



WASHINGTON
STATISTICAL
SOCIETY

NOVEMBER 1988

NEWSLETTER

Nov. 8	Tuesday	Towards X-12-ARIMA
Nov. 9	Wednesday	Quality Assurance Program-PATC
Nov. 16	Wednesday	Quality Assurance in EIA Surveys
Nov. 16	Wednesday	An Historical Perspective of the Kalman Filter and Some Recent Results in Non-Gaussian Modeling
Nov. 18	Friday	Modern Innovations for Policy Analysis and Their Impact on Statistics ASA-150
Dec. 1	Thursday	Evaluation of a Multiple Frame Multivariate Sample Design
Dec. 20	Tuesday	An Application of Economics to the Problem of Respondent Burden in Economic Surveys

ANNOUNCEMENTS

Bonney Wins Snedecor Award

George E. Bonney, Division of Biostatistics, Howard University Cancer Center, received the 10th annual George W. Snedecor Memorial Award for the best published work in Biometry for 1987. This award is jointly sponsored by the American Statistical Association (ASA) and the Eastern and Western North American Regions of the Biometric Society. The Award together with an honorarium was presented at the ASA Presidential Address session at the 1988 Joint Statistical Meetings.

Bonney received the Award based on his paper "Logistic Regression for Dependent Binary Observations," published in *Biometrics* (vol. 43, pp. 951-973) and his related paper "Regressive

Logistic Models for Familial Disease," *Biometrics* (vol. 42, 616-625, 1986). The Award cited Bonney for his reasoned exposition and illustrative examples that point the way towards extending the application of existing logistic regression methods and software to include the multivariate case of logically ordered dependent binary random variables. This proposal significantly enhances the potential utility and effectiveness of a readily accessible and widely used biostatistical method. The restrictive requirement for a logical ordering of the dependent variable may, as in the case of path analysis, demand the careful specification of causal pathways, thereby stimulating substantive model development.

WASHINGTON STATISTICAL SOCIETY PROGRAM CHAIRS

Agriculture & Natural Resources

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

Social & Demographic Statistics

Harvey Schwartz 535-0634
John Czajka 484-9220

Short Courses

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

Economics

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

Public Health & Biostatistics

Ed Lakatos 496-5905
Jai Choi 436-7047

Methodology

David Marker 251-4398
Myron Katzoff 436-7047

Employment

Evelyn R. Kay 337-8418

Physical Sciences & Engineering

Patricia Abel 883-6490
Refik Soyer 994-6794

Statistical Computing

Khalid Aboura 994-7534
Sylvia Leaver 272-2311

Quality Assurance

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

Newsletter Editor

Michael Cohen 454-6193

PROGRAM ABSTRACTS

TOPIC: TOWARDS X-12-ARIMA

SPEAKER: Brian Monsell, Statistical Research Division, Bureau of the Census

CHAIR: Myron Katzoff, NCHS

DISCUSSANT: Stuart Scott, BLS

DATE & TIME: Tuesday, November 8, 1988, 12:30 to 2:30 p.m.

LOCATION: Room 2437, Bureau of Labor Statistics, 441 G Street, N.W., Washington, D.C.
(Please call 523-1760 at least one day in advance to assure building entrance.)

ABSTRACT: In the 1970s Estella Dagum and her staff at Statistics Canada produced an important variant of the Census X-11 seasonal adjustment program known as X-11-ARIMA. Its principal advantages over X-11 are its more extensive diagnostics and its use of ARIMA time series models to extend the available series. We discuss some improvements to the X-11 and X-11-ARIMA methodologies which are being incorporated into a new seasonal adjustment program under development at the Census Bureau. These improvements include: (a) the capability to estimate models with regression terms and ARIMA errors by maximum likelihood; (b) exact maximum likelihood estimation of moving average parameters; (c) an iterative generalized least squares approach for computational efficiency in the estimation; (d) an automatic outlier identification routine for additive and level shift outliers; (e) a diagnostic technique (sliding spans analysis) to assess the stability of the seasonally adjusted level and period-to-period change estimates; and (f) improved input procedures to allow interactive as well as batch processing. The enhanced modeling capabilities make possible improved outlier identification/compensation procedures which often lead to better seasonal adjustments. We also give examples of how these new features can be used by giving examples taken from Census Bureau series.

