WASHINGTON STATISTICAL SOCIETY

WSS NEWS

June 1992

Young Wins Shiskin Award

Allan H. Young, Chief Statistician, Bureau of Economic Analysis, has been named 1992 winner of the Julius Shiskin Award for Economic Statistics. The Shiskin Award is cosponsored by the WSS and the National Association of Business Economists. It recognizes unusually original and important contributions in the development of economic statistics and in the use of economic statistics for interpreting the economy. The award will be presented at the WSS Annual Dinner on Wednesday, June 10, 1992. (See the red flyer for details on attending the Annual Dinner.)

Special Session on Election Forecasting

In this election year, the Washington Statistical Society is pleased to join George Washington University in sponsoring a special invited session on election forecasting, on Wednesday, June 17th. The talk, "Forecasting the Outcome of Political Elections: A Bayesian Approach," will be delivered by Professor Jose' Miguel Bernardo, an internationally recognized expert in the field. Bernardo is currently Professor of Statistics at the University of Valencia and General Director of Decision Analysis for the State of Valencia, Spain. The session will be chaired by Richard Morin, Director of Polling at *The Washington Post*, and Warren Mitofsky, Executive Director, Voter Research and Surveys, will be the discussant. Following the session, refreshments will be served. For full details, see the program abstract on page 7.

WSS Seminars
(All events are open to any interested persons.)

June		
2	Tues.	Variance Estimation Seminar: Post-Stratification and Conditional Variance Estimation
3	Wed.	Data-Display Scale Compatibility and Human Performance Reading Statistical Maps
5	Fri.	Analysis of Data from Complex Surveys: Use of Estimating Functions for Interval Estimation
9	Tues.	Respondent-Interviewer Interactions in Survey Introductions
10	Wed.	**ANNUAL DINNER**
11	Thur.	The Effect of Interim Monitoring on the Power of Survival Trials with Nonproportional Hazards
11	Thur.	Analysis of Data from Complex Surveys: The NHANES I Epidemiologic Followup Study
16	Tues.	Confidence Interval Estimation of Location & Scale Parameters Subject to Order Restrictions
17	Wed.	Forecasting the Outcome of Political Elections: A Bayesian Approach
25	Thur.	The New Dynamics: Nonlinearity, Chaos, and Their Implications for Economics
30	Tues.	**OPEN BOARD MEETING**
July		
9-10	Th-F	**Symposium**: Quality Assurance in the Government (5th in series)
23	Thur.	Martingales Without Tears
August		
7	Fri.	**Short Course**: Martingales in Survival Analysis

Announcements

Open Board Meeting

The Board of Directors of the Washington Statistical Society generally meets on the last Tuesday of each month. While interested members are welcome to attend at any time, the by-laws provide for at least one open meeting.

This year the WSS Board invites all members to attend its open meeting on Tuesday, June 30, 1992. The meeting will be held in the GAO Building, Room 2437, 441 G Street, NW, Washington, DC from 12:30 - 2:00 PM. (Red Line -- Judiciary Square; check in at guard's desk and state destination.)

The open meeting is an opportunity for members to learn more about WSS and possibly become involved in some of the many and varied activities the Society sponsors. Since the June meeting is the transition meeting, it provides a chance to meet both incoming and outgoing officers of the Board.

Please come on by and join us.

WSS Short Courses

The Short Course Committee has two events planned for later this summer:

- On July 9-10, WSS will hold its fifth Quality Assurance in the Government Symposium. The conference will provide a basic introduction to quality assurance principles; illustrate, in case studies, practical applications of these principles; and address policy and organizational issues. It will be held at the Hyatt Regency Bethesda, One Bethesda Metro Center, Bethesda, MD. (See the green insert for the preliminary program and registration form.)

- On August 7, WSS will sponsor a one-day tutorial on Martingales in Survival Analysis, by Per Kragh Andersen, University of Copenhagen. The course, to be held at the Crowne Plaza Rockville, Rockville, MD, is aimed at demonstrating to clinical biostatisticians how fundamental concepts of survival analysis have theoretical counterparts in a stochastic process framework. (See the buff insert for registration information.)

