on such topics as: Latent Class Analysis, Event Count Models, Continuous Time Models, Statistical Estimation of Formal Models, Network Analysis, Artificial Intelligence, Bootstrap and Jackknife Re-sampling Methods, and LISREL Models. There will also be workshops on methodological application in the areas of American Electoral Research, Latino Research Issues, Crime and Criminal Justice, Population Projection and Estimation, and the Survey of Income and Program Participation (SIPP). The eight-week Program will be divided into two four-week terms and offer as well standard courses on Linear Models, Causal Analysis, Time Series, Mathematical Modeling, and Logit/Log-linear Models. For more information, application and brochure, contact: ICPSR Summer Program, P.O. Box 1248, Ann Arbor, MI 48106, 313/764-8392.

July 1988 - Conference in Memory of Eugene Lukacs

The Mathematics Department at Catholic University is organizing a one-day conference in honor of the late Professor Emeritus Eugene Lukacs. The conference, to be held in July, will consist of four one-hour lectures by the invited speakers. The exact date of the conference and the names of the speakers will appear in the next issue of the newsletter.

Bureau of the Census Fifth Annual Research Conference (ARC V)

The Bureau of the Census is planning its Fifth Annual Research Conference, to be held in March of 1989 in the Washington, D.C. area. The conference will consist primarily of contributed papers, most of which receive formal discussion at the conference. The conference will feature papers on topics related to a broad range of Census Bureau research interests. Papers may address methodology, empirical studies, or relevant issues. A conference proceedings volume containing all papers and discussions will be published. Papers must be original and not previously published or disseminated. Presenters will be reimbursed for transportation and per diem expenses and will receive a fee for manuscript preparation (expected range: $250-$450).

To have a paper considered for presentation, send a 500-word abstract by June 1, 1988 to: **David Findley, Conference Chair, Statistical Research Division, Bureau of the Census, Washington, D.C. 20233.**

To obtain registration information or to be included on the mailing list, contact: **Maxine Anderson-Brown, Conference Coordinator, Office of the Director, Bureau of the Census, Washington, D.C. 20233.**

Please note, plans for ARC V are dependent upon final approval and funding which are still pending.

Continuing Education Seminar Set (Rescheduled) for April 29

The Washington OR/MS Council (WORMSC) and the Center for Education Statistics, U.S. Department of Education, are co-sponsoring a seminar on ***Missing Data and Imputation.*** Featured speakers are **Donald Rubin**, chairman of the Statistics Department at Harvard, and **Roderick Little** of UCLA. The seminar will be held at the **Center for Education Statistics Auditorium**, 555 New Jersey Avenue, N.E., on **Friday, April 29.** (The location is one block from the Union Station Metro stop.) Preregistration is due by April 15 and costs $115 per person for WORMSC members, $130 for non-members. Handout materials for the course are included. Textbooks explaining the material in more detail are also available, at discount prices. Registration at the door will be $15 more per person, if available, and will not include textbooks.

For further information contact Doug Samuelson at 703/478-9808 (office) or 703/476-2058 (home).

OTHER ANNOUNCEMENTS (continued)

Washington Academy of Sciences Meeting

The Washington Academy of Sciences will hold its May meeting in the Mary Graydon Center of American University at Massachusetts and Nebraska Avenues, N.W., on Thursday, May 19. Ronald Mandersheid, President of the Washington Academy of Sciences, is scheduled to give the WAS President's Address.

There will be a wine and cheese reception at 6:45 p.m. followed by dinner at 7:30. The program will begin at 8:30 p.m. Call 301/320-3621 for information and make dinner reservations at least three days in advance.

NBS-GWU Conference on "Uncertainty in Engineering Design"

The National Bureau of Standards and the George Washington University are hosting a conference on May 10 and 11, 1988, which will focus on problems of engineering design for quality and reliability. The aim is to provide an opportunity for engineers and statisticians to explore approaches to handling uncertainty in design and manufacturing. The Conference is to facilitate the interaction of these disciplines in the context of both product and process design. The program will include invited talks and open discussion led by selected participants. Participants will have an opportunity to tour the NBS Advanced Manufacturing Research Facility.

The five sessions of the conference are being chaired by:

Dr. Gary McDonald, General Motors Research
Dr. J. Stuart Hunter, Princeton, New Jersey
Dr. Dennis Swyt, National Bureau of Standards
Professor Stephen Pollock, University of Michigan
Dr. Ragu Kacker, AT&T Bell Laboratories

The conference agenda and information on registration may be obtained from: Ms. Shirley Bremer, National Bureau of Standards, Bldg. 101, Rm. A337, Gaithersburg, MD 20234, 301/975-2845.

Seminar Series: Advanced Topics in Survey Methodology

The USDA Graduate School's popular seminar series on Advanced Topics in Survey Methodology, first presented in the Fall of 1984, will be repeated in the Spring of this year. The series is intended for anyone who sponsors, designs, manages or works on any aspect of statistical surveys. It will provide insights into all phases of survey methodology, with leading practitioners as presenters and discussion leaders. Among the many topics to be included in the 1988 series are: total survey design, questionnaire development, interviewer training, treatment of missing data, cognitive aspects of surveys and survey processing on microcomputers. The seminar series is scheduled for Thursday evenings from April 7 through June 9. The fee will be $249. For a brochure and further information, call the USDA Graduate School office on 202/447-5885.

