June 1986

1986: The 60th Birthday of WSS

WASHINGTON STATISTICAL SOCIETY

# NEWSLETTER

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| June 10 | Tuesday | Measuring Non-Cash Benefits |
| June 11 | Wednesday | UNIXSTAT Statistical Software for UNIX-based Minicomputers and for MS-DOS-based Personal Computers |
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| June 19 | Thursday | The Bias of Some Dual System Estimators |
| July 1 | Tuesday | Mathematical and Statistical Software and its Documentation at the National Bureau of Standards |
| July 17 | Thursday | A Graphical Procedure for Determining Nonstationarity in Time Series and Spatial Processes |

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## President's Report, 1985-1986---by Mary Grace Kovar, WSS President

After a year as president, I believe more firmly than ever that the Washington Statistical Society is an amazingly good organization. The reason is simple; it has outstanding members who work hard for its success. The examples are numerous. Many of them have been reported in this Newsletter. I can only highlight a few.

As usual, the program chairs produced an interesting range of scientific sessions. Many members of WSS have been involved as speakers, chairs, or discussants. Many others have attended one or more of the sessions. The names of the chairpersons are listed in each Newsletter. I would like to thank each of them personally and on behalf of the entire WSS membership.

The Methodology Section deserves special mention. Under the by-laws that were adopted at the end of the last year, the Section was required to develop operating procedures to be approved by the Board of Directors. They developed their operating procedures and they also presented 18 sessions this year.

The short courses have continued to be enormously successful. There are usually more people interested in attending than there is room for. An innovation that Virginia DeWolfe introduced this year was using the videotapes of short courses that ASA makes available to chapters and having one of the lecturers there in person as well. Our thanks to ASA for making this possible.

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## WASHINGTON STATISTICAL SOCIETY PROGRAM CHAIRS

**Agriculture & Natural Resources**
- Fred A. Vogel 447-3638
- Gary Liberson 363-7140

**Economics**
- Bette S. Mahoney 697-5655
- Wray Smith 528-2772

**Physical Sciences and Engineering**
- Seymour Selig 334-3522
- Nozer Singpurwalla 676-7515

**Public Health & Biostatistics**
- Jai Choi 436-7047
- GooLoo Wunderlich 245-2100

**Social & Demographic Statistics**
- Lee-Ann C. Hayek 357-1587
- Donald J. Hernandez 763-7950

**Statistical Computing**
- Harry Foxwell 872-8058
- Ron Steele 475-3483

**Short Courses**
- Virginia deWolf 275-5801
- Josefina Lago 251-1500
- Andrew A. White 436-7022

**Methodology**
- Cathryn Dippo 523-1874
- Mary Mulry-Liggan 763-7140

**Newsletter Editor**
- Julia Oliver 252-5744

**Employment**
- Evelyn Kay 331-1153

## President's Report (Continued)

The work of the committees is not as visible as the sessions and short courses, but it is extremely important to the organization.

The Committee on Fellows, chaired by Katherine Wallman, developed a list of candidates for ASA Fellows, took responsibility either for nominating or assisting in writing nominations, and wrote letters supporting the candiates. We shall not know until August how many members of WSS were elected to Fellowship this year; I can only tell you that the Committee on Fellows felt that several members deserved the honor and supported their nominations. The Nominating Committee, chaired by Terrence Ireland, produced the excellent group of nominees that you saw listed on your ballots. The quality of the nominees reinforces my belief that members of this organization are willing to work for its continued success. Thank you all for agreeing to serve.

The Social Committee, David and Marilyn McMillen, planned both the holiday party last December and the annual dinner in May.

Some activities were new this year.

Under the leadership of Susan Ellenberg, WSS participated in area Science Fairs for the first time this year. A full report, including the names of the awardees and the judges, is in this issue of the Newsletter. I hope that we will continue to participate in the future. The project was so successful that more judges will be needed next year.

A Strategic Planning Committee, chaired by Charles Mann, met several times and made recommendations to the Board. The Committee could not do all of the work that needs to be done, but they identified the areas where work needs to be done and set the process in motion.

There are other members who are willing and interested. Although I cannot write to each of you personnally, I want to thank everyone who answered the call for volunteers. The list will be used. Don't be surprised when you are called and asked to do something. It may be something that you were not expecting when you volunteered, like judging a science fair or planning for the ASA Sesquicentennial meeting here in Washington, but you will be hearing from someone.