These courses conclude an extremely active year for the WSS Short Course Committee. Special thanks go to Chair, Glenn White, for the outstanding job he has done over the past few years.

Workshop on Seasonal Adjustment

The Census Bureau will hold an International Workshop on Seasonal Adjustment Methods and Diagnostics, on June 2-3, 1992, in Suitland, MD. Topics to be discussed include the new Census X-12 program; non-Gaussian, nonlinear model-based seasonal adjustment; spectrum-based methods; methods for weekly data; and design principles for seasonal filters. Experts from the United States and abroad, including H. Akaike, M. Ishiguro, and G. Kitagawa, from Japan, and J. Durbin, from the U.K., will be featured. Participants are expected to have some expertise in the general subject area. Limited space is still available. To register or obtain more information, contact Maxine Anderson-Brown, Office of the Director, Room 2270-3, Bureau of the Census, Washington, DC 20233; telephone: (301) 763-1150; Fax: (301) 763-4887.

(continued on page 10)

Program Abstracts

Topic: Variance Estimation Seminar: Post-Stratification and Conditional Variance Estimation (7th in series)

Speaker: Richard Valliant, Bureau of Labor Statistics

Discussant: Charles Alexander, Bureau of the Census

Chair: Dale Atkinson, National Agricultural Statistics Service

Date/Time: Tuesday, June 2, 1992, 12:30 - 2:00 PM

Location: GAO Building, Room 2437, 441 G Street, NW, Washington, DC (Red Line -- Judiciary Square) Sign in at guard's desk and state destination.

Sponsor: Methodology Section

Abstract: Post-stratification estimation is a technique used in sample surveys to improve efficiency of estimators. Survey weights are adjusted to force the estimated numbers of units in each of a set of estimation cells to be equal to known population totals. The resulting weights are then used in forming estimators of means or totals of variables collected in the survey. Although the variance of a post-stratified estimator can be computed over all possible sample configurations, inferences made conditionally on the achieved sample configuration are desirable . Theory and a simulation study using data from the U.S. Current Population Survey are presented to examine both the conditional bias and variance of the post-stratified estimator of a total. The linearization, balanced repeated replication, and jackknife variance estimators are also explored, to determine whether they appropriately estimate the conditional variance.

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Topic: Data-Display Scale Compatibility and Human Performance Reading Statistical Maps

Speaker: Reid Hastie, University of Colorado

Chair: Jared B. Jobe, National Center for Health Statistics

Date/Time: Wednesday, June 3, 1992, 2:00 - 3:30 PM

Location: Auditorium, 11th Floor, NCHS, 6525 Belcrest Road, Hyattsville, MD

Sponsor: Data Collection Methods Section, WSS, and the Office of Research and Methodology

Program Abstracts (cont'd)

Data-Display Scale Compatibility and Human Performance Reading Statistical Maps (cont'd)

Abstract: A brief view of past research on data-display scale compatibility effects on human performance in extracting information from statistical maps will be presented. Most cartographers accept the working hypothesis that numerical data (e.g., mortality rates) are best communicated using ordered display dimensions (e.g., degree of darkness or saturation within one hue dimension) and that categorical data (e.g., predominant disease type) are best communicated using non-ordered display scales (different hues or nominal symbols). A proposed experiment to investigate people's behavior when reading maps designed to communicate qualitative (categorical) data or quantitative (numerical) data by means of nominal or ordered stimulus display scales will be discussed. A tentative information processing model of map reading and inference processes will be outlined, as a framework in which to summarize the results from the proposed experiment and related findings concerning human statistical map reading.

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Topic: Analysis of Data from Complex Surveys: Use of Estimating Functions for Interval Estimation

Speaker: David A. Binder, Statistics Canada

Discussant: Robert Casady, Bureau of Labor Statistics

Chair: Fritz Scheuren, Internal Revenue Service

Date/Time: Friday, June 5, 1992, 12:30-2:00 PM

Location: GAO Building, Room 2437, 441 G Street, NW, Washington, DC (Red Line -- Judiciary Square) Check in at guard's desk and state destination.