National Bureau of Standards Speaker Series

The Statistical Engineering Division of the National Bureau of Standards is pleased to announce a series of talks to be given at the Bureau of Standards in Gaithersburg, Maryland. All members of the Washington area statistical and scientific community are cordially invited to attend any or all of the talks. The next speaker is James Berger of Purdue University who will speak on May 5th. The talk will be held in Room B119 of the Polymers Building, National Bureau of Standards at 2:00 p.m. For further details concerning exact topic, time, and place please call Fran Weygand at 301/975-2838 or Marilyn Leach at 301/975-2839.

How Do You Improve Your Response Rates?

The U.S. Department of Agriculture conducts detailed personal interview surveys of food expenditures and consumption. The response rates for these surveys are not as high as we had hoped. We would like to exchange information on measuring and improving response rates with other organizations that conduct household surveys of a similar nature. If there is enough interest, a small staff level conference on these issues may be organized. Please contact Diane Willimack (202/475-3481) to express your interest in an information exchange or conference.

OTHER ANNOUNCEMENTS (continued)

14th Annual IASSIST Conference

The International Association of Social Science Information Services and Technology (IASSIST) is holding its 14th Annual Conference in Washington, D.C. Thursday, May 26 through Sunday, May 29, 1988. The program features contributed papers, workshops and roundtable discussions concerned with archiving, accessing and using machine readable social science data. The conference is being held at the Dupont Plaza Hotel, 1500 New Hampshire Avenue, N.W., which is conveniently located near Dupont Circle and the Dupont Circle metro stop. Rooms are guaranteed to be available at the Dupont Plaza Hotel through April 25, 1988 for a flat rate of $65 per night. The conference rate will be offered on an as available basis after April 25.

Conference and workshop registration for members is $140 if registered by April 25. Late fee is $20. Nonmembers should add an additional $20. Separate registration fees are available for conference and workshops.

For further information and an advanced program, contact Pat Doyle, Mathematica Policy Research, Inc., 600 Maryland Avenue, S.W., Suite 550, Washington, D.C. 20024.

EMPLOYMENT COLUMN

Deadline for inserting notices is 5 (five) weeks before the publication date. Send notices and requests to: Evelyn R. Kay, 520 22nd Street, N.W., Washington, D.C. 20037, 202/331-1153.

JOB OPENINGS

BIOSTATISTICIAN -- GS-12 ($33,218/year) or GS-13 ($39,501/year)

Duties include consulting on design and analysis of clinical/epidemiological studies of allergy and infectious diseases, especially randomized clinical trials; analyzing data from observational studies; and serving as a resource on appropriate computing software. Position involves a high degree of independence and includes collaboration on analysis and publication of specific studies as well as opportunity for methodologic research.

Applicant should have a doctoral degree in statistics or biostatistics, or equivalent training and experience; some experience in design and analysis of clinical trials and analysis of observational studies; and an interest in and knowledge of a variety of appropriate computer software, including SAS. U.S. citizenship is required.

Applicants should send CV and, if available, SF-171 to Mrs. Marge Johnson, National Institute of Allergy and Infectious Diseases, Building 31, Room 7A-34, Bethesda, MD 20892 (301/496-4634).

S T A T I S T I C I A N S

Westat is an employee-owned corporation headquartered in the suburbs of Washington, D.C. (Rockville, MD). 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, our company has become one of the leading survey research and statistical consulting organizations in the United States.

Westat has opportunities for persons who are interested in statistical applications in survey sampling, including the areas of sample design, frame development, weighting, imputation, and variance estimation. Positions are currently available for persons with a master's degree and some SAS experience, and for senior level statisticians with Ph.D. training and experience.

Interested applicants should send resume with current salary to: **Personnel Director, WESTAT, INC., 1650 Research Boulevard, Rockville, Maryland 20850,** EOE M/F/H/V.

JOB OPENINGS (continued)

STUDY DIRECTOR

The Commission on Behavioral & Social Sciences & Education of The National Research Council is seeking candidates for the position of Study Director to support the activities of the Committee on Research on Law Enforcement and the Administration of Justice and the Panel on Violence Research and Policy.

Responsibilities include planning and supporting the work of the Committee and the Panel, writing literature reviews, drafting conclusions, and managing project schedule and budget. Candidates should have a Ph.D. or equivalent with at least four years of experience performing or managing research or policy analysis. The position requires the demonstrated ability to initiate, conduct, and manage research in a policy setting and excellent oral and written communication skills. The NRC offers a salary based on qualifications and an exceptional benefits package including paid relocation.

Send resume in confidence to: CBASSE, Position #554.024, 2101 Constitution Avenue, N.W., Washington, D.C. 20418.

JOB APPLICANTS

Listed below is a brief description of the qualifications of an applicant seeking employment. Employers interested in interviewing this applicant should notify Mrs. Kay of their interest by CODE NUMBER. The request should be by mail and should include the employer's name, organization, and telephone number. The applicant will be notified of the employer's interest and initiation of any further contact will be left to the applicant. All contacts will be confidential.

CODE #88-03

Position wanted:	**RESEARCH STATISTICIAN and DATA ANALYST**, as study director, division director, or vice president post. GS-14 governmental level.
Education:	Ph.D., Measurement and Statistics; MA, Psychology
Experience:	Senior Associate for 13 years in professional services consulting firms, as large-scale study director, technical director or major writer of funded diverse survey research and program evaluation proposals. Three years government research agency. Also higher education, state, and nonprofit social service agency experience. In depth experience and breath in statistical data analysis, methodology, questionnaire design, SAS/SPSS software usage (mainframe and microcomputer settings), technical quality control and newsletter/report/article/ proposal writing or presentations.
Contact directly:	Evenings: 301/649-2768

P.O. Box 70843
Washington, D.C. 20024-0843