



MARCH 1989

WASHINGTON
STATISTICAL
SOCIETY

NEWSLETTER

March 9	Thursday	Some History and Reminiscences on Survey Sampling	ASA-150
March 15	Wednesday	Integrated Survey Redesign	
March 16	Thursday	Statistical Databases in Transportation	
March 16	Thursday	Data, Linkages and Models: U.S. National Income and Product Accounts in the Framework of a Social Accounting Matrix	
April 25	Tuesday	Statistical Aspects of the AIDS Epidemic--the U.K. Experience	
April 28	Friday	Stochastic Models in Epidemiology	
May 10	Wednesday	The Asymptotic Correlation of the Mantel-Haenszel and Maximum Likelihood Estimators of a Common Odds Ratio in $k \times 2 \times 2$ Tables	

ANNOUNCEMENTS

Sir David Cox to Speak

Arrangements are being finalized for Sir David Cox of Oxford University to address the Washington Statistical Society as this year's Distinguished Invited Lecturer. The presentation will be given on April 25. It will be a mid-afternoon lecture with a social reception following. Exact time and location are still to be determined. Sir David's topic will be "Statistical Aspects of the AIDS Epidemic--the U.K. Experience."

Stephen Stigler to Speak at George Washington University

Stephen Stigler, of the University of Chicago, will be speaking on the campus of George Washington University on April 5, 1989 at 4 p.m.

His talk, entitled "The Limits of Axiomatization: Historical Reflections on the Relationship Between Mathematical Reasoning and Statistical Inference," is organized by the Department of Mathematics at George Washington University and the Division of Mathematical Sciences of the National Science Foundation.

All members of the Washington area statistical and scientific community are cordially invited to attend the lecture.

For further information (e.g., specific room) please contact the Department of Mathematics (994-6235) or Peter Arzberger or Mary Ellen Bock of NSF (357-3693).

WASHINGTON STATISTICAL SOCIETY PROGRAM CHAIRS

Agriculture & Natural Resources

Ron Bosecker 447-3895
W. Barnes Johnson 249-7388

Social & Demographic Statistics

Harvey Schwartz 535-0634
John Czajka 484-9220

Short Courses

Glenn White 763-4138
Donald Gantz 425-3931
Brad Pafford 447-2129
Sid Schwartz 268-3490
Virginia deWolf 366-5372

Economics

Francis X. Diebold 452-2461
Gerald Schluter 786-1785

Public Health & Biostatistics

Ed Lakatos 496-5905
Jai Choi 436-7047

Methodology

David Marker 251-4398
Myron Katzoff 436-7047

Employment

Evelyn R. Kay 337-8418

Physical Sciences & Engineering

Patricia Abel 883-6490
Refik Soyer 994-6794

Statistical Computing

Khalid Aboura 994-7534
Sylvia Leaver 272-2311

Quality Assurance

Stanley R. Freedman 586-2038
John M. Galvin 272-2385

Newsletter Editor

Michael Cohen 454-6193

PROGRAM ABSTRACTS

- TOPIC:** SOME HISTORY AND REMINISCENCES ON SURVEY SAMPLING **ASA-150**
- PANELISTS:** Lester Frankel, Audits and Surveys Inc.
Morris Hansen, Westat Inc.
Joseph Steinberg, Survey Design Inc.
- MODERATOR:** Ingram Olkin, Stanford University
- DATE & TIME:** Thursday, March 9, 1989, 2:30 to 4:00 p.m. (Note special time.)
Reception following from 4:00 to 5:00 p.m.
- LOCATION:** 7th Floor Auditorium (seminar), and Room 2437 (reception),
GAO Building, 441 G Street, N.W., Washington, D.C. 20212
(Please call 523-5192 no later than March 7 to assure building entrance.)
- ABSTRACT:** In the late 1930s and early 1940s, Washington emerged as one of the centers for research in and application of sampling methodology. The panelists played significant roles in fostering the development of survey sampling and the Federal statistical survey system.
- The panelists will discuss their own early work and the influence of other pioneers including Neyman, Mahalanobis, Deming, and others. Topics will include early difficulties in getting sampling accepted as a useful methodology for the measurement of unemployment and other social statistics, the early Univac computers, and other subjects.
-
- TOPIC:** INTEGRATED SURVEY REDESIGN
- SPEAKER:** Monroe Sirken and Donald Malec,
National Center for Health Statistics
- DATE & TIME:** Wednesday, March 15, 1989, 12:30 to 2:00 p.m.
- LOCATION:** Department of Labor Auditorium, Room 5526 South,
200 Constitution Avenue, N.W., Washington, D.C.
- SPONSOR:** Methodology Section
- ABSTRACT:** During the past decade, NCHS embarked on a program of integrating the sample designs of about a dozen independently designed national population and establishment surveys. The National Health Interview Survey (NHIS), the largest of NCHS population sample surveys, serves as the fulcrum for the integrated survey design. The NHIS micro-data set is the sampling frame for NCHS population surveys and NHIS PSUs serve as primary sampling units for NCHS establishment surveys. This paper reviews the achievements of the integrated design program over the past decade and discusses the research being planned for redesigning NHIS after the 1990 Census.
-

