MARCH 1991

WASHINGTON STATISTICAL SOCIETY

NEWSLETTER

March 8	Friday	Gross Job Creation, Gross Job Destruction and Employment Reallocation
March 20	Wednesday	The Item-Count Technique as a Method of Indirect Questioning: A Review of its Development and a Case Study Application
March 27	Wednesday	Design Considerations for Environmental Surveys
April 4	Thursday	Graphical Data Analysis: A Toolkit
April 9	Tuesday	Chemical Use in Agriculture

ANNOUNCEMENTS

Advanced Topics in Survey Theory
USDA Graduate School (ESTAT 525)

Ron Fecso and Phil Kott Coordinators*

The purpose of this class is to acquaint the student with recent theoretical advances in the survey sampling literature. The student is assumed to have knowledge of sampling theory at the level of Cochran's Sampling Techniques and some familiarity with linear models. The class consists of a series of independent but interconnected seminars conducted by guest speakers deeply interested in the topics under discussion. A tentative schedule of topics is displayed below with the speakers' name in parentheses.

April 18 - Introduction: Design-based Sampling Theory (Ron Fecso)
April 25 - Estimating Sampling Errors (Keith Rust)
May 2 - Model-based Sampling Theory (Phil Kott)
May 9 - Adjustments for Nonresponse (Brenda Cox)
May 16 - Post-stratification Techniques including Raking Ratio Estimation (Fritz Scheuren)
May 23 - Categorical Analysis with Complex Survey Data (Bob Fay)
May 30 - Regression Analysis with Complex Survey Data (Phil Kott)
June 6 - Composite Estimation (Charles Perry) Introduction to Time Series Methods (Bill Bell)
June 13 - Integrating Time Series Methods into Survey Sampling Theory (Bill Bell)
June 20 - Capture - Recapture Methods (Chuck Cowan)

All classes will be held on Thursdays beginning April 18 to June 20, 1991 from 6 to 8 p.m. The cost is $269 per student. To register, please call 202-475-4280. For more information call 202-447-5885.

*Ron Fecso is the Senior Research Statistician, Research and Applications Division, National Agricultural Statistics Service, USDA.

*Phil Kott is Special Assistant for Economic Survey Methods, U.S. Bureau of the Census.

WASHINGTON STATISTICAL SOCIETY PROGRAM CHAIRS

Agriculture & Natural Resources
Cynthia Clark 763-8558
John Herbert 532-4544

Social & Demographic Statistics
Harvey Schwartz 443-6990
Tom Dietz 323-2916

Short Courses
Glenn White 763-7524
Donald Gantz 764-6565
Brad Pafford 447-3623
Sid Schwartz 268-3490

Economics
John Ruser 523-1347
Neil Ericsson 452-3709

Methodology
Sam Slowinski 452-2622
Sue Ahmed 357-6781

Public Health & Biostatistics
Ed Lakatos 496-5905
Gordon Lan 881-9260

Physical Sciences & Engineering
Nozer Singpurwalla 994-7515
Julia Abrahams 696-4320

Statistical Computing
Nancy Flournoy 885-3127
Sylvia Leaver 272-2350

Quality Assurance
Stanley Freedman 586-2038
John Galvin 272-5066

Newsletter Editor
Stephen H. Cohen 523-7551

Employment
Bill Arends 447-6812

PROGRAM ABSTRACTS

TOPIC: **GROSS JOB CREATION, GROSS JOB DESTRUCTION AND EMPLOYMENT REALLOCATION**

SPEAKER: John Haltiwanger, Department of Economics, University of Maryland

DATE & TIME: Friday, March 8, 1991; 10:00 to 11:30 a.m. (Please note special time.)

LOCATION: Room 2437, GAO Building, 441 G Street, N.W., Washington, D.C.
(Sign in at guard desk and state purpose and room number of visit.)