TOPIC: QUALITY ASSURANCE PROGRAM--PATC

SPEAKER: Steve Cohen, Bureau of Labor Statistics

CHAIR: Harvey Schwartz, Applied Management Sciences, Inc.

DISCUSSANT: David Morganstein, Westat, Inc.

DATE & TIME: Wednesday, November 9, 1988, 12:30 to 1:30 p.m.

LOCATION: Room 2437, GAO Building, 441 G Street, N.W., Washington, D.C.
(Please call 523-1760 at least one day in advance to assure building entrance.)

SPONSOR: Social and Demographic and Quality Assurance Sections

ABSTRACT: The National Survey of Professional, Administrative, Technical, and Clerical Pay (PATC) is designed to produce estimates of monthly salaries of selected white collar occupations. In 1983, a revised quality assurance procedure was introduced into the PATC survey, Job Match Validation (JMV). JMV was developed to measure the reliability of initial decisions made by field representatives in classifying workers by survey job category. This process estimates the largest component of nonsampling error associated with the PATC survey.

PROGRAM ABSTRACTS (continued)

The JMV is designed to give field representatives quick feedback on errors in matching the survey job descriptions with company jobs. It also estimates job match error rates for the field representatives studied. Errors in job match decisions, however, are found to be small. The reasons and sources of each error are coded and analyzed for corrective actions, such as placing special emphasis on problems in procedure manuals, training sessions, etc.

TOPIC: **QUALITY ASSURANCE IN EIA SURVEYS**

SPEAKER: Reneé Miller, Energy Information Administration

CHAIR: Stan Freedman, Energy Information Administration

DISCUSSANT: Sioux Groves, Bureau of Labor Statistics

DATE & TIME: Wednesday, November 16, 1988, 12:30 to 2:00 p.m.

LOCATION: Room 2736, GAO Building, 441 G Street, N.W., Washington, D.C.
(Please call 523-1760 at least one day in advance to assure building entrance.)

SPONSOR: Quality Assurance Section

ABSTRACT: Two types of quality assurance activities at the Energy Information Administration (EIA) are discussed. One type involves looking for symptoms of problems in the published data. This examination is conducted by (1) comparing published EIA data with other similar sources both at aggregate levels and at the respondent level, (2) identifying outliers in the published data series and then following up to determine whether they are actually due to errors, and (3) comparing preliminary and revised estimates. Examples of each are presented. The other type of quality assurance activity involves examination of the various aspects of survey processing activities. An example from a recently conducted study of statistical edits is presented. This example shows how examining data on flagged items and actual errors may be used to reduce the number of edits.

TOPIC: **AN HISTORICAL PERSPECTIVE ON THE KALMAN FILTER AND SOME RECENT RESULTS IN NON-GAUSSIAN MODELING**

SPEAKER: James Spall, The John Hopkins University, Applied Physics Laboratory

CHAIR: Refik Soyer, George Washington University

DISCUSSANT: Nancy Kirkendall, Energy Information Administration

DATE & TIME: Wednesday, November 16, 1988, 12:00 to 1:30 p.m. (Note special time.)

LOCATION: Staughton Hall 301, 707 22nd Street, N.W., Washington, D.C.

SPONSOR: Physical and Engineering Sciences

ABSTRACT: This talk will begin with a review of some of the principles and historical background behind the state-space model and Kalman filter. This will include a discussion of how the Weiner-Kolmogorov approach of the 1940s evolved into the Kalman filter of the 1960s and how the Apollo space program subsequently contributed to the popularity of the state-space/Kalman filter approach. This review will lead into a discussion of several open problems in the area of dynamic modeling.