Sponsor: Methodology Section

Abstract: A method for constructing confidence intervals from complex surveys using estimating functions will be described. The theory was originally developed for infinite populations and has recently been applied to finite populations. Through the use of estimating functions, a unifying framework can be given for interval estimation of both finite and infinite population parameters. In particular, suppose a population parameter is defined as the solution to $\int u(y, \theta)\, dF(y) = 0$, where $F(y)$ is the population distribution function. We consider estimators, $\hat{\theta}$, satisfying $\int u(y, \hat{\theta})\, d\hat{F}(y) = 0$, where $\hat{F}(y)$ is the estimated distribution function. We discuss test inversion methods to derive confidence intervals for one-dimensional parameters. In this paper, we propose a method for eliminating nuisance parameters in the multidimensional setting. We show that special cases of our proposal result in conditional and orthogonal methods proposed in the literature. A simulation study using real data to compare the coverage probabilities of confidence intervals obtained under various approaches is given.

Program Abstracts (cont'd)

Topic: Respondent-Interviewer Interactions in Survey Introductions

Speaker: Mick P. Couper, Bureau of the Census and the University of Michigan

Discussant: Roger Tourangeau, National Opinion Research Corporation

Chair: Stanley Presser, University of Maryland, College Park

Date/Time: Tuesday, June 9, 1992, 12:30-2:00 PM

Location: GAO Building, Room 2437, 441 G Street, NW, Washington, DC (Red Line -- Judiciary Square) Check in at guard's desk and state destination.

Sponsor: Data Collection Methods Section

Abstract: Some social-psychological theories suggest the interaction between respondent and interviewer (particularly in face-to-face surveys) to be critical in determining the outcome of the request for participation. However, this is an area of research that has been largely neglected. In an effort to redress this situation, interviewers for a recent study conducted by the Survey Research Center at the University of Michigan were asked to complete a series of items at the conclusion of each contact with a sample person. These items were designed to explore the nature of the respondent-interviewer interaction and to test some initial ideas in this regard. This paper, co-authored by Robert M. Groves and Antoinette Tremblay, will describe preliminary analyses of these data (6,300 contacts from 2,500 cases) to test a number of theoretical ideas articulated earlier (Groves & Cialdini, 1991; Couper & Groves, 1991).

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Topic: The Effect of Interim Monitoring on the Power of Survival Trials with Nonproportional Hazards

Speaker: Edward Lakatos, National Heart, Lung and Blood Institute

Chair: Dean Follmann, National Heart, Lung and Blood Institute

Date/Time: Thursday, June 11, 1992, 1:30-3:00 PM

Location: National Institutes of Health, Building 31, Conference Room 9, 9000 Rockville Pike, Bethesda, MD (Red Line -- Medical Center)

Sponsor: Public Health and Biostatistics Section

Abstract: This paper addresses the issue of power determination in survival clinical trials in which interim analyses are planned. In many trials, the assumption of proportional hazards is not valid. Halperin et al. (1968) modelled noncompliance and treatment lag, both of which can lead to nonproportional hazards. They demonstrated the considerable impact nonproportionality has on the power of the

Program Abstracts (cont'd)

The Effect of Interim Monitoring on the Power of Survival Trials with Nonproportional Hazards (cont'd)

test of proportions. Lakatos (1988) showed the impact of nonproportionality on the power of the logrank test. The current paper extends the work of Lakatos to group sequentially monitored trials. Given the power of the fixed sample logrank statistic for a nonproportional hazards design, it would be convenient to have a simple adjustment to account for the number of interim looks. This paper shows that any such adjustment must also consider the nonproportionality of the hazards. A striking example is given in which the sample size is actually decreased by accounting for interim monitoring.

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Topic: Analysis of Data from Complex Surveys: The NHANES I Epidemiologic Followup Study

Speaker: Deborah D. Ingram, National Center for Health Statistics

Chair: Sue Ahmed, National Center for Education Statistics

Date/Time: Thursday, June 11, 1992, 12:30 - 2:00 PM

Location: GAO Building, Room 2437, 441 G Street, NW, Washington, DC (Red Line -- Judiciary Square) Check in at guard's desk and state destination.