PROGRAM ABSTRACTS (continued)

TOPIC: STATISTICAL DATABASES IN TRANSPORTATION

SPEAKERS: Ezio Cerrelli and Dennis Utter, National Highway Traffic Safety Administration

CHAIR: Terry Shelton, National Highway Traffic Safety Administration

DATE & TIME: Thursday, March 16, 1989, 12:30 to 2:00 p.m.

LOCATION: DOT Nassif Building, Room 9230, 400 7th Street, S.W., Washington, D.C. 20590

SPONSOR: Social and Demographic Statistics

ABSTRACT: The National Highway Traffic Safety Administration (NHTSA) needs detailed information on the number of motor vehicle crashes, their characteristics, severities, and resulting injuries. Two of the major sources of data for NHTSA are the National Accident Sampling System (NASS), and the Fatal Accident Reporting System (FARS).

The NASS consists of two systems: one system collects limited information on all types of crashes ranging from property damage only to fatalities; the other system collects detailed information about accidents involving at least one towed passenger car, light truck or van. This part of the presentation will give an overview of both parts of the NASS and describe the three-stage sample design that is used.

The FARS collects information on a census of fatal crashes that occur each year in this country. This part of the presentation will describe the types of analyses that are done with the FARS data, along with some recent statistics concerning fatal crashes.

TOPIC: DATA, LINKAGES, AND MODELS: U.S. NATIONAL INCOME AND PRODUCT ACCOUNTS IN THE FRAMEWORK OF A SOCIAL ACCOUNTING MATRIX

SPEAKER: Professor Sherman Robinson, University of California, Berkeley

CHAIR: David Harrington, Deputy Director for Agriculture
Agriculture and Rural Economy Division, ERS, USDA

DISCUSSANT: Mark Planting, Interindustry Division, Bureau of Economic Analysis

DATE & TIME: Thursday, March 16, 1989, 12:30 to 2:00 p.m.

LOCATION: Lower Level Auditorium, 1301 New York Avenue, N.W., Washington, D.C.

SPONSOR: Economics

ABSTRACT: In policy analysis, there is a continuing tension and interplay between issues, models, and data. In recent years, issues and models have changed, leading to a need for evolution in the underlying economywide economic data base. From a modeler's perspective, Dr. Robinson discusses accounting frameworks for integrating micro survey data with macro data from the national economic accounts and argues that new accounts are needed to support policy modeling. He discusses in detail the use of Social Accounting Matrices (SAMs), which provide a data framework reflecting an actor/transaction view of the economy and supports disaggregated economywide modeling. In addition, the discussion addresses the relationship between a SAM and the existing national economic accounts for the U.S., including the national income and product accounts (NIPA) and the input-output accounts.

