# WSS NEWS

**WASHINGTON STATISTICAL SOCIETY**

## May 1993

## SHORT COURSE SNOWED OUT !

The WSS Short Course Committee regrets that the Exploratory and Robust Data Analysis course with David Hoaglin and Andrew Siegel had to be cancelled. The course, scheduled for April 29-30, 1993, was displaced when the Jefferson Auditorium at the U.S. Department of Agriculture suffered structural damage during the recent blizzard. There are no plans to offer the course again this program year.

## 1992 ELECTION BALLOT

An election ballot for the 1992-1993 program year of the Washington Statistical Society Board of Directors is enclosed in this issue. Biographical information on the candidates is provided on pages 7 through 9. Be sure to fill in your ballot and mail it to the address on the reverse side. Ballots must be received by **Friday, May 21, 1993**, to be counted. Results will be announced at the WSS Annual Dinner at Laporta's, in Alexandria, VA, on Wednesday, June 16, 1993.

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

**MAY**

| | | |
|---|---|---|
| 5 | Wed. | The Model-Assisted Approach in Survey Sampling |
| 11 | Tues. | Statistical Debates and Controversies |
| 18 | Tues. | Quality Improvement through Employee-Centered Self-Assessments |
| **25** | **Tues.** | **Open Board Meeting** |
| 26 | Wed. | The Relationship between the Term Structure and Stocks of Unleaded Gasoline |
| 27 | Thur. | Improving Models Used to Estimate Bias in Payroll Employment Estimates |

## Announcements

### Open Board Meeting

The Board of Directors of the Washington Statistical Society generally meet 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, May 25, 1993. The meeting will be held in the BLS Cognitive Lab, Room 2990, Postal Square Building, 2 Massachusetts Ave., NE, Washington, DC, from 12:30 - 2:00 PM (Red Line -- Union Station). Enter at Massachusetts Ave. and North Capitol Street. Federal employees must show their badge; non-government employees contact Ed Riddick at (202) 606-7376 by no later than May 19, to add name to visitors' list.

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. **We look forward to seeing you there.**

### Symposium on Transportation and Math Sciences

On May 13, 1993, the Board on Mathematical Sciences will sponsor the 1993 Science and Technology Symposium on "Transportation and the Mathematical Sciences: the Changing Interaction." The meeting will focus on the increasing use of the mathematical sciences in planning and operations for surface and air transportation. The symposium will be held from 2:00 - 5:00 PM in the Auditorium, National Academy of Sciences. Registration is free but seating is limited. For information on reservations contact the Board on Mathematical Sciences, National Research Council, NAS 312, 2101 Constitution Ave., NW, Washington, DC 20418; phone: (202) 334-2421; Fax: (202) 334-1597; e-mail:bms@nas.edu or bms@nas.bitnet.

### Other Up-coming Events....

Following are a number of up-coming events which may be of interest to Chapter members:

● May 2-7, 1993,993, Temple University and the National Institute of Standards and Technology will sponsor a conference on Extreme Value Theory and Its Applications. For information, contact Stefan Leigh, Admin A337, NIST, Gaithersburg, MD 20899; phone: (301) 975-2856; fax:(301) 990-4127; e-mail: leigh@tiber.nist.gov.

# Program Abstracts

Topic:     The Model-Assisted Approach in Survey Sampling

Speakers:  Carl-Erik Särndal, University of Montreal, Canada
           Bengt Swensson, University of Örebro, Sweden

Chair:     Fritz Scheuren, Internal Revenue Service

Date/Time: Wednesday, May 5, 1993, 12:30 - 2:00 PM

Location:  BLS Cognitive Laboratory, Postal Square Bldg., Room 2990, 2 Massachusetts Avenue,
           NE, Washington, DC. (Red Line -- Union Station) Enter at Massachusetts Ave. and
           North Capitol St. Federal government employees show ID; non-government employees
           call Ed Riddick at (202) 606-7376 by April 30 to add name to visitors' list.

Sponsor:   Methodology Section

Abstract:  For a long time, statisticians have been assisted more or less formally by models in
           their search for efficient survey strategies. Thus, model-assisted reasoning is not new.
           However, systematic development and pursuit of model-assisted principles may be
           new. Our seminar attempts to exemplify these principles and their consequences.