Sponsor: Methodology Section

Abstract: This talk is concerned with statistical issues faced by analysts of the National Health and Nutrition Examination Survey Epidemiologic Followup Study (NHEFS). The NHEFS is a longitudinal study which uses as its baseline those persons aged 25 to 74 who were examined at the first National Health and Nutrition Examination Survey (NHANES I). Most analysts of the NHEFS are interested in assessing the relationship between a set of risk factors and some outcome event, usually death or disease incidence. However, analysis of data from the NHEFS is not straightforward, since the analysts must consider differential lengths of follow-up, as well as a complex survey design.

This talk presents a strategy for the analysis of the NHEFS data, taking into account the differential followup times and with the option of incorporating either the sample weights or the clustering and stratification aspects of the survey design, or both. This approach uses the Cox proportional hazards model and person-time logistic regression (a modification of the cumulative logistic regression model developed for use with the NHEFS). The Cox model is commonly used to analyze data from epidemiologic followup studies, since it takes into account differential followup time. However, statistical methodology and software are not yet available to incorproate the complex survey design in the Cox model. The person-time logistic model, a modification of the cumulative logistic model, can incorporate both the differential survival times and the complex survey design.

Program Abstracts (cont'd)

Topic: Confidence Interval Estimation of Location and Scale Parameters Subject to Order Restrictions

Speaker: Shyamal Das Peddada, University of Virginia

Chair: Tapan Nayak, George Washington University

Date/Time: Tuesday, June 16, 1992, 12:30-2:00 PM

Location: GAO Building, Room 2437, 441 G Street, NW, Washington, DC (Red Line -- Judiciary Square) Check in at guard's desk and state destination

Sponsor: Methodology Section

Abstract: This talk deals with the construction of confidence intervals when the components of the location parameter μ of a random variable X, with probability density function $f((x-\mu)'\Sigma^{-1}(x-\mu))$, are subject to order restrictions. It is well known that the computation of the isotonic regression estimators (including the restricted maximum likelihood estimators) is not necessarily simple. In addition, under certain order restrictions, it is shown in this article that the confidence intervals centered at the restricted maximum likelihood estimators can have 0 coverage probability. Due to these reasons, a simple alternative scheme is introduced to construct estimators for parameters subject to order restrictions.

When Σ is diagonal, it is demonstrated analytically that the confidence intervals centered at the new estimators dominate the standard confidence intervals in terms of the coverage probability. Numerical computations show that the gains are substantial in some cases. When Σ is nondiagonal, the problem is very complicated and we obtain some partial results in this case. The problem of estimating scale parameters subject to order restrictions is also addressed. Several open problems and generalizations will be discussed, as well.

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Topic: Forecasting the Outcome of Political Elections: A Bayesian Approach

Speaker: Jose' M. Bernardo, Presidencia de la Generalidad Valenciana and Universidad de Valencia, Valencia, Spain

Discussant: Warren Mitofsky, Voter Research and Surveys

Chair: Richard Morin, *The Washington Post*

Date/Time: Wednesday, June 17, 1992, 2:30 - 4:00 PM (Refreshments to follow.)

Location: Elliot Room, George Washington University Club, 3rd Floor, 800 21st Street, NW, Washington, DC (Blue/Orange Line -- Foggy Bottom/GWU)

Program Abstracts (cont'd)

Forecasting the Outcome of Political Elections: A Bayesian Approach (cont'd)

Sponsor: Washington Statistical Society and George Washington University

Abstract: We shall describe a Bayesian approach to Election Night forecasting in political elections. It is argued that the only appropriate final expression of the analysis consists of a probability distribution over the relevant outcomes of the election. In Parliamentary elections, this is a probability distribution over the possible seat configurations of the Parliament. We use a sampling mechanism, based on the first 200 votes actually returned in the sets of precincts which have historically been representative of the results in each province. A multinomial model on the vote proportions obtained in each precinct and a multivariate reference prior are specified, in order to derive the posterior distribution for each of the provincial results. This posterior is transformed, by Monte Carlo integration, into a probability distribution over the possible distributions of the number of seats allocated to each province among the concurring political parties. Finally, the provincial distributions are aggregated to obtain a probability distribution over the possible seat configurations of the national Parliament. Relevant published material by the author includes Bernardo (1984, 1990) and Bernardo and Girón (1992).