PROGRAM ABSTRACTS (continued)

The second part of the talk will be devoted to one of the major open problems -- making inference when the distributions of the random terms in the state-space model are not normally distributed (and, in fact, may have unknown distributions). It will be shown how the Kalman filter can be used to obtain confidence intervals for the true value of the state in such a "real-world" situation.

- TOPIC:** MODERN INNOVATIONS FOR POLICY ANALYSIS AND THEIR IMPACT ON STATISTICS **ASA-150**
- SPEAKERS:** Harold Watts, Department of Economics, Columbia University
Harold Beebout, Mathematica Policy Research, Inc.
Denton Vaughan, Social Security Administration
- CHAIR:** Joan Turek-Brezina, Department of Health and Human Services
- DATE & TIME:** Friday, November 18, 1988, 1:30 to 3:30 p.m. (Note special time.)
- LOCATION:** GAO Building, 441 G Street, N.W., Room 2736
(Please call 523-1760 no later than November 16 to assure building entrance.)
- ABSTRACT:** 1988 marks the 20th anniversary of the first large-scale social experiment in the U.S. - the New Jersey Income Maintenance Experiment - and of the first microsimulation model for analysis of social welfare programs. 1988 also marks the 5th anniversary of the first wave of interviews for the Survey of Income and Program Participation. This seminar will review these important interrelated innovations for social welfare policy analysis that have benefited from and influenced statistical methodology.

Harold Watts will speak on "Large-Scale Social Welfare Experimentation in the U.S.: The Impact on Policy Analysis, Statistical Methodology, and Data Development." Focusing on the income maintenance experiments of the 1970s, he will address: the use of experimental methodology to answer questions about social policy; the experiments' impact on the policy debate; and how the experiments benefited from new developments in methodology and computer technology and in turn contributed to the development of other policy analysis tools and data sources.

Harold Beebout will speak on "Microsimulation Modeling of Social Welfare Programs: The Impact on Policy Analysis, Statistical Methodology, and Data Development." He will cover models, such as MATH and TRIM, that are used to cost out welfare reform proposals and answer "what if" questions based on manipulation of existing data sources. He will address: the impact of these models on decision-making; the methodological strategies they use to handle problems of data gaps and inadequacies; and how they benefited from and fostered the development of other policy analysis tools and data sources.

Denton Vaughan will speak on "The Survey of Income and Program Participation (SIPP): A Major New Resource for Policy Analysis." He will address: SIPP's origins arising from the need for an improved data base to use for modeling and others forms of policy and analysis; its evolution from the Income Survey Development Program (ISDP); and its current status and promise for policy applications.

PROGRAM ABSTRACTS (continued)

TOPIC: EVALUATION OF A MULTIPLE FRAME MULTIVARIATE SAMPLE DESIGN

SPEAKER: Robert Battaglia, State Statistician, New Jersey

CHAIR: Barry Ford, Sample Design Section, National Agricultural Statistics Service

DATE & TIME: Thursday, December 1, 1988, 12:30 p.m.

LOCATION: Room 3109-S, South Agriculture Building, 12th and Independence, S.W., Washington, D.C.

SPONSOR: Agricultural and Natural Resources

ABSTRACT: Multiple frame estimates from two agricultural surveys were evaluated by comparing sample allocations and sampling errors against a multivariate optimal allocation following the surveys. Optimal samples were computed for each state based on up to ten major agricultural commodities. Results were useful for sample allocations among states and strata within states, removal of ineffective strata, and determination of necessary sample sizes or other adjustments in the two frames in order to meet desired levels of precision.

TOPIC: AN APPLICATION OF ECONOMICS TO THE PROBLEM OF RESPONDENT BURDEN IN ECONOMIC SURVEYS

SPEAKER: Arnold Reznick, Statistical Research Division, Bureau of the Census

CHAIR: Francis Diebold

DATE & TIME: Tuesday, December 20, 1988, 2:30 to 4:30 p.m. (Note special time.)