SPONSORS: WSS Economics Section and Office of Economic Research, Bureau of Labor Statistics

ABSTRACT: This paper measures the heterogeneity of establishment-level employment changes in the U.S. manufacturing sector over the 1972 to 1986 period. Our empirical work exploits a rich data set with approximately 860,000 annual observations on 160,000 manufacturing establishments to calculate rates of gross job creation, gross job destruction, and their sum, gross job reallocation. The central empirical findings are as follows: (1) Based on March-to-March establishment-level employment changes, manufacturing rates of gross job creation and destruction averaged 9.2% and 11.3% per year, respectively. Further, most of the annual job creation and destruction represents persistent establishment-level employment changes. (2) Job reallocation accounts for 35-56% of total worker reallocation. (3) Job reallocation rates vary systematically by industry, region, plant size, plant age, and plant ownership structure. Our measurement efforts permit quantifying the contribution of selection effect due to passive learning about initial conditions. We estimate that selection effects account for approximately 13% of total job reallocation. (4) Time variation in gross job reallocation is countercyclic — gross job reallocation rates covary negatively with own-sector and manufacturing net employment growth rates. (5) Virtually all of the time variation in gross job reallocation is accounted for by the idiosyncratic component of establishment growth rates, and the part of gross job reallocation attributable to idiosyncratic effects fluctuates countercyclically.

TOPIC: **THE ITEM-COUNT TECHNIQUE AS A METHOD OF INDIRECT QUESTIONING: A REVIEW OF ITS DEVELOPMENT AND A CASE STUDY APPLICATION**

SPEAKERS: Judith Droitcour, Senior Evaluator, Program Evaluation and Methodology Division, GAO
Trena M. Ezzati, Mathematical Statistician, Survey Design Staff, Office of Research and Methodology, NCHS

CHAIR: James T. Massey, Chief, Survey Design Staff, Office of Research and Methodology, NCHS

DISCUSSANT: Monroe G. Sirken, Associate Director for Research and Methodology, NCHS

DATE & TIME: Wednesday, March 20, 1991; 10:00 to 11:30 a.m.

LOCATION: National Center for Health Statistics, Auditorium, Presidential Building, 11th Floor, 6525 Belcrest Road, Hyattsville, Maryland 20782

SPONSORS: Office of Research and Methodology, NCHS and the Washington Statistical Society

ABSTRACT: The item-count technique is an alternative to the more well-known randomized response method. This relatively unknown technique builds upon previously reported indirect estimation methods, including randomized response, aggregated response, and the nominative technique. While initial field tests were conducted in the 1980's, the most

PROGRAM ABSTRACTS (continued)

recent application and test of the item-count technique has been in the Pretest for the National Household Seroprevalence Survey. Various problems were encountered in implementing the technique; however, item-count was used to indirectly estimate two major HIV risk behaviors (intravenous drug use and anal intercourse). Direct questions about these behaviors were also asked, allowing comparisons of item-count and direct-question estimates.

TOPIC: **DESIGN CONSIDERATIONS FOR ENVIRONMENTAL SURVEYS**

SPEAKER: Brenda G. Cox, Research Triangle Institute and USDA/NASS

CHAIR: Douglas Hale, Energy Information Administration

DISCUSSANT: David Marker, Westat

DATE & TIME: Wednesday, March 27, 1991; 12:30 to 2:00 p.m.

LOCATION: Room 5066, Department of Agriculture, South Building, 14th and Independence, S.W., Washington, D.C.

SPONSORS: WSS Methodology and Agriculture and Natural Resources Sections

ABSTRACT: Concern about the potential for indoor air pollution has led to recent surveys of radon and NO_2 concentrations in homes and personal exposure studies of volatile organics, carbon monoxide, and pesticides, to name a few. A continuing concern about man-made pollution of the environment has led to periodic surveys to evaluate the quality of the Nation's outdoor air, groundwater supplies, fresh water streams, estuaries, and so on. The statistical problems in designing sample surveys that measure the physical environment are diverse and more complicated than those encountered in traditional surveys of human attitudes and attributes. This paper addresses issues encountered when designing environmental surveys. General statistical concepts related to target population definition, frame creation, sample selection, and data collection, processing and analysis are presented for area frame surveys and telephone designs. The implications of different measurement approaches are discussed with an emphasis on response problems and measurement error.