PROGRAM ABSTRACTS (continued)

-
- TOPIC:** STOCHASTIC MODELS IN EPIDEMIOLOGY
- SPEAKERS:** See below.
- DATE & TIME:** Friday, April 28, 1989, 1:00 p.m. (Note special time.)
- LOCATION:** Wilson Hall, Building 1, National Institutes of Health
- SPONSORS:** Department of Mathematics, University of Maryland and Biostatistics, WSS
- ABSTRACT:** Several talks and discussions will be devoted to the topic of modeling of infectious diseases, including AIDS. Participants will include speakers from Europe as well as from the Washington-Baltimore area. Further details will be forthcoming.
-
- TOPIC:** THE ASYMPTOTIC CORRELATION OF THE MANTEL-HAENSZEL AND MAXIMUM LIKELIHOOD ESTIMATORS OF A COMMON ODDS RATIO IN $K \times 2$ TABLES
- SPEAKERS:** Samuel Greenhouse and Joseph Gastwirth, George Washington University
- DATE & TIME:** Wednesday, May 10, 1989, 12:00 p.m. (tentative)
- LOCATION:** Wilson Hall, Building 1, National Institutes of Health
- SPONSORS:** Biostatistics Research Branch, NHLBI and Public Health and Biostatistics, WSS
- ABSTRACT:** In order to find the correlation between any two estimators, one has to have explicit expressions for each. Obviously, the maximum likelihood estimator of a common odds ratio is not obtainable in closed form and an alternative has to be found. This was accomplished by using a surrogate for the maximum likelihood estimator which is asymptotically efficient. Asymptotic representations are presented for both the Mantel-Haenszel estimator and the maximum likelihood surrogate estimator. It then is easy to obtain the joint asymptotic distribution.
-

OTHER ANNOUNCEMENTS

New USDA Graduate School Course Offered

A new course, **Advanced Topics in Survey Theory** (ESTAT 525), is being offered by the USDA Graduate School in the Spring of 1989 and every other spring thereafter (alternating with **Advanced Topics in Survey Methods** - ESTAT 570).

This series of lectures and discussions is intended for anyone interested in the latest developments in survey sampling theory and in advanced topics not often covered by the standard sampling textbooks. Guest speakers from government will address topics such as: raking, analysis of data from complex samples, replication methods, composite estimation, capture-recapture, model-based sampling theory, and adjustments for nonresponse.

The tuition is \$209 and includes reading materials, which will be distributed at the first session. Prerequisite is knowledge of sampling survey at the level of Cochran's Sampling Techniques. For more information contact Phil Kott (475-3492) or Ron Fecso (475-3486).

George Washington University to Host NSF-CBMS Conference

The George Washington University Department of Statistics/Computer and Information Systems will host a CBMS Regional Conference, *Modern Computer Intensive Methods for Exploring and Modeling Multivariate Data*, held June 12-16, 1989, in Washington, D.C. The program will be built around ten lectures delivered by Professor

OTHER ANNOUNCEMENTS (continued)

Jerome Friedman, an internationally recognized authority in this area. Interested individuals may apply for a full stipend to participate in the conference.

This meeting will explore new methods and applications in research and practice. Primary topics include projection pursuit, additive modeling, recursive partitioning and dynamic graphics. These computer intensive methodologies encompass a broad array of statistical techniques for finding meaningful representations of multi-dimensional data. They provide nonlinear and nonparametric extensions of many classical statistical methods, including regression, classification, time series, density estimation and exploratory data analysis.

Professor Friedman, chairman of the Department of Statistics at Stanford University, is among the leading researchers of computer intensive methodology. In collaboration with John Tukey and others, he has done much of the fundamental work in projection pursuit, including methods for its implementation.

Sponsorship for the conference has been provided by the National Science Foundation and the Conference Board for the Mathematical Sciences. The conference fees, travel, room, and board expenses of twenty-five out of town participants will be paid by the sponsors. There will be room for a limited number of selected local participants. No conference fee will be charged.

To apply for local participation, send a curriculum vitae and letter of interest to David Alan Grier, Department of Statistics/Computer and Information Systems, The George Washington University, Washington, D.C., (202/994-6259). Inquiries should be sent to the same address.

ASA Constitution

The ASA Board will vote April 14 on the proposed new ASA Constitution. This is an extremely important vote for the Association. The major features of that Constitution were outlined in the May 1988 issue of *Amstat News*. You can obtain a copy of the proposal from the ASA office (684-1221), if you wish.