           Model-assisted reasoning applies -- under a strictly design-based inference mode -- to
           the use of auxiliary information in a wide spectrum of applied survey settings and
           becomes especially apparent in attempts to improve the quality of estimation for not-
           so-large domains of the whole population. Model-assisted reasoning extends -- after
           abandoning the strictly design-based mode -- to structuring inferences, when surveys
           are affected by nonsampling error. Here, the model-assisted reasoning can be viewed
           as a desire to stay close in spirit to strictly design-based principles. In the treatment of
           nonresponse, for example, model-assisted reasoning helps in the estimation of
           response probabilities and/or in the fabrication of values for imputation.

## Program Abstracts (cont'd)

Topic:      Statistical Debates and Controversies

Speaker:    Erich L. Lehmann, University of California, Berkeley

Chair:      Samuel W. Greenhouse, George Washington University

Date/Time:  Tuesday, May 11, 1993, 12:30 - 2:00 PM

Location:   Funger Hall, Room 103, 2201 G Street, NW, Washington, DC  (Blue/Orange
            Lines -- Foggy Bottom/GWU)

Sponsor:    Methodology Section and George Washington University

Abstract:   Three kinds of disputes will be considered:  Priority arguments, technical controver-
            sies, and broad philosophical debates.  Examples of each will be given and their
            implications discussed.  Lehmann is widely recognized as a distinguished statistical
            scientist.  He is well known for his original contributions to mathematical statistics,
            including seminal textbooks on hypothesis testing, point estimation and nonparametric
            statistics.  Lehmann is a Fellow of both the American Statistical Association and the
            Institute of Mathematical Statistics.

*       *       *       *       *       *       *

Topic:      Quality Improvement through Employee-Centered Self-Assessments

Speaker:    Richard C. Smith,  The Pacesetter Group

Chair:      Kenneth Riccini, Bureau of the Census

Date/Time:  Tuesday, May 18, 1993, 12:30 - 2:00 PM

Location:   BLS Cognitive Laboratory,  Postal Square Bldg., Room 2990, 2 Massachusetts
            Avenue, NE, Washington, DC.  (Red Line -- Union Station)  Enter at Massachusetts
            Ave. and North Capitol St.  Federal government employees show ID; non-government
            employees call Ed Riddick at (202) 606-7376 by May 13, to add name to visitors' list.

Sponsor:    Quality Assurance Section

## Program Abstracts (cont'd)

**Quality Improvement through Employee-Centered Self-Assessments (cont'd)**

Abstract:     The Baldrige and Presidential Award Criteria are nationally recognized performance criteria designed to assist organizations in improving quality. This presentation describes a software-assisted, employee-centered, self-assessment that is based on the criteria. The assessment is effective as an internal change agent for focusing and integrating strategic planning and quality improvement efforts. The model includes eight elements for measuring the progress of quality improvement. Mr. Smith will discuss the practical applications of the assessment in both private and public sector organizations.

\*   \*   \*   \*   \*   \*

Topic:        The Relationship between the Term Structure and Stocks of Unleaded Gasoline

Speaker:      Allan Griffith, Energy Information Administration

Discussant:   Ted Covey, Economic Research Service

Chair:        John H. Herbert, Energy Information Administration and Virginia Polytechnic Institute and State University

Date/Time:    Wednesday, May 26, 1993, 12:30 - 2:00 PM

Location:     Room GJ-015 Forrestal Bldg., 1000 Independence Ave., SW, Washington, DC. (Yellow or Blue/Orange Lines -- L'Enfant Plaza) Government employees show ID; nongovernment employees contact John Herbert at (202) 586-4360, by no later than May 25, 1993, to arrange for admittance.

Sponsor:      Agricultural and Natural Resources Section

Abstract:     The futures market links the present and future financially, while inventories link the present and future physically. The term structure of the futures market for a commodity is a snapshot, in time, of prices starting at the spot market price and looking into the future. Stock levels tell a comparable story about supply and demand expectations for the commodity. This paper presents the theoretical relationships between the term structure and stocks of unleaded gasoline. It then tests the relationship empirically using weekly data. The results verify the existence of the hypothesized linear relationship. Further analyses point to market conditions under which this expected relationship does not hold.