I would like to close with very special thanks to two people who have made very special contributions to WSS and who will be turning over their responsibilities to other people during the next year. Rich Allen has been a secretary who provided the continuity that is so essential to the success of a volunteer organization. A president, who only serves for one year, does not know all the things that need to be done or how to do them. Rich has known the answer to every question I asked him and to many that I didn't even know to ask. Julia Oliver has been a newsletter editor who, as far as I can tell, works miracles. The Newsletter always appears and it is always interesting and full of information. I don't know how she does it. I have simply been grateful that she has. All of use owe Rich and Julia a very special thank you.

I have enjoyed this year. Thank you for the pleasure that being WSS President has given me.

# PROGRAM ABSTRACTS

TOPIC: Measuring Non-Cash Benefits
SPEAKER: Gordon Green, Bureau of the Census
CHAIR: Michael Mahoney, Consultant
DISCUSSANT: Gary Bass, OMB-Watch
DATE & TIME: Tuesday, June 10, 1986; 12:30 - 2:00 p.m.
LOCATION: George Washington University, Room 322, 2201 G Street, N.W.
ABSTRACT: In December 1985, the Bureau of the Census sponsored a conference on the measurement of non-cash benefits. Mr. Green will report on the conclusion of that meeting and on the Census Bureau's future plans for publishing data on non-cash benefits.

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TOPIC: UNIXSTAT Statistical Software for UNIX-based Minicomputers and for MS-DOS-based Personal Computers
SPEAKERS: Harry Foxwell, American Chemical Society and Charlie Hallahan, United States Department of Agriculture
DATE & TIME: Wednesday, June 11, 1986; 12:30 - 2:00 p.m.
LOCATION: Lower-Level Conference Room, 1301 New York Ave., N.W. (Call 786-1507 to arrange for building entry.)
ABSTRACT: UNIXSTAT is a high-quality "share-ware" statistical package that may be freely distributed among interested users. It is written in the "C" language for UNIX-based minicomputers and for MS-DOS-based personal computers. The package can perform ANOVA, contingency table analysis, multiple regression, and time series analysis. It also computes descriptive statistics, creates elementary plots, and has a handy symbolic calculator program. Source code is available for those interested in studying or modifying the program.

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TOPIC: Causal Models for Patterns of Nonresponse
SPEAKER: Robert Fay, Bureau of the Census
CHAIR: Robert Casady, National Center for Health Statistics
DISCUSSANT: Fritz Scheuren, Internal Revenue Service
DATE & TIME: Thursday, June 12, 1986; 12:30 - 2:00 p.m.
LOCATION: Room 2736, GAO Building, 441 G Street, N.W. (Call 523-1760 to arrange for building entry.)
ABSTRACT: This talk discusses models for nonresponse for categorical variables. The system of causal models formulated by Goodman provides a means to represent possible relationships between the survey variables and response. Many such models are estimated from the observed data and provide alternative estimates for the missing data. Such models may be used to assess the evidence for a possible dependence between the value of a variable and whether it is reported. If such models can be validated from an independent source, such as administrative records, then they may provide the basis for nonresponse adjustments different from those now common to survey research practice.

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TOPIC: The Bias of Some Dual System Estimators
SPEAKER: Gary Isaki, Bureau of the Census
CHAIR: Jai Choi, National Center for Health Statistics
DISCUSSANT: Michael Cohen, University of Maryland
DATE & TIME: Thursday, June 19, 1986; 1:30 - 3:30 p.m.
LOCATION: Room 1-39, NCHS, 3700 East West Highway, Hyattsville, MD.
ABSTRACT: Dual system estimation has been used in many demographic applications. Such uses include estimation of total population as well as vital events. The bias of some dual system estimators are derived and compared when the usual assumed conditions do not apply.

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TOPIC: Mathematical and Statistical Software and its Documentation at the National Bureau of Standards
SPEAKER: Sally Howe, National Bureau of Standards
CHAIR: Robert Fay, Bureau of the Census
DATE & TIME: Tuesday, July 1, 1986; 1:30 - 3:30 p.m.
LOCATION: Room 1-23, NCHS, 3700 East West Highway, Hyattsville, MD.
ABSTRACT: The problem of providing general purpose mathematical and statistical software for use on a variety of computers has been addressed at NBS with the provision of large, portable, public-domain Fortran subprogram libraries. The companion problem of documenting software in these libraries and in proprietary packages, in such a way that researchers can easily locate software to perform specific calculations, is addressed through the NBS Guide to Available Mathematical Software (GAMS). The software, its documentation, and its maintenance will be described.