The Executive Committee of the ASA Council of Chapters recently considered the new Constitution at length and prepared a statement of endorsement. The key points that the Executive Committee noted were:

1. The reduction in board size from 30 to 16 will result in a more manageable, flexible governing body as well as reduce cost to the Association.
2. Sections will benefit by having their own governing body, the Council of Sections, which can address specific section issues.
3. New sections can easily be created or inactive sections disbanded, thus representing shifts in the interest of the Association over time.
4. Chapters, which represent all ASA members, both geographically and across all special interest groups, will have a greater and fairer representation on the Board of Directors from the current 1 in 30 to 3 in 16.

Individual ASA members should review the proposed Constitution and provide their ASA Board representatives with recommendations to approve or not approve the Constitution. Keep in mind that you in Washington, D.C. are represented on the ASA Board by our Council of Chapters Governor Mary Foulkes and our District representative David Morganstein plus the representative of each Section to which you belong.

Symposium on Linear Models

The Department of Mathematics and Statistics of the University of Maryland Baltimore County (UMBC) is organizing a one-day symposium on *Linear Models* on Saturday, April 29, 1989. Sponsored by the *National Security Agency* (NSA), the symposium will feature five internationally reputed statisticians: Professor David Harville of Iowa State University, Professor Arthur Cohen of Rutgers University, Professor Michael Perlman of the University of Washington, Professor C. R. Rao of Penn State University, and Professor P. K. Sen of the University of North Carolina at Chapel Hill. For further information contact Professor Bimal K. Sinha, Department of Mathematics and Statistics, University of Maryland Baltimore County, Baltimore, MD 21228, Phone: 301/455-2347.

OTHER ANNOUNCEMENTS (continued)

Shiskin Award for Economic Statistics

Nominations are invited for the tenth annual Julius Shiskin Award in recognition of outstanding achievement in the field of economic statistics.

The Award is designed to honor an unusually original and important contribution in the development of economic statistics or in the use of economic statistics in interpreting the economy. The contribution could be in statistical research, in the development of statistical tools, in the application of computer techniques, in the use of economic statistical programs, or in developing public understanding of measurement issues, to all of which Mr. Shiskin contributed. Either individuals or groups can be nominated.

The Award will be presented with an honorarium of \$500 at the Washington Statistical Society Annual Dinner in June 1989. A nomination form may be obtained by writing to the Julius Shiskin Award Committee, c/o American Statistical Association, 1429 Duke Street, Alexandria, VA 22314-3402. Completed nomination forms must be received by April 1, 1989.

Previous winners of the Award have been Estella Dagum of Statistics Canada for her work in seasonal adjustment, James Bonnen for his performance chairing the President's Reorganization Project for the Federal Statistical System, Edward Denison for his work at the Bureau of Economic Analysis and the Brookings Institution, Beatrice Vaccara for her contributions at the Bureau of Industrial Economics, Geoffrey Moore for his research in measurement and analysis of business cycles, David Pierce for his use of modern statistical techniques at the Federal Reserve Board, Janet Norwood for her direction of the statistical program of the Bureau of Labor Statistics, Irving Kravis for his work in comparative studies of national income and prices, Roger Herriot for his work in improving income statistics in the United States, and Charles Waite for his contributions to the Bureau of Economic Analysis and the Census Bureau.

Open Board Meeting

The Washington Statistical Society Constitution calls for at least one Board meeting a year to be advertised as an open meeting for participation by any WSS member. This year's meeting will be held May 30, 1989, 12:30 p.m., Room 3000, 400 Maryland Avenue, S.W. As an extra feature of this year's meeting, it is anticipated that someone from the American Statistical Association will spend a few minutes outlining the ASA program on quantitative literacy. More information on this meeting will be provided in the April and May Newsletters.

Gertrude Cox Scholarship Race at the 1989 ASA Meetings

The Caucus for Women in Statistics and Council of Chapters is sponsoring the first annual Gertrude Cox Scholarship race in Washington, D.C. during the 1989 ASA meetings. A 5K run and 1 mile fun run are being planned for Sunday, the first day of the meetings. (Remember the meetings start a day early to allow for the ASA-150 sessions.) Look for more details in future issues. Please let Stephanie Shipp know if you would like to help before the race, and/or on race day.

We are seeking a corporate sponsor who will pay for the race expenses so that all entry fees can be given directly to the scholarship fund. Please contact Stephanie Shipp, 1000 Riva Ridge Drive, Great Falls, VA 22066, 703/759-4273 or 202/272-5060 for details.

