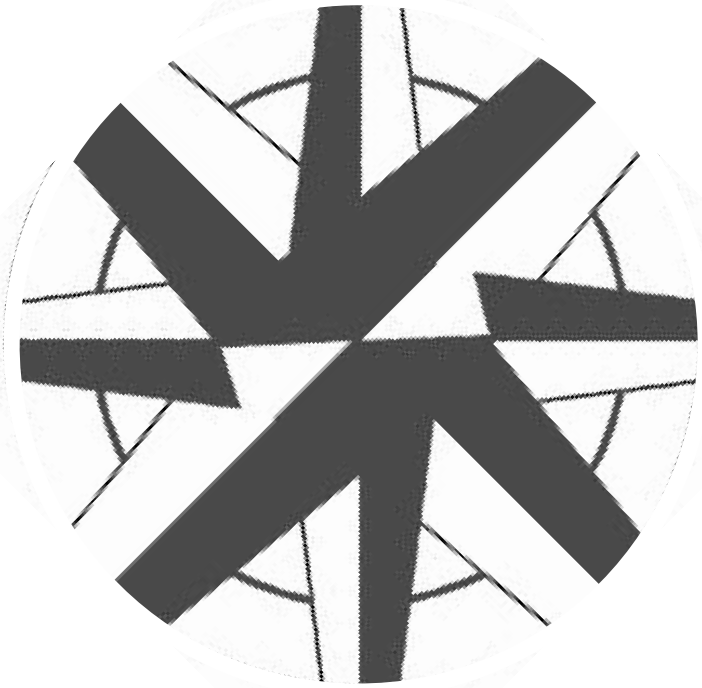
DIR/96-RFP

A Census Bureau Tradition

Research Opportunities at the Census Bureau



1997–1998

The ASA/NSF/Census Bureau Research Fellow Program

U.S. Department of Commerce
Economics and Statistics Administration
BUREAU OF THE CENSUS

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The ASA/NSF/Census Bureau Research Fellow Program

Issued July 1996



U.S. Department of Commerce
Michael Kantor, Secretary
David J. Barram, Deputy Secretary

Economics and Statistics Administration
Everett M. Ehrlich, Under Secretary
for Economic Affairs

BUREAU OF THE CENSUS
Martha Farnsworth Riche, Director



Economics and Statistics Administration

Everett M. Ehrlich, Under Secretary for Economic Affairs



BUREAU OF THE CENSUS

Martha Farnsworth Riche, Director

Bryant Benton, Deputy Director

Paula J. Schneider, Principal Associate Director for Programs

Cynthia Z.F. Clark, Associate Director for Methodology and Standards

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ASA/NSF/Census Bureau Research Fellow Program 1997-1998

Program Description

The ASA/NSF/Census Bureau Research Fellow Program will help to bridge the gap between government and academic social science. This approach brings social science researchers closer to the production of the data for use in their research. The program allows senior statisticians and social scientists, as Research Fellows, to come to the Census Bureau for a period of 6 to 12 months where they may use census data and interact with census staff.

Applicants for fellowships should have recognized research records and considerable expertise in their areas of proposed research. The proposed projects may be in any area related to Census Bureau methodology or data. Research topics of interest to the Census Bureau are cited in this brochure. We also encourage proposals in other areas relevant to Census Bureau data or census or survey methodology. Applicants must submit detailed research proposals for competitive evaluation. A Program Review Board composed of staff from the Census Bureau, and members of academic associations relevant to the areas of research review the applications and select the Fellows for the program.

We encourage researchers to seek further support from the National Science Foundation (NSF) for their work begun under, or stimulated by, the research program. Such support requires applying to NSF for a regular project grant. Information about procedures for submitting proposals to NSF should be requested soon after entering the research program. If such continuing research is funded, it may continue at the Census Bureau or at an academic or supporting institution.

See Administrative Information for the application procedure.

Direct questions about fellowships or research topics to any of the following program representatives at the Bureau of the Census, Washington, DC 20233.

Program Manager
Peggy Poole
ASA/NSF/Census Bureau Research Fellowship Program
Bureau of the Census, Office of the Associate Director for Methodology and Standards
Room 3000-4; 301-457-4895,
Internet mpoole@census.gov

Statistical Methodology
Dr. William Bell
Statistical Research Division
Room 3000-4; 301-457-4728,
Internet wbell@census.gov

Social and Demographic Studies
Dr. Daniel Weinberg
Housing and Household Economic Statistics Division
Room 302-IM; 301-763-8550,
Internet Daniel.Weinberg@census.gov

Geography
Dr. Joel Morrison
Geography Division
Room 101 SPC; 301-457-1132,
Internet joel.morrison@census.gov

Economic Studies
Dr. Arnold Reznek
Economic Planning and Coordination
Room 211 WP; 301-457-1856,
Internet areznek@census.gov

About the Census Bureau

The Bureau of the Census is the largest general-purpose statistical agency in the United States. By conducting censuses and surveys of households, individuals, business firms, farms, and governments, the Census Bureau produces demographic and economic statistics. These statistics count and profile the people and institutions of the United States and their interaction with the rest of the world. Specifically, the Census Bureau conducts censuses and sample surveys in the areas of population, housing, manufactures, business (wholesale trade, retail trade, and services), mineral industries, construction, agriculture, finance, transportation, governments, and foreign trade.