## Program Abstracts (cont'd)

Topic:      Improving Models Used to Estimate Bias in Payroll Employment Estimates

Speakers:   George Stamas, Diem Tran Kratzke, and Kirk Mueller, Bureau of Labor Statistics

Discussant: Mark Otto, Bureau of Census

Chair:      Linda Atkinson, Economic Research Service

Date/Time:  Thursday, May 27, 1993, 12:30 - 2:00 PM

Location:   Waugh Auditorium ( in basement), 1301 New York Ave., NW, Washington, DC. (Blue/Orange Lines -- 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:   Payroll employment estimates from the BLS Current Employment Statistics Survey (CES) include a model-based adjustment for bias. This bias is attributed primarily to sample frame inadequacies, such as the delay involved in including new establishments and the difficulty associated with estimating changes in a population that includes births and deaths of units. The objective in modeling bias is to select the model that uses available information to forecast the change most accurately. The model now in use is a fixed coefficient regression that is periodically estimated. Frequently, the regression estimate of bias is modified based on recent experience with employment counts from administrative records. As alternatives to the current method of bias adjustment, several new models are developed. These are time series models, structured in state-space form and estimated without the Kalman filter. Models are developed with and without explanatory variables. Comparisons are made in terms of how well the models fit the data from which they are modeled and how well they forecast additional observations. The scope of the analysis is the same as the CES, a cross-section of industries composing the nonfarm wage and salary population.

## Biographical Information

## 1993 Candidates for Office on the Board of Directors
## Washington Statistical Society

(Please mark your selections on the enclosed ballot and return to the address on the reverse side by **Friday, May 21, 1993**)

### President-Elect (President, 1994):

**Susan Ahmed** is Chief Mathematical Statistician, National Center for Education Statistics. Prior to coming to NCES in 1989, she was Associate Professor and Associate Director of the Division of Biostatistics at Georgetown University. She received her Ph.D. in biostatistics from the University of North Carolina at Chapel Hill. Since fall, 1992, she has served as WSS representative-at-large; in that capacity she has coordinated the work of the Shiskin Award Committee. From 1990 to 1992, Ahmed served as Methodology Chair for WSS. She has been an active member in ASA and is currently chair of the ASA Directory Committee. She has published in a number of medical journals. Her statistical interests include: statistical methodology, analysis of data from complex surveys, multiple comparison procedures, and analysis of multi-level data.

**Cynthia Z. F. Clark** is Director, Survey Management Division, National Agricultural Statistics Service. She has worked in the Statistical Research and Agriculture Divisions of the Census Bureau and in the Statistical Policy Office at the Office of Management and Budget. Clark has been an adjunct professor at American University and also taught at Drake University and the University of Denver. She holds a Ph.D. in statistics from Iowa State. Clark is a member of the Federal Committee on Statistical Methodology. In 1989-92 she was co-chair of the WSS Agricultural and Natural Resources Section; in 1985-90, she chaired of the ASA Committee on Privacy and Confidentiality, initiating the development of the brochure *Surveys and Privacy* and served as President of the Caucus for Women in Statistics during 1989, the ASA's 150th year. She was also National Secretary-Treasury of Mu Signa Rho in 1985-88. Her professional interests include survey and census research, federal statistics, statistical education, confidentiality and privacy issues, and time series.

### Methodology Chair-Elect (Chair, 1994):

**Michael P. Cohen** is a Mathematical Statistician in the Statistical Standards and Methodology Division, National Center for Education Statistics. He has a Ph.D. in mathematics (mathematical statistics program) from the University of California, Los Angeles. Cohen is a former WSS representative-at-large and serves on the membership committee. His major areas of experience are estimation and design for sample surveys, including variances, imputation, and small area estimation.

## Biographical Information (cont'd)

## 1992 Candidates for WSS Board (cont'd)

### Methodology Chair-Elect (Chair, 1994) (cont'd):

**Stuart Scott** is a Mathematical Statistician in the Office of Survey Methods Research, Bureau of Labor Statistics. He has a Ph.D. in statistics from Catholic University of America. Scott is an Associate Editor of the *Journal of Official Statistics*. He has participated in WSS' Quantative Literacy effort by serving as a WSS Science Fair judge. His areas of interest include seasonal adjustment, time series modeling, and measurement errors in surveys.

### Representatives-at-Large, 1993-4:

**Mary Batcher** is Chief, Statistical Support Team, Statistics of Income Division, Internal Revenue Service, where she leads a group that provides statistical expertise in support of a variety of operational projects. She has a Ph.D. in statistics from the University of Maryland. Batcher served on the Local Arrangements Committee for the 1989 Joint Statistical Meetings and was a member of the ASA Survey Research Methods Section's Committee on Tutorials from 1990 to 1992, chairing the committee in 1991. She has been a member of the WSS Short Course Committee for the last two years. Batcher also brings several years of experience working with PTA at the county level. Her statistical interests include multiple comparisons, multi-dimensional scaling, and resampling methods.