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TOPIC: A Graphical Procedure for Determining Nonstationarity in Time Series and Spatial Processes
SPEAKER: Noel Cressie, Iowa State University
CHAIR: Stuart Scott, Bureau of Labor Statistics
DISCUSSANT: William Bell, Bureau of the Census
DATE & TIME: Thursday, July 17, 1986; 12:30 - 2:00 p.m.
LOCATION: Room 2736, GAO Building, 441 G Street, N.W. (Call 523-1760 to arrange for building entry.)
ABSTRACT: Integrated processes as models for time series data have proved to be an important component of the highly flexible class of ARIMA(p,d,q) models. Determining the amount of differencing, d, has been a difficult task; too little and the process is not yet stationary, too much and the process is typically more variable than it need be. It is shown that by introducing the notion of generalized covariance, developed by Matheron (1973) for spatial processes, the amount of differencing needed can be read from a sequence of graphs showing sums of squares of primary data increments. Formal inference to see if the last difference really is necessary, could then be carried out. The method is illustrated on temporal and spatial data.

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## OTHER ANNOUNCEMENTS

### ASA Statistical Graphics Section

The new Statistical Graphics Section of the ASA is asking for the support of the chapters and the involvement of individual members. They have asked for the opinions of members of WSS and for volunteers to work with the new section. It is easy for WSS members to volunteer; the chair of the section is Lawrence Cox at the Bureau of the Census. Any WSS member interested in contributing to the goals of the section is urged to contact him. His address is: Lawrence H. Cox, Office of the Director, Bureau of the Census, Washington, D.C. 20233; (301) 763-7650.

## Report on WSS Activities at Area Science Fairs--by Susan Ellenberg

This year, the Washington Statistical Society joined many other scientific organizations in awarding special prizes at science fairs in the Metropolitan Washington Area. A total of 23 students were given awards. Winners of first prize in each division received a copy of Statistics: A Guide to the Unknown, edited by Tanur, Mosteller et al.; second-prize winners received a WSS mug. Fifteen volunteer judges donated a Saturday morning to review projects at six area fairs. Judging criteria were not formally defined, but a general premise was that winning projects could either focus on statistical methodology (these would be entered primarily in the mathematics category) or could demonstrate appropriate application of statistical methods to a research problem. The latter type of project could have been entered in any of the judging categories. Thus, the WSS judges were required to screen all projects entered, numbering 400-500 in most of the fairs. Projects receiving awards from the WSS were entered in a variety of categories, including behavioral science, medicine and health, engineering, botany, physics, mathematics and computer science.

The fairs were generally quite well organized, and most provided at least coffee and donuts to help the judges through a hectic morning (some provided lunch as well!) All judges who have provided feedback so far have been very positive about the experience, particularly with regard to the opportunity to talk with bright, motivated students about science and statistics. Another point of agreement was that the experience could be even more rewarding if there were more judges, allowing each judge to spend more time considering each project and talking to students. Those of you who meant to volunteer this time but never got around to it--please resolve to call and volunteer the next time around. Two to three judges per fair was workable but not optimal. Four would probably be about right.

Recognition is also due the WSS members who served as judges. They are: Bill Warde, Don Stablein, Annie Hays, Patricia Cleary, R. Chilakamarri, Lee Abramson, Gloria Gridley, Wanda Thomas, Bill Cleveland, Mary Foulkes, Linda Pickle, Dwight French and Susan Ellenberg.

Winners of WSS special awards and their project titles are as follows:

Fairfax County, Areas I & IV

Senior Division
- First Prize: Adrienne Hauber, 11th Grade, Edison H.S.
  How Does Caffeine Affect Motor Reflexes?
- Second Prize: Susan McLeskey, 10th Grade, Mt. Vernon H.S.
  Nitrites in Food

Junior Division
- First Prize: Eric Quick, 7th Grade, Hayfield I.S.
  A Statistical Analysis of Seventh Grade Student Performance
- Second Prize: Jerold Hersh, 8th Grade, Lake Braddock I.S.
  Do People Recall Incompleted Tasks More Easily Than Completed Tasks?

Fairfax County, Areas II & III

Senior Division
- First Prize: Dan Bernstein, 10th Grade, South Lakes H.S.
  Modeling Algebraic and Geometric Probabilities.

Junior Division
- First Prize: Scott Hall, 8th Grade, Longfellow I.S.
  Probability of Dice Rolls.

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District of Columbia

Senior Division

First Prize: Taunya Ferguson, 11th Grade, Dunbar H.S.
Origin of Left- and Right-Handedness.