TOPIC: **GRAPHICAL DATA ANALYSIS: A TOOLKIT**

SPEAKER: Catherine Hurley, George Washington University

CHAIR: Nancy Flournoy, The American University

DISCUSSANT: Dan Carr, George Mason University

DATE & TIME: Thursday, April 4, 1991; 12:30 to 2:00 p.m.

LOCATION: Room 2437, GAO Building, 441 G Street, N.W., Washington, D.C.
(Near the Judiciary Square Metro Station)

SPONSOR: Statistical Computing

ABSTRACT: A modern system for statistical graphics should provide the analyst with highly-interactive dynamic plots and a toolkit for constructing new or specialized kinds of plots. This talk describes such a system. Issues, including software design, interfaces (user-plot and plot-data), and the role of constraints will be discussed.

PROGRAM ABSTRACTS (continued)

TOPIC: **CHEMICAL USE IN AGRICULTURE**

SPEAKERS: Michael A. Steinner, USDA/NASS
Carol C. House, USDA/NASS

CHAIR: Sam Rives, USDA/NASS

DISCUSSANT: David Harrington, USDA/ERS

DATE & TIME: Tuesday, April 9, 1991; 12:30 to 2:00 p.m.

LOCATION: Conference Room 4302, South Building, Department of Agriculture, 14th and Independence, S.W., Washington, D.C.

SPONSOR: WSS Agriculture and Natural Resources Section

ABSTRACT: ***A Quality Assessment of Agricultural Chemical Use Data, Michael A. Steiner.*** This paper reviews the current status of data available on chemical usage in the U.S. agricultural sector. Considering that farm land accounts for over forty percent of the total land area in the U.S., chemical usage for agricultural purposes can potentially have very significant effects on the environment. Deficiencies in the current system of data collection and dissemination of agricultural data are presented.

Measuring Chemical Use in Agriculture - Design Issues, Carol C. House. There currently exists a lack of centralized, statistically-based data on chemical use in the U.S. agriculture sector. The National Agricultural Statistics Service is involved in a new initiative to develop the foundation of such a data base through surveys of agricultural producers. This paper discusses the varied and sometimes conflicting needs of data users, and some alternative survey designs developed to meet those needs.

ANNOUNCEMENTS (continued)

Tentative Schedule of SIGSTAT Meetings

SIGSTAT is the Special Interest Group in Statistics in the Capital PC User Group. The tentative schedule of events through April is as follows:

3/13/91	Forecast Master - time series forecasting.
4/10/91	Shazam - a very complete econometric estimation package.
5/15/91	??? wildcard - suggestions to Charlie Hallahan

All meetings are scheduled for Wednesdays from 12:30 to 1:30 p.m. in Room B-14, 1301 New York Ave., N.W. The building is located midway between the Metro Center and McPherson Square Metro stops. If this is your first SIGSTAT meeting, call Charlie Hallahan, 786-1507, and leave your name in order to gain entry into the building.

Census Bureau's 1991 Annual Research Conference Announced

The Census Bureau's 1991 Annual Research Conference will be held March 17-20, 1991 at the Holiday Inn Crowne Plaza in Arlington, Virginia, only 1/2 mile from National Airport and three blocks from Metro. ARC 1991 will comprise a mix of topics such as editing, estimation in the presence of outliers, statistical methods for use with missing data, the effect of sample attrition on estimation and analyzing data in the presence of missing data and nonsampling errors. For further information contact Ms. Maxine Anderson-Brown, ARC Conference Coordinator, Office of the Director, Bureau of the Census, Washington, D.C. 20233, 301/763-1150.

EMPLOYMENT COLUMN

The Washington Statistical Society Newsletter provides a service of notification of employment opportunities and descriptions of those seeking employment here in Washington. 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: Bill Arends, USDA-NASS, Room 4133 South Building, Washington, D.C. 20250-2000, Phone 447-6812.