**A. Richard Bolstein** is Associate Professor in the Department of Applied Statistics, George Mason University. He received a Ph.D. in mathematics from Purdue University in 1967 and taught in the mathematics department at the University of North Carolina at Chapel Hill, prior to arriving at GMU in 1973. Bolstein has held several offices in the Washington Operations Research and Management Science Council from 1981-87, including President in 1986-87. He has been an Associate Editor of the *Journal of the American Statistical Association* since 1990. He has published numerous articles in mathematics, operations research, and survey sampling, in diverse journals such as *Public Opinion Quarterly, The Statistician*, and *Journal of Mathematical Analysis* and *Applications*. Bolstein's current research interests are in survey sampling, and he has been an active consultant in this area for the past 10 years. In 1991, he served on the Expert Panel to evaluate nonresponse in the 1987-88 National Food Consumption Survey and is currently involved with the design and analysis of the National Marine Recreational Fishing Statistical Survey.

**Howard Hogan** is Assistant Division Chief for Research and Methodology in the Business Division at the Census Bureau. Previously, he was Chief of the Undercount Research staff, in charge of the research on population undercount and census adjustment. He also teaches exploratory data analysis and demography at the USDA Graduate School. Hogan has an MPA, an MA and a Ph.D. from Princeton.

**Blaza Toman** is Assistant Professor of Statistics in the Statistics/ Computer and Information Systems Department at the George Washington University. She has a Ph.D. in statistics from Ohio State University. Her areas of interest are experimental design and Bayesian statistics.

## Biographical Information (cont'd)

**Secretary, 1993-4:**

**Ruth Ann Killion** is Chief, Statistical Research Division at the Census Bureau. Most of her professional career has been at the Bureau, though she recently spent four years as Executive Director for Research, Planning and Evaluation at the Evangelical Lutheran Church in America. Killion has served as Secretary of WSS since 1991. Statistical interests include nonsampling error, methodological issues in survey design, and sampling theory. She is also extremely interested in Quantitative Literacy issues; her major project this year is teaching a third grade class how to design, conduct, edit and analyze a survey of its peers -- and prepare a fifteen minute closed-circuit television program detailing the results. Killion holds a master's degree in statistics from Florida State University.

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## Announcements (cont'd)

### Up-coming Events (cont'd)

● May 5-7, 1993, the Bureau of the Census will sponsor a Research Conference on Under-counted Ethnic Populations. For more information, contact Maxine Anderson-Brown, Office of the Director, Bureau of the Census, Washington, DC 20233; phone: (301) 763-1150.

● May 25-26, 1993, the Joint University of Maryland-University of Michigan Program in Survey Methodology will sponsor a short course on Measurement Errors in Surveys, by Paul Biemer, Research Triangle Institute. For more information, contact the Joint Program at 1-800-937-9320; Fax: (313) 764-8263; e-mail: JPSM@UM.CC. UMICH.EDU.

### New Electronic Journal on Statistics Education

The *Journal of Statistics Education* is a new electronic journal on post-secondary statistics education. It will publish high-quality articles on a variety of topics related to the teaching of statistics, including results of controlled experiments, descriptions of case studies, impacts of new technologies and methods, and reviews of software, books and teaching materials. All articles will be reviewed by three referees.

The *JSE* is now seeking manuscripts for consideration. For information on guidelines for submission, contact E. Jacquelin Dietz, Department of Statistics, Box 8203, North Carolina State University, Raleigh, NC 27695-8203.

### *Survey Methodology* Seeks Manuscripts

*Survey Methodology* seeks manuscripts on statistical development and applications in surveys for up-coming issues. The Journal publishes articles dealing with various aspects of statistical development relevant to a statistical agency. In addition to general articles, *SM* often focuses on special sections dealing with new techniques or experiences in selected topics. The journal, published by Statistics Canada, appears bi-annually, with refereed articles appearing in both

## Announcements (cont'd)

## Obituary

### *Survey Methodology* (cont'd)

English and French. For information on submissions, contact M.P. Singh, Editor, *Survey Methodology*, Methodology Branch, Statistics Canada, Ottawa, Ontario, Canada K1A OT6.