Junior/Elementary Division

First Prize: Thomas Karro-Gassner, 5th Grade, Oyster E.S.
Who is the Mayor?

Second Prize: Alexis Dottery, 6th Grade, Brent E.S.
The Effect of Exercise on Human Performance

Second Prize: Julaine Hunter, 8th Grade, Hobson M.S.
Social Interaction With a Pet Dog.

Northern Virginia (Arlington, Alexandria, Falls Church)

Senior Division

Second Prize: Christian Barker and Jennifer Cude, 10th Grade
Washington-Lee H.S.
The Effect of an Alcoholic Home Life on the Academic Performance of the High School Student.

Junior Division

First Prize: Keith Haraguchi, 8th Grade, Williamsburg I.S.
How Do Various Exercises Affect Heart Rate?

First Prize: David Shinn, 7th Grade, Thomas Jefferson I.S.
To Determine the Amount of Fins Necessary to Obtain Maximum Height The Rocket Can Achieve But With the Least Weight and Wind Resistance.

Montgomery County

Senior Division

First Prize: Taro Akiyama, 11th Grade, T.S. Wooten H.S.
Mathematical Analysis of Lung Cancer Survival Times

Second Prize: Charles Gravelle, 9th Grade, Cabin John J.H.S.
Law of Probability

Second Prize: Courtney Smith, Bethesda-Chevy-Chase H.S.
Anti-Anxiety Properties of CGS-9896 on Mice.

Junior Division

First Prize: W. Richard O'Connell, Takoma Park I.S.
The Physics, Mathematics and Fun of Bubbles.

Second Prize: Evan Szu, Takoma Park I.S.
The Effect of Temperature on Elastic Balls.

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## Report on WSS Activities at Area Science Fairs--by Susan Ellenberg (Continued)

### Prince George's County

Senior Division

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| First Prize: | Arvind Krishnamurthy, Eleanor Roosevelt H.S.<br>Age Factor in Predator-Prey Systems. |
| Second Prize: | Sherita Hill, Eleanor Roosevelt H.S.<br>Ozone Sensitivity in Soybeans. |

Junior Division

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| First Prize: | Douglas Wilson, Greenbelt M.S.<br>N-sided Dice Frequency Distribution |
| Second Prize: | Margaret McCusker, Greenbelt M.S.<br>Effects of Color on Memory |

## Brief Summary of ASA Board of Directors Meeting, April 17-19, 1986

(Full report will appear in AMSTAT News)
by Eva E. Jacobs, Representative, District 1

1. The ASA strategic planning effort continued. Three Task Forces have been formed: I. Strategy for ASA program direction; II. ASA organization; III. ASA interaction with other organizations. The charges to these groups were accepted and reports on their progress reviewed. Goals and further progress reports will be reviewed at the November Board Meeting. Final report will be presented to members in AMSTAT News.

2. Report of the Committee on Journal Options was presented. The pros and cons of offering different packages of journals to ASA members were discussed at length. The Board voted to support a proposal for giving members options and requested specific recommendations from the Committee on Publications and Task Force I.

3. The financial report was accepted. Full programmatic budgeting is being undertaken in addition to the line budget.

4. The Associate Director for Business Affairs of ASA, a new position, reported on the status of the new word processing and computer system which appears to be going well in incorporating membership data.

5. The Building and Development Fund (BDF) now has about $900,000, which is not sufficient for acquiring or building a building. The Board reviewed reports from two consultants proposing some form of joint venture with a developer which would provide a building with eventual ownership. The Board voted that the Executive Director be authorized to seek such a developer with the agreement to include a specified list of provisions. The agreement is to be brought to the Board for review of financial feasibility and approval.

6. Continuing Education Committee (CEC). The Board reviewed the report of a 3-year activity of the Advisory Committee on Continuing Education. The Board voted to continue the Continuing Education activity as an integral part of ASA and continued the life of the Advisory Committee. Communication between the CEC and sections, chapters and other organizations should be increased. The CEC was requested to review the question of CE as a leadership activity or whether it has become an education function that competes with educational institutions.

## Brief Summary of ASA Board of Directors Meeting, April 17-19, 1986 (Continued)

7. The Board will approve time and location of future ASA annual meetings after staff proposals are approved by the Executive Committee.

8. An editorial search policy was approved that provides a more active role for the Committee on Publications in selection of ASA journal editors.

9. The Committee on Publications was requested to provide guidelines and procedures for ASA work on publication of proceedings from sponsored or co-sponsored symposia by commercial publishers.