Short Course: Analysis of Binary Data

Sheila Edwards, ASA Manager of Continuing Education-Grants and Contracts, is pleased to announce that Sir David R. Cox and Joyce Snell will present a two-day short course on the "Analysis of Binary Data" at the August 1989 Sesquicentennial Annual Joint Statistical Meeting in Washington, D.C. The course will be based on the revised edition of Professor Cox's book which will be published in July 1989. Contact the ASA Continuing Education Program for registration details.

OTHER ANNOUNCEMENTS (continued)

Spotlight on WSS Board Members

A major focus of our Chapter's activities in the past year has been quality assurance. This month we will highlight the three gentlemen who are leading those efforts.

Glenn D. White, Jr. is in his third year on the WSS Short Course Committee and is the current Chair. He also chaired the group which organized last spring's Symposium on Quality Assurance in the Government. That symposium was the most ambitious program that WSS has ever attempted and was certainly one of the most successful. In addition to other short courses for this year, Glenn is planning a followup symposium which will involve a number of new topics and speakers. Glenn is a mathematical statistician in the Statistical Support Division at the Bureau of the Census. His unit is responsible for developing data processing and software quality assurance plans for the 1990 Decennial Census. He was formerly a member of the Current Population Survey Branch at Census. His educational background includes a B.A. in Mathematics/Biology at the University of San Diego and an M.S. in Biostatistics at the University of Vermont, Burlington. In addition to Glenn's work with WSS, he is a member of Biometrics and is keenly interested in all issues dealing with quality assurance. He has helped WSS in the judging of science fairs and is an avid runner and touring cyclist. He also is an active member of the Southern Maryland Choral Society including serving as the president of that organization.

Stanley R. Freedman is a Co-chair of the WSS Quality Assurance Program Section which evolved from last spring's Symposium. This is Stan's first WSS activity other than participating as a member of the symposium working group last year. He is currently a supervisory statistician at the Office of Statistical Standards, Energy Information Administration. His group conducts evaluations of key statistical series to determine sources of error and data accuracy. They also conduct audits of statistical systems to assess compliance with standards and adherence to good statistical prac-

tice. Stan's educational background may be a little different from many of the present Board members. He completed a B.A. in Political Science at Temple University and an M.S. and a Ph.D. in Government at Florida State University. With this background, Stan is very interested in applying statistics to public policy analysis as well as his overall interest in quality assurance. He served as a member of the Federal Committee on Statistical Methodology Subcommittee which prepared the report on "Measuring Error in Establishments Surveys." Stan formerly worked at the Census Bureau and has continued those connections by participating on Census Bureau softball teams.

John M. (Jack) Galvin is the other Co-chair of the Quality Assurance Program Section. He is Chief, Branch of Index Methods, Analysis, and Evaluation of the Division of Consumer Prices, Office of Prices and Living Conditions, Bureau of Labor Statistics. He manages the activity of four sections responsible for (1) producing public information for the Consumer Price Index (CPI), (2) coordination of all CPI monthly production activities, (3) acceptance testing of new CPI production systems, and (4) inspection and quality assurance activities. Jack's former positions at BLS included serving as a commodity analyst for the new car index and as a quality assurance manager. He has a B.A. in Economics from the University of Illinois at Urbana and an M.A. in Economics from the George Washington University. His fields of major statistical interest, in addition to quality assurance, include questionnaire design, nonsampling errors, and statistical process control. He has given presentations in the past at the ASA Joint Statistical Meetings and at the Juran Institute Quality Improvement Conference. He is a member of the American Society for Quality Control and a member of the Handbook Advisory Group, consulting with Juran Institute, Inc., on the development of a service industries quality control handbook. Raising three sons perhaps does not leave much free time but Jack is another intramural softball player.

OTHER ANNOUNCEMENTS (continued)

GAUSS Users' Group Meeting

GUASS/Washington, the Washington area GAUSS users group, meets again Friday, March 17, from 12:30 to 1:30 at the Economic Research Service, 1301 New York Avenue, N.W. The meeting will be in Room B-14. Please phone Jack Angle at 786-1505 to have your name put on a guard's list for admission to the building. Jack will present a talk on how GAUSS estimates the stochastic parameter regression model. GAUSS/Washington meetings are informal and always leave time for questions and answers about programming problems, the new 2.0 version, the 640+k version, the user-written proc library, etc. Dr. Ron Schoenberg, NIMH, spoke at the February meeting on the 640+k version. There are also meetings on April 21 and May 19, both Fridays, before the summer hiatus.