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Topic: The New Dynamics: Nonlinearity, Chaos, and Their Implications for Economics

Speaker: Michael D. Weiss, Economic Research Service, USDA

Discussant: David Johnson, Bureau of Labor Statistics

Chair: Ted Jaditz, Bureau of Labor Statistics

Date/Time: Thursday, June 25, 1992, 1:30 - 3:00 PM

Location: Waugh Auditorium (in basement), 1301 New York Avenue, NW, Washington, DC (Blue/ Orange Line -- between Metro Center and McPherson Square) Call Linda Atkinson on (202) 219-0505 to place your name on the guard's list for entry.

Sponsor: Economics Section

Abstract: In recent years, research in both mathematics and the applied sciences has produced a revolution in the understanding of nonlinear dynamical systems. Used widely in economics and other disciplines to model change over time, these systems are now known to be vulnerable to a kind of "chaotic," unpredictable behavior. The slightest change in the initial conditions of a deterministic but nonlinear dynamic economic model can give rise to unpredictable changes in long run behavior. Such a system can generate stochastic noise entirely endogenously, without the intervention of any external influence. In this talk, Weiss will present the mathematical concepts underlying nonlinear and chaotic dynamics and will discuss their implications for economic modeling.

Program Abstracts (cont'd)

Topic: Martingales Without Tears

Speaker: Gordon Lan, George Washington University

Chair: Dean Follmann, National Heart, Lung and Blood Institute

Date/Time: Thursday, July 23, 1992, 1:00 - 3:00 PM

Location: NIH, Building 31, Conference Room 6, 9000 Rockville Pike, Bethesda MD (Red Line -- Medical Center)

Sponsor: Public Health and Biostatistics Section

Abstract: In anticipation of the upcoming Short Course on Martingales in Survival Analysis, on August 7th, this talk will provide a heuristic introduction to martingales and counting processes at an easy-to-follow level. It will focus on developing intuition about martingales that can aid in understanding the unified counting process representation of the logrank statistic and generalized Wilcoxon statistics. Examples, such as Nintendo games (see Lan & Wittes, 1985) and gambling, will be used to illustrate different concepts. Only basic knowledge of survival analysis and calculus will be required.

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*** * * Note from WSS NEWS Editors * * ***

This is the last newsletter until September. Items for the September WSS NEWS should be submitted no later than Tuesday, July 28, 1992. Fax items to:

Bettye Jamerson or Wendy Alvey
(202) 874-0922

Announcements (cont'd)

Census SRD Seminars

The Statistical Research Division, Bureau of the Census, conducts a regular seminar series throughout the year, which is open to interested local statisticians. The following sessions have been tentatively planned for June:

June 10 — Dr. Tracy Wellens, ZUMA, Mahnnheim, Germany, will be presenting a paper. Presentation given at Conference Room 1-2, Building 3;

June 17— Graham Kalton, Westat, Inc., will present "Sampling Rare Populations: A Review," in Room 2113, Building 3; and

June 24 — Lawrence Ernst, Bureau of the Census, will discuss "Apportionment Methods for the House of Representatives and the Court Challenges," in Room 2412, Building 3.

All sessions will be held at the Bureau of the Census in Suitland, MD. For more information, call Carol Macauley at (301) 763-7880.

New COPSS Award

The Committee of Presidents of Statistical Societies (COPSS), representing the ASA, ENAR, WNAR, IMS, and SSC, has instituted a new award in honor of Elizabeth L. Scott. The award, to be granted to a member of a COPSS society, recognizes men and women who have helped foster opportunities in statistics for women. The 1992 award will be presented at the 1992 Joint Statistical Meetings in Boston. Nominations should be sent to Jessica Utts, Division of Statistics, University of California, Davis, CA 95616-8705, by no later than June 30, 1992. For more information, call (916) 752-6496; jmutts@ucdavis.edu; or jmutts@ucdavis.bitnet.

ASA Call for Papers

The American Statistical Association is now accepting contributed papers for the 1993 ASA Winter Conference in Ft. Lauderdale, FL, January 3-5, 1993. The theme of next year's Winter Conference is "Families and Children: Research Findings, Data Needs and Survey Issues." The meeting is being sponsored by the Social Statistics Section, the Government Statistics Section, and the Section on Survey Research Methods of ASA. Abstracts and registration fees must be submitted to the ASA office by August 15, 1992. For more information, call (703) 684-1221.