LOCATION: Federal Reserve Board, Martin Building, 20th & C Streets, N.W., Room 3317 (Please call 452-2416 at least one day in advance.)

SPONSOR: Economics

ABSTRACT: Many respondents to government economic surveys--business establishments and firms--say that responding to these surveys puts a substantial burden on them, with little or no corresponding benefit. This paper views burden as an economic opportunity cost--actually a type of tax--imposed on the respondents, for the purpose of gaining information that has benefits for the society as a whole. The problem of setting the level of burden is treated as a problem of economic efficiency. This decision is difficult because it is virtually impossible to determine at reasonable cost what the benefits of the information are, and because benefits and costs of government data collection programs (including respondent burden) tend to be separated--not internalized. The problem of deciding how to allocate this burden among respondents is viewed (with some oversimplification) as a problem of equity, or fairness. For this purpose, burden is interpreted as a tax. Examples are given to show that the type(s) of tax(es) imposed depends on the survey design(s). The paper also shows, for stratified sampling, how sample allocation might be altered if respondent burden were explicitly taken into account. The paper concludes by applying the theory to the question of whether survey respondents have a "responsibility" to respond to surveys, and to the issue of voluntary versus mandatory reporting in economic surveys.

OTHER ANNOUNCEMENTS

Science Fairs 1989

Volunteers are now being solicited to represent the Washington Statistical Society as judges in local area science fairs next Spring. For the past several years, WSS has provided special awards at these fairs to students whose projects demonstrate excellence in statistical theory or application. Those who have participated in this activity have very much enjoyed the opportunity to interact with these students and to observe the widely diverse projects which are presented. The WSS sponsors awards at fairs in Northern Virginia, suburban Maryland, and the District of Columbia. The fairs are held on Saturday mornings in mid- to late March and early April. The only time required is one Saturday morning, plus one weekday lunchtime meeting to discuss judging strategy and to distribute the awards to be given out at each fair.

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

Short Course: Analysis of Binary Data

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

Washington Academy of Sciences News

The Washington Academy of Sciences (WAS) will be featuring career-related topics at the monthly meetings for the 1988-89 program year. On Thursday, November 17, WAS is holding a joint meeting with the MIT Club of Washington. The speaker will be Lt. Gen. James Abrahamson, Director of the Strategic Defense Initiative Organization. His topic will be "Career Needs for the Space Age." The evening includes a reception (cash bar) at 6:30 p.m., a buffet dinner at 7:15 p.m., and the talk at 8:00 p.m. The talk will be held at the Mary Graydon Center at American University. The cost is \$14 per person. Send checks and reservations to Deh-I Hsiung, 400 Tunlaw Road, N.W., #607, Washington, D.C. 20007, Phone 333-4696(H), 357-7835(W).

Summary of WSS Board Meeting

Much of the September 27 meeting of the Board of Directors was devoted to discussion of upcoming presentations. A wide variety of sessions will be presented in November and December. Plans are already underway for some sessions that will be presented in the Spring. The first three sessions for the program year were all successful. The Stochastic Methods in Neurophysiology attracted some individuals working in that field.

Nancy Kirkendall reported that our local arrangements committee preparing for the ASA Annual Meetings next August is now meeting monthly. That committee is working on five different assignments: publicity; restaurant guides; pamphlets on things to do in Washington; blurbs on Washington for Amstat News; and procedures and staffing of an information desk at the meetings.

The basic arrangements for the annual WSS holiday party were announced during the Board meeting.

OTHER ANNOUNCEMENTS (continued)

Washington Statistical Society Trivia Quiz

1. The Washington Statistical Society can trace its roots to:

(a) 1898; (b) 1926; (c) 1935.
2. How many people have served as President of both the Washington Statistical Society and the American Statistical Association?

(a) 3; (b) 5; (c) 7; (d) 9.
3. What percent of the members of all American Statistical Association chapters are members of the Washington Statistical Society?