*Register early for the WSS Annual Dinner! See enclosed blue flyer for full details.*

### Call for Papers on TQM

The American Statistical Association is now accepting contributed papers for the 8th annual ASA Winter Conference in Atlanta, January 7-9, 1994. The theme of the meeting will be Total Quality Management and the conference is being sponsored by the ASA Section on Quality and Productivity. Papers will address solutions, research, and statistical issues concerning TQM, viewed in the broadest sense. Contributed papers on research of students and faculty are especially encouraged. Abstracts are due August 15, 1993 (in formal ASA format). For more information, contact Robert Hogg, 1994 Winter Conference Program Chair, Department of Statistics and Actuarial Science, University of Iowa, Iowa City, IA 52242; phone: (319) 335-0712.

### Shiskin Awardee Died

Stephen P. Taylor, 69, a retired economist at the Federal Reserve Board, died April 9, as a result of injuries from a bicycling accident. Taylor was responsible for developing and perfecting the U.S. Flow of Funds Accounts and using them to interpret the behavior of financial markets. (The Flow of Funds tracks savings and expenditures in different sectors of the U.S. economy, to produce estimates of the total wealth of the country.) Taylor received the Washington Statistical Society's Julius Shiskin Award in 1991, in recognition of his innovative work and important contributions to the development of economic statistics.

Stephen Taylor is credited with integrating the country's economic statistics into a single system and computerizing them, for use by policy analysts. He also helped develop the capital finance account, used by the United Nations System of National Accounts in analyzing national economies, and he devised a widely used measure of private holdings of credit market instruments.

Taylor was born in White Plains, NY. He graduated from Cornell University, served in the Marine Corps in World War II, and received a master's degree in economics from Columbia University, after the war. In 1951, Taylor moved

DON'T FORGET TO VOTE!

## Obituary (cont'd)

**Stephen P. Taylor**

to Washington, DC, where he joined the Commerce Department. He went to work as a researcher in the Flow of Funds Section of the Federal Reserve Board in 1953, became Chief of the Section in 1961 and was named Assistant Director of the Division of Research and Statistics in 1971. From 1967 to 1984, Taylor also was a member of the Group of Financial Statisticians of the Organization for Economic Cooperation and Development. He continued to provide leadership at the Federal Reserve Board until his retirement in 1985.

Since his retirement, Stephen Taylor has served as a consultant to the International Monetary Fund and the World Bank. In 1992, he took part in a World Bank mission to Kirghizia, producing the first economic report on that country.

Taylor is survived by his second wife, Phyllis Lockhart Taylor, three daughters from his first marriage, two stepchildren, a sister, and 10 grandchildren. His first wife, Natalie Taylor, died in 1989.

(**Excerpted from** *The Washington Post*)

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

The June *WSS News* will be the last newsletter until September. Items for publication should be submitted no later than **Tuesday, April 27, 1993**. Fax items to:

Bettye Jamerson or Wendy Alvey

Fax: (202) 874-0922

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|---|---|
| Ruth Ann Killion (301) 763-3807 | Ginny deWolf (202) 606-7374 |

## WSS Program Chairs

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John Herbert     (202) 586-4360

**Economics**
Linda Atkinson   (202) 219-0505
Art Kennickell   (202) 452-2247

**Methodology**
Phillip Kott     (703) 235-5211
Tapan Nayak      (202) 994-6355

**Physical Sciences and Engineering**
Refik Soyer      (202) 994-6445
Tom Mazzuchi     (202) 994-7528

**Quality Assurance**
Ken Riccini      (301) 763-5734
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**Social & Demographic Statistics**
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**Statistical Computing**
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Franklin Winters (301) 763-8571

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Barry Graubard   (301) 496-8547
Dean Follmann    (301) 496-5905

**Data Collection Methods**
Jared Jobe       (301) 436-7111
Clyde Tucker     (202) 606-7371

**Employment**
Bill Arends (202) 720-6812

**WSS NEWS Editors**
Wendy Alvey      (202) 874-0455
Bettye Jamerson  (202) 874-0453

**Membership**
Michael P. Cohen (202) 219-1917
Antoinette Martin (202) 254-5409
Renee Miller     (202) 254-5507

**Videotapes**
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**Quantitative Literacy**
Ron Fecso        (202) 334-2295

**Local Arrangements**
Carolyn Shettle  (202) 634-4664

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P.O. Box 752
Suitland, MD 20752