The Census Bureau produces data for publication and use by other government agencies. By conducting surveys for other government agencies, the Census Bureau actually collects and tabulates much of the data these agencies publish. Examples include the *American Housing Survey* for the Department of Housing and Urban Development, the *National Crime Survey* for the Department of Justice, the *Manufacturing Energy Consumption Survey* for the Department of Energy, and the *Consumer Expenditure Survey* for the Department of Labor. In addition, the Census Bureau makes extensive use of other Federal agencies' administrative records in compiling its statistical data. The Census Bureau has garnered the reputation as the ''Factfinder for the Nation.'' The annual *Census Catalog and Guide* is the best reference on the Census Bureau's programs. This reference contains a product overview and index, abstracts of products released since 1980, ordering information and forms, lists of sources of assistance, and an informative series of facts on Census Bureau programs. The publication is available in local libraries and from the Administrative and Customer Services Division, Bureau of the Census, Washington, DC 20233, 301-457-4100.

The Census Bureau conducts its own methodological and subject matter research aimed at improving its data production programs. Current broad research areas include statistical standards, survey design and estimation, evaluation and quality assurance, confidentiality, nonsampling errors, automation, data analysis, time series analysis, statistical computing, and organizational research.

Advantages of This Program

By conducting research projects at the Census Bureau, the researchers have a unique opportunity to make major advances in methodology and applications in many areas. These areas include, but are not limited to, the suggested projects discussed in this brochure. This opportunity is unique for three reasons: (1) researchers become special sworn Census Bureau employees, (2) researchers can work directly with Census Bureau staff who are most familiar with the data and with methods of producing the data; and (3) researchers have the opportunity to become more familiar with Federal statistical agencies and resources in the Washington area. The status of a special sworn Census Bureau employee gives the researchers access to survey microdata that regular Census Bureau employees have. This is particularly advantageous as microdata data are not generally released because of the legal requirement to protect respondent confidentiality. Researchers have the same responsibility as employees regarding nondisclosure of such data.

Suggested Projects

Suggested projects are listed under three headings reflecting the organization of the Census Bureau: social and demographic studies, economic measurement and analysis, and statistical methodology and computing. Proposed projects may fall into more than one category and are not limited to those listed here. Any proposed project should have the potential to encourage further significant broadly based research and should require hands-on access to Census Bureau data. We welcome projects that could lead to improvements in the quality and usefulness of our data.

Social and Demographic Studies

Projects in this area concern Census Bureau surveys and censuses of households and individuals.

Decennial Census Undercount Research. Much discussion in the legal, political, and statistical communities concerns estimating the undercount in the census. We are soliciting proposals to investigate the following issues:

- How census coverage can best be measured?
- How local area estimates of coverage can best be made?
- How census coverage estimation might affect critical uses of the data?

Survey of Income and Program Participation (SIPP). SIPP is a series of nationally representative panels of the noninstitutionalized population. To date, there have been ten panels, introduced annually; each panel typically remains in the survey for 2 1/2 years. In 1996, a new panel was introduced to last 4 years. Each SIPP panel provides detailed information through personal interviews at 4-month intervals. The information contains intrayear sources of money and nonmoney income, taxes, assets, and liabilities. Information is also collected on special topics such as education and work history, health and disability, fertility, migration, and employer-provided benefits.

Research Fellows may use SIPP data for conceptual, methodological, or applied studies on large longitudinal social science databases. One particularly useful approach might be to match contextual variables to the local geography. Some principal areas of research interest include the following:

- Sources of, and reasons for, intrayear changes in income, assets, and program participation.
- Methods to compensate for attrition and nonresponse.
- Stochastic modeling of events such as movement into and out of poverty.
- Measurement of the dynamics of household and family composition and how they relate to program participation and poverty status.

Analysis and Evaluation of Housing Statistics. Statistics on housing are available from the decennial census and from several periodic national surveys. We welcome proposals for applied studies using these data and for the following projects of particular interest.

- Use of modeling to help improve estimates of households' utility costs.
- Evaluation of data items on the quality and value of housing.
- Research to explain consistent differences, across censuses and surveys, in the numbers of owner-occupied housing units and rented units.
- Design of a sampling frame to estimate additions to the housing stock from sources other than new construction.
- Development of county-level estimates of the number of housing units.