Seeking Invited Sessions for 1993 ASA

The 1993 Program Committee is accepting suggestions for invited paper sessions for the Joint Statistical Meetings of ASA, ENAR, WNAR and IMS, to be held August 8-12, in San Francisco, CA. The theme for next year's annual meeting is "Statistics and the Sciences." Drafts of recommended sessions are due no later than July 1, 1992, and should be sent to the appropriate Section Program Chair. For more information, contact ASA at (703) 684-1221.

Virtual Reality Conference

The second annual Virtual Reality Conference and Exhibition will be held June 1-2, 1992, at the Holiday Inn Crowne Plaza in Arlington, VA. Virtual reality uses computer technology to present a dynamic visualization of data, as is done with flight simulators. The conference, sponsored by the Education Foundation of the Data Processing Management Association, will feature the latest commerical and military applications and developments in virtual reality technology. For more information, call (310) 534-3922.

QL Update

With the school year coming to a close, the area coordinators have met several times to review successes and brainstorm ideas to help guide the Quantitative Literacy group next year. While membership in the group and activities grew rapidly this year, there has been one nagging problem: getting access to schools is difficult!

During the summer, QL group members will be

Announcements (cont'd)

QL Update (cont'd)

working on several projects to help increase the awareness of WSS QL activities in local school systems. By September, informational brochures will be available, which we hope will expand awareness of QL activities. A good way to use these materials will be to pass them on to math teachers at PTA meetings.

Here is a great opportunity to get involved in the QL activities, while committing only a small amount of time. Would you volunteer to be the "point-person" with your PTA? All you need to do is pass on our information, try to get them interested, and help coordinate activities the school might request. We'll provide the help from the 60 eager volunteers now on our rolls. Please give the coordinator from your area a call if you would like to provide this service or to help with general QL activities.

AREA	COORDINATOR	PHONE
Alexandria	Paul Cook	(202) 720-3619
Arlington	Eugene Burns	(202) 586-1125
Fairfax	Shail Butani	(202) 523-1850
Howard	Mike O'Donnell	(202) 485-0062
Montgomery	Lee Abramson	(301) 492-3949
Prince Georges	Gary Shapiro	(301) 763-2671
Prince William	Brad Pafford	(202) 268-6056
Wash., DC	Paul Burke	(202) 708-8093

(We still need a coordinator in Charles County and more distant counties, if members live there. We also anticipate some new activities with TC Williams H.S. in Alexandria, starting in August.)

Join a team that hopes to make a difference!

As a final note, let me express my appreciation for all the work done by members of the WSS QL group this school year. I look forward with great anticipation to next year, when we hope to provide opportunities for even more rewarding experiences.

Ron Fecso
Chair, WSS Quantitative Literacy Group
(202) 334-2295

Tentatively Scheduled SIGSTAT Meeting

SIGSTAT is the Joint Special Interest Group in Statistics for the Capital PC User Group and WORMSC (Washington Operations Research/Management Science Council). The following event is tentatively scheduled for June:

June 3 **Microfit.**-- An interactive, menu-driven, econometric package from England. Includes many specification tests.

All meetings are scheduled for Wednesdays from 12:30 - 1:30 PM in Room B-14, 1301 New York Ave., NW, Washington, DC. (The building is located midway between the Metro Center and McPherson Square Metro stops.) If this is your first SIGSTAT meeting, call Charlie Hallahan, (202) 219-0507, to gain entry into the building.

Employment Column

As a service to local statisticians, the **Washington Statistical Society News** provides notification of employment opportunities and descriptions 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 write to: Bill Arends, USDA-NASS, Room 4133 South Building, Washington, DC 20250-2000. Contact Mr. Arends at (202) 720-6812.

Vacancies

Statistical Scientist

The Biometric Research Branch, National Cancer Institute, expects to have a career position available for a statistical scientist with a doctoral degree in statistics, biostatistics or biomathematics. The Branch collaborates in the design, monitoring, and analysis of major cancer clinical trials. It conducts research in statistical methodology and collaborates in preclinical and basic research.