Incidentally, a new president will be selected at the March 17 meeting. The current president, Dr. Ron Schoenberg, is leaving NIMH for APTECH Systems, the creator of the GAUSS programming language.

Meeting of the Washington Academy of Sciences

Dr. Herbert Rabin, Director of the Engineering Research Center at the University of Maryland,

will speak on "Cooperative University-Industry Action to Create Employment Opportunities" at the Thursday, March 16 meeting of the Washington Academy of Sciences. There will be a reception at 6:30 p.m., a dinner at 7:00 p.m., and the presentation at 8:00 p.m. The location is the Mary Graydon Center of American University (Massachusetts and Nebraska Avenues, N.W., Washington, D.C.). The talk is free; the cost of the reception and dinner is \$15. Dinner reservations should be made by March 10. Call Bob McCracken at 301/320-3621 for reservations, information and directions. Make your check payable to "WAS Dinner" and mail to 5120 Newport Avenue, Bethesda, MD 20816.

Science Fairs 1989

Volunteers are still needed to represent the Washington Statistical Society as judges in local area science fairs this spring.

If you would like to be a WSS science fair judge, or if you would like additional information about this activity, please contact Susan Ellenberg at 301/496-0694; or send a note with your name, address and daytime telephone number to Susan Ellenberg, AIDS Program, NIAID, 6003 Executive Boulevard, Rockville, MD 20892.

EMPLOYMENT COLUMN

The Washington Statistical Society Newsletter provides a service of notification of employment opportunities and descriptions of those seeking employment here in Washington. Evelyn Kay, who is in charge of this service, has achieved a high success rate. Readers are encouraged to take advantage of this feature of the newsletter. Deadline for inserting notices is 5 (five) weeks before the publication date. Those interested should write to: Evelyn R. Kay, 2510 Virginia Avenue, N.W., #709, Washington, D.C. 20037, Phone 337-8418.

JOB OPENINGS

STATISTICIAN (Service Fellow-equivalent to GS11/12/13)

The National Center for Health Services Research is seeking a statistician to join the statistical staff of the National Medical Expenditure Study. The position is available for a Ph.D. in statistics/biostatistics or an M.S. with experience in sample design, survey research, sampling weights development, data analysis for complex surveys, imputation procedures, and matching techniques. Familiarity with statistical software packages (SAS, SPSS) is required. Send SF-171 application forms and resume to Dr. Steven B. Cohen, Senior Research Manager, National Center for Health Services Research and Health Care Technology Assessment, Room 18 A-55, 5600 Fishers Lane, Rockville, MD 20857; or call 301/443-4836 for additional information.

JOB OPENINGS (continued)

SENIOR MATHEMATICAL STATISTICIAN

The U.S. Postal Service has openings for three Senior Mathematical Statisticians to work on the design, development, and implementation of statistical surveys and systems, specializing in one of the following three areas: attribution of costs to produce lines, estimation of revenues and volumes, and measurement of service performance. Candidates should have graduate training in mathematical statistics, with emphasis on sampling theory, and other elements of survey design. Work experience should program management skills. Working knowledge of SAS, personal computers, and an IBM operating environment are desirable. Good human relations and communications skills are very important. Starting salary will be \$38,615 - \$51,777, plus \$936 COLA. Please send resume and salary history to: United States Postal Service, Headquarters Personnel Division, 475 L'Enfant Plaza West, S.W., Room 1813, Washington, D.C. 20260-4261, ATTN: Team D - 89-14.

STATISTICIANS

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

Our company was founded 25 years ago by three statisticians. The current staff of more than 500 includes statisticians, survey researchers, psychologists, medical researchers, sociologists, economists, market research and behavioral analysts, computer systems analysts, programmers, and support staff. The professional staff is supported by survey field supervisors, coders and interviewers. The 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, human resources, and teaching courses in statistical methods. Several positions are currently available which require a graduate degree in statistics:

Biostatistician. Work on clinical trials and longitudinal studies. Involvement in design, analysis and study management. Should have good knowledge of experimental design and survival analysis. Substantial (but not exclusive) focus on HIV related issues. Ph.D. in Biostatistics and relevant experience required.