Intercensal Population Estimates and Population Projections. The intercensal estimation program uses data from vital statistics and State and Federal administrative records to estimate the changes in population since the last decennial census. These data produce estimates by age, race, and sex for the nation, by age for States, and population numbers for counties and places. Projects in this area could include a wide variety of topics:

- Exact matching techniques for administrative data sets.
- Geographic coding procedures to match mailing address information to census geography.
- Methods of correcting for biased coverage of administrative records.
- Methods for expanding the level of geographic and characteristic detail in Census Bureau estimates.
- Procedures for combining short- and long-term population projection models.
- Methods of estimating and presenting multiple projections scenarios vs. forecast intervals.
- Application of time series methods to population projections.

- Combination of demographic and economic methods in population projections.

Small Area Income and Poverty Estimates. The Census Bureau has begun a program to provide a biennial series of estimates of six statistics of income and poverty—per capita income, median household income, and the number of persons below the poverty threshold for four age groups (age 65 and over, age 5-17, under 5 years of age, and all ages)—for States and counties. We will issue the first estimates, for income year 1993, in late 1996. We anticipate basing sample estimators on a mix of decennial census estimates, direct sample estimates, and Federal administrative data. Projects in this area could include:

- Investigations relating concurrent measurements of basic income and poverty statistics from any pair of sources—the decennial census and current surveys, the census and administrative records, or current surveys and administrative records.
- Optimal methods for combining ‘‘symptomatic indicators’’; e.g., numbers of food stamp recipients, with more direct measures of income and poverty.
- Validation studies.

Estimation and Analysis of Biases and Errors in Demographic Estimates. From a demographic or statistical perspective, Research Fellows would investigate ways to improve Census Bureau postcensus demographic estimates. These data include estimates of population by age, race, and sex for national and subnational geographic areas. Research would center on gaining a better understanding of biases in the current estimation methods, specifying new methods to reduce these biases, and estimating error variances of the methods. Sample topics include the following:

- Investigation of possible basic deficiencies in the Census Bureau’s handling of demographic accounts for estimates, such as whether the demographic components are adequately measured or estimated or whether better estimation procedures can be devised using other indicator variables or relationships than are now used.
- Use of statistical or simulation methods to quantify biases in demographic estimates and the sensitivity of the estimation methods to changes in their underlying assumptions.

Adjusting for Nonsampling Errors in Income Surveys. Income statistics derived from SIPP and the March Current Population Survey (CPS) are subject to nonsampling error problems. These errors affect the accuracy of our measures of income inequality, estimates of the low-income population, and estimates of participation in government transfer programs. The researcher would develop profiles of the level and characteristics of the nonsampling error for specific income types and would investigate alternative procedures for adjusting the survey data at the micro level to reduce the magnitude of these errors.

Coverage Evaluation in Demographic Surveys. Undercoverage in demographic surveys is much higher than in the decennial census, and it varies across demographic groups. For example, the estimate for undercoverage is more than 15 percent for Black males overall and is even greater for young Black males in CPS. Research could focus on:

- Reasons for greater undercoverage in surveys than in the census.
- Types of people missed in surveys who are not missed in the census.
- Coverage comparisons among different Census Bureau surveys or between Census Bureau surveys and those of other countries.
- Field tests of methods that may improve coverage.

Valuation of Noncash Benefits. Noncash benefits have become an increasingly important component of economic well-being in the United States. These benefits are received by households all along the income distribution, ranging from means-tested transfer provided by the government to various fringe benefits provided by employers. Although extensive survey information is available on the recipiency of these benefits, much more work is needed to assign dollar values to them. Extensive work has been done at the Census Bureau to value the major government-provided benefits such as food stamps, free or reduced-price school lunches, public housing, Medicaid, and Medicare. Additional work is

needed, however, to refine these estimates, particularly for medical care. Work is also underway for valuing employer-provided benefits such as contributions for health care and pensions, but much more effort is needed. Such privately provided benefits are much more difficult to value than government-provided benefits because they come in so many different forms, and independent administrative data are often scarce. The researcher could develop methodologies to produce and refine estimates of noncash benefits, assess the accuracy of these estimates, and examine the effect on measures of income distribution and poverty.

International Demographic and Socioeconomic Analysis. The Census Bureau has working relationships with most other national statistical offices around the world, and therefore has a wealth of international statistics. A portion of these are included in an international database for all countries, and in a smaller database that focuses on statistics on the aged in 31 countries. These data could be used to explore relationships among demographic and socioeconomic variables for countries or regions around the world.