Member input is very important in planning ASA services. I would be happy to receive comments on any of these items or the full AMSTAT News Report through WSS or directly to me at 272-5156.

## Writing and Presenting Statistical Papers

For a number of years now, the WSS has joined with the ASA in an effort to improve the quality of statistical papers--especially those presented and published in conjunction with the Annual Meetings of the ASA. This year, the Workshop organizers have decided to take a rest.

Despite the fact that many WSS members have already attended these sessions and that budget constraints are making it harder (and less likely) for inexperienced speakers to attend the Annual Meetings, the WSS Short Course Committee recognizes that there is still a need for guidance where writing and presenting papers are concerned. Therefore, first, we refer you to three excellent articles: "Writing Technical Papers or Reports," by A.S.C. Ehrenberg, The American Statistician, Vol. 36. No. 4, November 1982; "Presenting Statistical Papers," by David Freeman, Maria Elena Gonzalez, David Hoaglin, and Beth Kilss, The American Statistician, Vol. 37, No. 2, May 1983; and "How to Display Data Badly," by Howard Wainer, The American Statistician, Vol. 38, No. 2, May 1984.

If you should require further guidance, some useful handouts prepared for past Workshops are available upon request. In a few words, they recommend peer review, practice, and visual aids. For copies, contact: Wendy Alvey, Internal Revenue Service (D:R:S:P), 1111 Constitution Avenue, N.W., Washington, D.C. 20224.

## Record Linkage Techniques -- 1985

Last May the Washington Statistical Society and the Federal Committee on Statistical Methodology joined forces to sponsor the Workship on Exact Matching Methdologies. The preceedings of that very successful conference are now available in a recent publication by the Internal Revenue Service, entitled Record Linkage Techniques -- 1985.

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The 397-page volume is intended to serve as a handbook on modern matching theory, as well as a report on the current state of the art. As such, it contains selected background material on exact matching theory; papers on current thought and practice; applications of matching in the Federal statistical environment; descriptions of some recent computer software for exact matching; and extensive bibliographic citations on record linkage techniques and related work.

The publication is available from the IRS' Statistics of Income Division for $15.00 a copy (made payable to IRS Accounting Section). To order, contact:

Beth Kilss
Internal Revenue Service (D:R:S:P)
1111 Constitution Avenue, NW
Washington, D.C. 20224.

## EMPLOYMENT COLUMN

Deadline for inserting notices is five (5) 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

Computer Programmer (GS-7-11, $17,824-$26,381). The National Center for Health Statistics, Division of Health Examination Statistics, is recruiting a computer programmer to work on data-collection systems for a national health and nutrition examination survey. Qualifications include experience with IBM MVS systems, SAS, PL/1, Oracle, survey design or methods, epidemiology, or medical sociology. Applicants should send resumes or SF-171 to Wilbur C. Hadden, 3700 East-West Highway, Room 2-50, Hyattsville, MD 20782.

Statistician & Biostatisticians. JIL Systems and Services, Inc. needs two mid-level statisticians in the health/medicare and/or related fields. They also have an immediate need for a biostatistician. Interested individuals should contact James W. Montgomery at (703) 979-0430.

GS-12 Statistician. The National Center for Health Statistics has a potential opening for a statistician to do analyses of data from the National Health Interview Survey. A background in health or epidemiology with strong survey analysis skills is required. For additional information, contact Gerry Hendershot at (202) 436-7089 or send your completed SF-171 to him at: Division of Health Interview Statistics, NCHS, Room 2-44, 3700 East-West Highway, Hyattsville, MD 20782.

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JOB APPLICANT

Listed below is a brief description of the qualifications of an applicant seeking employment. Please contact this applicant directly, as follows: John Rogers, 619 S. Orchard Street, #2, Madison, WI 53715, or telephone (608) 258-1314.

CODE NUMBER: 86-08

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| Position wanted: | Statistical consultant position (government or nongovernment) working with engineering, environmental, or public health sciences |
| Education: | MS Statistics 1983, University of Wisconsin/Madison; MS Environmental Decision Making 1976, University of Wisconsin/Madison; BS Physics 1970, Haverford College |
| Experience: | Two + years as biostatistician, consulting on design, analysis, and interpretation of water toxicology experiments for EPA. Background in linear models, design of experiments, biostatistics, time series, and nonlinear regression. Experienced programmer. Proficient with MINITAB, SAS, BMDP. |

WASHINGTON STATISTICAL SOCIETY
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