(a) 6.2; (b) 10.8; (c) 13.5; (d) 17.6.
4. The Washington Statistical Society has had an Employment Column for 21 years. How many people have served as the Employment Committee Chairperson?

(a) 2; (b) 4; (c) 6; (d) 8.
5. Several people have served long periods of time on the Washington Statistical Society Board of Directors. Which person has been elected to WSS office the most number of times?

(a) Bennie Clemmer; (b) Charles Jones; (c) Al Mindlin.
6. The Washington Statistical Society has had a program awarding a year's membership in the American Statistical Association and WSS to an outstanding graduate student at local universities since 1961. Which university has selected the highest number of students during the life of the program?

(a) American University; (b) George Washington University; (c) Howard University; (d) University of Maryland.

Answers in next month's Newsletter.

Sesquicentennial Souvenirs

Several souvenir items commemorating the ASA-150 celebration were available at the New Orleans annual meetings and a few more are planned for 1989. The Biopharmaceutical Section had very impressive canvas portfolios and gym bags for a donation of \$10 each which are expected to be repeated next year. The Council of Chapters had a nice looking Shaeffer ball-point pen for \$3 and foam beverage can holders (Koozies). A supply of these two items has been procured for WSS and will be offered at the annual holiday party in December. A new WSS mug commemorating the ASA-150 celebration will also be available at that party.

Some souvenir items for next year are pending and may depend upon having enough preorders. An appropriately inscribed striped tie (in both men's and women's versions) is being pursued along with an inscribed clipboard which has a calculator built in. These items would probably need to sell for about \$17 each so you can see the reason for judging interest through presell activities.

A prototype of an extremely handsome lapel pin was presented to the ASA Board at New Orleans. Something of that nature may be included in the registration next year as a permanent memento.

Census Bureau's Fifth Annual Research Conference Announced

The Census Bureau's Fifth Annual Research Conference (ARC V) will be held March 19-22, 1989, at the National Clarion Hotel in Arlington, Virginia, only one-half mile from National Airport and three blocks from Metro. ARC V will comprise a mix of topics such as nonsampling errors, new techniques in questionnaire design, analysis of complex survey data, and geographic systems. 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.

OTHER ANNOUNCEMENTS (continued)

Conference in Memory of Eugene Lukacs - November 1988

The Mathematics Department at Catholic University is organizing a one-day conference on November 3, 1988 in honor of the late Professor Emeritus Eugene Lukacs. The conference will consist of lectures by the following invited speakers:

Samuel Kotz, University of Maryland
Joseph Gani, University of California-Santa Barbara
Abram Kagan, University of Maryland
Vijay Rohatgi, Bowling Green University, Ohio
Miklos Csorgo, Carleton University, Ottawa, Canada

For information please call K. Bhutani or G. Hensel at 202/635-5222.

JOS Call for Papers

The 1989 Special Issue on Environmental Statistics

Environmental statistics is a recent and growing branch of official statistics, stemming from the substantial changes in the environment due to pollution, acidification, etc. Describing and analyzing the state of the environment, with its complex biological systems, present new challenges for statistical methodology. In this special issue, we are interested in a broad range of methodology and applications, and in the policy issues of environmental statistics. The following are examples of suitable topic areas.

1. Sampling the environment, e.g., definition of population and frame, random and nonrandom samples.
2. Data collection and data sources, e.g., methods of measurement, remote sensing, etc.
3. Generalization from point measurements, e.g., Kriging, etc.
4. Analysis of environmental data, e.g., analysis of relations between variables, other multivariate methods, time series analysis, and nonrandom data.
5. Choice of variables, indicators, indices, e.g., comparability and classification. Planning for future data needs.
6. Harmonizing data of different character and quality, e.g., data obtained by different methods over time, hard and soft data, and case studies.
7. Presentation: choice of topics, forms (maps, tables), and regions (administrative, drainage areas), etc.
8. Use of official environmental statistics, e.g., instrumental use by government and local authorities, in research, or general information.
9. Evaluation of the environment in monetary terms, e.g., benefit-cost analysis.
10. Statistics, law, and environment.
11. International environmental issues, cooperation, etc.