Employment Column (cont'd)

Vacancies (cont'd)

Statistical Scientist (cont'd)

The individual selected will be a key participant in the national clinical trials program of the Division of Cancer Treatment. The Division will look to this individual to develop improved methodology for the design and analysis of biomedical experiments and to remain knowledgeable in the state-of-the-art of statistical methodology. The selected applicant will have the time and opportunity to continually broaden his or her statistical knowledge by close interaction with others in the Biometric Research Branch and in the NIH community of statisticians.

Salary range is dependent on qualifications. This is a Federal Civil Service position. Candidates must have U.S. citizenship. For further information, send curriculum vitae to: Dr. Richard Simon, Chief, Biometric Research Branch, National Cancer Institute, 6130 Executive Blvd., Room 739, Rockville, MD 20852; Telephone (301) 496-4836. EOE

Statisticians

Westat is an employee-owned corporation headquartered in the suburbs of Washington, DC (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.

Our company was founded nearly 32 years ago by three statisticians. The current staff of more than 650 includes statisticians, survey researchers, psychologists, medical researchers, sociologists, economists, market research and behavorial 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:

- Survey Sampling.--Experience required in sample design and selection, frames development, weighting, and variance estimation. Must have Masters degree or Ph.D. in statistics program.

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

- Biostatistician.--Work in clinical trials: their design, analysis and management. Also work in survival models and longitudinal studies. 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.

To ensure proper consideration, interested applicants should indicate one of the above areas and send resume with current salary to: Personnel Director, Westat, Inc., Dept. DRMX, 1650 Research Blvd., Rockville, MD 20850. EOE

Job Applicant

Listed below are brief descriptions of the qualifications of an applicant seeking employment. Em-

Employment Column (cont'd)

Job Applicant (cont'd)

ployers interested in interviewing an applicant should contact Bill Arends by mail -- at USDA-NASS, Room 4133 South Building, Washington, DC 20250-2000 -- or by telephone -- at (202) 720-6812. All requests should include the code number from the applicant's ad and 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 kept confidential.

Applicant #92-06

Education:

Ph.D. in Statistics, Temple University, 1992
M.Stat. in Statistics, with specialization in Statistical Quality Control & Operations Research, Indian Statistical Institute, 1986
B.Sc. (with honors) in Statistics, Calcutta University, 1984

Experience:

- Research Associate, Office of Academic Planning, Temple University.--Responsible for developing and maintaining SAS and SPSS-X programs (including macros), database management and report generation for administrative uses.

- Statistical Consultant, Data Analysis Laboratory, Temple University.--Provided theoretical and computational support to analyze, interpret and report interdisciplinary statistical problems for Temple academic community.

- Teaching Assistant.--Department of Statistics, Temple University; taught upper-level undergraduate courses in Statistics.

- Consulting Statistician, Academy of Natural Sciences.--Provided toxicological analysis of impacts of nuclear power plants on marine life in Chesapeake Bay.

- Systems Analyst and Programmer, Tata Consultancy Services, India.--Responsibilities included requirements and systems analysis, design and development, technical support and personnel training for commercial software developed in-house.

Skills:

- Software, Statistical and Mathematical Packages. --Fluent in S, SAS, SPSS-X and GENSTAT, IMSL, NAG mathematical subroutines and TEX and LATEX typesetting packages. Working knowledge of MINITAB, GLIM and BMDP. PC-based packages include WordPerfect, dBase III, Lotus 1-2-3, Kermit and PC-SAS.

- Operating Systems.--Proficient in UNIX programming environment. Well-versed in OS and JCL, as well in VM/XA CMS environment. Knowledge of PC-DOS, MS-DOS and VMS environments.

- Language.--Fluent in Fortran (both IV and 77), Pascal and Cobol. Working knowledge of APL, Basic and C.

Visa Status: U.S. Permanent Resident

NEWS FLASH!

After 7 years, Susan Ellenberg is stepping down as Science Fair Coordinator. We need a new volunteer -- Ellenberg has promised to help through the transition. If you are interested, call Marie Argana at (301) 763-4595. For more information, call Ellenberg at (301) 496-0694.

P.O. Box 752
Suitland, MD 20752