JOB OPENINGS

BIOSTATISTICIAN

Statistical consulting firm has an opening for a biostatistician with strong data orientation and communication skills. Projects involve controlled clinical trials and epidemiologic studies in ophthalmology, arthritis, AIDS, and renal disorders. Important considerations include training in biostatistics at the Master's level, and previous experience in the use of microcomputers for data management and statistical analysis. Salary commensurate with experience. Excellent benefits and stable, pleasant work environment. Please send resume to: Mrs. Fritz; c/o the EMMES Corporation; 11325 Seven Locks Road, Suite 214; Potomac, Maryland 20854.

STATISTICIAN

Full-time government position at a GS-9-14 level (prefer Masters level). The National Institute of Mental Health, 9000 Rockville Pike, Building 10, Room 4N317, Bethesda, MD 20892-0001. The position is in the laboratory of cerebral metabolish section on clinical brain imaging. Please contact Laura or Glinda at (301) 496-4707.

STATISTICIAN
(GS/1529/7-12 or GM/1529/13)

The Statistics and Data Systems Division of the Food Safety and Inspection Service, U.S. Department of Agriculture is recruiting for a mathematical statistician for its Statistical Analysis Branch. The branch provides statistical support for USDA's Meat and Poultry Inspection Program. The branch assists in sample surveys, data analyses, quality control, laboratory methods development, and statistical reporting. Candidates must have demonstrated education or work experience in the areas of statistics, data analysis, and statistical computing. Send SF-171 and a copy of your latest performance appraisal to Teresa Adams; USDA, FSIS; Room 3161-Sc. Bldg.; 14th & Independence Ave., S.W.; Washington, D.C. 20250; or call (202) 447-6617 for additional information. An equal opportunity employer, U.S. citizenship required.

JOB OPENINGS (continued)

RESEARCH ASSISTANT - Part Time

The Prince George's County Public Schools, Office of Television Resources, is seeking a doctoral-level student in psychology, communications, health education or a related field to assist in an evaluation of a project funded through the Office of Substance Abuse Prevention (OSAP), National Institutes of Health. The three-year project involves the development of seven-part television series on drug education/awareness to be broadcast directly into classrooms and via cable television. The position is part-time from February 1991 to June 1992. Salary is negotiable. Please contact Mr. Scott Schiller; Supervisor, Office of Television Resources; Prince George's County Public Schools; Bennie F. Johns Center; 8437 Landover Road; Landover, MD 20785.

U.S. Department of Agriculture
National Agricultural Statistics Service

The National Agricultural Statistics Service, the primary collector of agricultural data in the United States, has openings for mathematical statisticians and related disciplines at various entry levels. Salaries are commensurate with qualifications and experience. Persons with a B.S., M.S., or Ph.D. in a relevant field, or equivalent experience, are encouraged to apply. Positions involve both applied and methodological research work in such areas as:

- Sample design, estimation and variance estimation
- Control and evaluation of nonsampling error
- Statistical methods for analyzing survey data
- Analysis of multivariate earth resource observation satellite data
- Measurement error models
- Statistical graphics and statistical computing
- Total survey error and cost models
- Crop yield forecasting models
- New computer-assisted data collection and processing technologies

These positions are central to the primary mission of NASS to measure agricultural output and production of the food and fiber sector of the U.S. economy. Persons interested in these positions should send letters of interest and resumes to Dr. Cynthia Clark, Room 4801 South Building, National Agricultural Statistics Service, USDA, Washington, D.C. 20250-2000. An Equal Opportunity Employer, U.S. citizenship required.

JOB OPENINGS (continued)

STATISTICIAN: GS 11/12

Research Associate with skills in research design, statistical analysis, large-scale database management, and data processing using SAS and other mainframe microcomputer software packages is wanted to participate in planning and conducting mental health studies of the causes and effects of traumatic events. Experience with interpretation of survey and experimental research findings, and with presentation of statistical results in tabular and graphic format is essential. Also desirable is experience in conducting literature surveys and familiarity with recent hardware advances. Salary range $31,116 to $48,481 depending on experience. Send resume to: Susan D. Solomon, Ph.D., Violence and Traumatic Stress Research Branch, National Institute of Mental Health, 5600 Fishers Lane, Room 18-105, Rockville, MD 20857. For more information, contact 301/443-3728.

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