Environmental Statistics. Experience with environmental or energy problems essential. Skills in sample design, analysis, survey operations, and project direction helpful.

Survey Sampling. Experience or course work required in sample design, frames development, weighting, or variance estimation.

Industrial Consulting. Teach statistical process control and consult with clients in industry. Must have consulting and teaching experience, willingness to travel.

To insure proper consideration, interested applicants should indicate one of the above areas and send resume with current salary to: **Personnel Director, Westat, Inc., Dept. DM, 1650 Research Boulevard, Rockville, Maryland 20850, An Equal Opportunity Employer M/F/H/V.**

WESTAT

An Employee-Owned Research Corporation

JOB OPENINGS (continued)

RESEARCH INVESTIGATOR

Application Deadline: March 15, 1989; **Position to be filled by:** Summer 1989

A non tenure-track position on the Panel Study of Income Dynamics, Survey Research Center, Institute for Social Research, University of Michigan, to perform primary research functions including (1) develop and write research proposals; (2) develop and oversee procedures for coding, programming, and publishing complex data on family histories, relationships and economic events; (3) collaborate with PSID staff to analyze data and write-up results for publication in articles and reports.

Required Qualifications: Two or more years' work experience with large, longitudinal data sets, such as SIPP, PSID, National Longitudinal Studies, etc.; a Ph.D. in sociology, economics or a related social science, or an equivalent combination of graduate study and work experience; knowledge of the literature in economics or other social science field, and in demography; two or more years' experience in programming and statistical analysis of survey research data.

To apply for either position, send application letter, resume, and three references to: Mary Wreford, 3205 ISR, P.O. Box 1248, Ann Arbor, MI 48106. EO/AA

STATISTICIANS / BIOSTATISTICIANS

SAIC, an employee-owned company, has immediate openings for Ph.D. and M.S. statisticians to apply skills on challenging studies in environmental and epidemiologic areas. We are looking for self-starting individuals who want to make substantial contributions. Successful candidates must have strong written and verbal communication skills and experience with statistical software packages (e.g., SAS, BMDP, SYSTAT). Salary commensurate with experience. SAIC offers an excellent competitive benefits package. Send your resume and salary requirements in confidence to SAIC, Attention Dr. Russell H. Roegner, 8400 Westpark Drive, McLean, VA 22102.

STATISTICIANS, ALL LEVELS

Price Waterhouse Office of Government Services provides Management Consulting Services to industry and government, both domestically and abroad.

We are currently seeking statisticians for our Washington-based consulting practice. Practice areas include sampling, modeling, and survey research applied for a diverse client base.

Qualifications include:

MANAGERS:

- Advanced degree in statistics
- 5-7 years experience, preferably in a consulting environment
- Project manager experience
- Proposal writing experience
- Excellent oral and written communication skills

CONSULTANTS:

- Advanced degree in statistics
- Up to 4 years experience
- Experience with SAS, SPSS, and dBASE III a plus
- Excellent oral and written communication skills

We offer exceptional opportunities for career growth, diverse and challenging project work, and a competitive compensation and benefit package.

For immediate consideration, please forward your resume (no phone calls, please), salary requirements, and three references, in confidence, to: Price Waterhouse, Office of Government Services, Dept. 479-S, 1801 K St., N.W., Suite 700, Washington, D.C. 20006, Attn: John Jeffries. An equal opportunity employer.

EMPLOYMENT COLUMN (continued)

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 #89-01

Position wanted: **MATHEMATICAL STATISTICIAN or O.R. ANALYST** (temporary or part-time)

Education: Master's degree in Statistics

Experience: Multivariate analysis; regression analysis; survey design; system reliability; SQC, SPC, ORSA, CMS, XEDIT, SAS, PC-DOS; secret clearance. Experience in oral and written presentations.

Contact directly: 703/578-1354



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

NON-PROFIT ORG.
U. S. POSTAGE
PAID
FALLS CHURCH, VA.
PERMIT NO. 186