Manuscripts for the special issue should be sent in five copies to the Chief Editor, Lars Lyberg, no later than November 30, 1988.

EMPLOYMENT COLUMN

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

EMPLOYMENT COLUMN (continued)

JOB OPENINGS**HEALTH CARE RESEARCH CONSULTING**

The Biometric Research Institute is a Rosslyn, Virginia-based biostatistical and regulatory consulting firm. Our international clientele are the developers of new drugs, medical devices, biologics, and diagnostics. We help them prepare for U.S. registration of their products through preparation of FDA submissions and clinical trials management.

BRI is seeking individuals with relevant masters degrees to fill an appropriate position along the Project Director career path. Coursework or experience in clinical trials management or biostatistics are required, and a background in FDA regulations would be extremely helpful.

Please send C.V. to Peggy Kearney, Director, Operations Support Staff, BRI, 1401 Wilson Blvd., Suite 400, Arlington, Virginia 22209.

**STATISTICIANS/
BIostatisticians**

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

The Economic Analysis Group of the Antitrust Division (U.S. Dept. of Justice) has an opening for a Statistician. We are interested in considering candidates having or anticipating a Ph.D. in statistics. Responsibilities would include working with attorneys and economists in developing statistical evidence, statistical testimony, and damage estimates for trials and administrative proceedings. The position requires an ability to analyze large amounts of data and to explain clearly complex statistical problems to non-specialist audiences. Expertise in sampling techniques is also required. Grade and salary will be commensurate with qualifications. All applicants must be U.S. citizens. Interested persons should send a curriculum vitae and should arrange for three letters of recommendation and transcripts to be sent. An equal opportunity/affirmative action employer. Contact: Dr. Andrew S. Joskow, Director of Analytical Resources, Economic Analysis Group, Anti-Trust Division, Room 11-453, 555 4th St., N.W., Washington, D.C. 20001.

JOB OPENINGS (continued)

BIostatistician. Masters in biostatistics or statistics for work in clinical trials and epidemiologic studies. Assist in study design procedures, data management, and analysis. One or more years of experience in biomedical research and good communications skills essential. IBM computer experience using CMS and SAS helpful. Salary commensurate with experience.

BIostatistician. Asst. Research Prof. level position for work in clinical trials and epidemiologic studies including study design, data management, and analysis. Doctorate in biostatistics or statistics, good communications skills and medical research experience essential. IBM computer experience using CMS and SAS helpful. Salary commensurate with experience. Please send resume to Margaret Townsend, George Washington University Biostatistics Center, 6110 Executive Blvd., Suite 750, Rockville, MD 20852. No phone calls. EOE.

PROFESSOR OF STATISTICS/BIostatISTICS The George Washington University

The Department of Statistics/Computer and Information Systems, in conjunction with its research facility, the Biostatistics Center, is recruiting a full professor with tenure or tenure accruing, starting in the Fall of 1989. The position will be funded on a nine to twelve month basis jointly by academic funds from the University and by sponsored research funds from the Biostatistics Center. The Department offers a broad curriculum leading to advanced degrees in statistics, and the Biostatistics Center serves as the Coordinating Center for over 12 cooperative studies and engages in statistical methodological research. The position involves teaching (at reduced effort), doctoral student supervision, and serving as a senior statistical advisor on methodologic issues for ongoing medical research projects. A strong record of research in statistical theory and methods related to biostatistical applications is required. Salary will be commensurate with experience and past performance. Please send a resume and three letters or reference to: Dr. John M. Lachin, Director, The Biostatistics Center, 6110 Executive Blvd., Suite 750, Rockville, Md. 20852. Applications will be accepted until February 1, 1989. It is anticipated that funding will be available effective July 1, 1989. EOE.



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