Economic Measurement and Analysis

Projects in this area concern censuses and surveys of business establishments and firms. General areas of interest include the following:

- Conceptual and empirical issues in the measurement of economic and related variables.
- Procedures for assessing the accuracy and improving the measurement of economic variables.
- Development and application of appropriate economic and econometric frameworks for analyzing detailed Census Bureau data for businesses and other economic entities.
- Analysis of changes in Federal, State, and local fiscal responsibility for providing domestic services.
- Exploration of forecasting and policy uses of Census Bureau data at the national and regional levels.
- Topics of particular interest are noted below, but we encourage proposals in other areas.

Manufacturing Industry Studies at the Micro Level. Longitudinal Research Data Base (LRD) is available for econometric studies of establishments and firms. It includes the Establishment Data (LED) File, which contains annual data from 1972 to the most recently completed survey year covering 350,000 manufacturing establishments in census years and from 55,000 to 70,000 in noncensus years. The microdata in the files are confidential, which precludes direct use except by sworn Census Bureau employees, including Research Fellows and Census Bureau Scholars. The types of data in the LRD include number, payroll, and supplementary labor costs of production and nonproduction workers, production-worker hours, cost of materials and supplies consumed (often detailed in census years with quantities), costs of fuel and electricity consumed, capital expenditures, depreciation charges, rental payments, gross book value of machinery and equipment, value of shipments by five-digit SIC (seven-digit SIC with quantities in many cases), and inventories by stage of fabrication. Together with data from other surveys (e.g., Research and Development, Capacity Utilization, Pollution Abatement, Defense-Oriented Industries), LRD enables researchers to conduct a wide range of economic and econometric time series and cross-section studies of individual establishments and groups of establishments. The data are well suited for the following types of studies:

Econometric studies of production relationships, such as:

- Production and cost models.
- Interrelated factor demand analyses.
- Technical change, productivity, and efficiency.
- Economies of scale and scope.
- Input and output measurement.

Industrial organization studies, such as:

- Entry and exit of firms.
- Mergers and acquisition.

- Relationship between firm size and employment change.
- Effects of technical change on market structure.

Research Development and Scientific Personnel. For the National Science Foundation (NSF), the Census Bureau conducts an annual survey of research and development (R&D) expenditures by major R&D performing and sponsoring companies. Both cross-section and time series studies can be conducted using a national aggregate data file containing data from 1947 and company-level files containing data from 1972. R&D data available include total federal and company-funded (with separate categories for basic and applied R&D in some years) as well as applied R&D by product field, energy R&D, pollution abatement R&D, product vs. process R&D, basic R&D by field of science, and R&D by State. Extracts of these data, when merged, for example, with extracts from the LRD file and the publicly available COMPUSTAT data file, permit researchers to address a wide range of important R&D-related economic measurement and policy issues. Some examples are:

- Relationships between R&D and productivity.
- Innovation and its diffusion.
- Demand for scientists and engineers.
- Effects of tax credits on R&D investments.
- Capital formation.

Economic Measurement and Analysis in the Service Sectors. The Census Bureau is expanding industry coverage and the types of data collected for these sectors, especially telecommunication, real estate and finance, transportation, and various business services such as advertising, accounting, and legal services. We welcome proposals on the following topics:

- Output measurement and deflation (particularly in multiple-output or multiple-characteristics frameworks).
- Input definition and measurement, technological change.
- Capital input measurement, depreciation, and obsolescence.
- Economies of scale and scope.
- Market share definition, stability, and trends.

Construction Cost and Output Indexes. Indexes used by the Census Bureau to deflate the value of new nonresidential construction put in place have been inadequate. Research to develop a new indexing program would involve development of cost models for different types of nonresidential construction, such as industrial, commercial, and medical, and a review of current program data for application to cost models, and recommendations for additional data collection to support improved index methods.

Econometric Studies of Agricultural Establishments. The censuses of agriculture provide a wide range of data for studying the economic performance of farms and other agricultural establishments for which crucial assumptions of applied microeconomics actually hold. These data include atomistic competition, competitively determined prices, large numbers of buyers and sellers, and relatively easy entrance to, and exit from, production of particular commodities. These microdata are largely unexploited in studies of production and offer outstanding opportunities for econometric research.

Small Business Entrepreneurship: The Characteristics of Business Owners (CBO) Survey. This survey is sponsored by the Census Bureau, the Minority Business Development Agency, and the Small Business Administration. The survey presents data about the demographic, sociological, and financial characteristics of minority- and women-owned business owners and their businesses as well as a comparable nonminority male business universe. The data from this sample survey were collected as part of the economic censuses and are intended to expand and augment the data published in two Economic Censuses reports—the Survey of Women-Owned Businesses (WOB) and the Survey of Minority-Owned Enterprises (SMOBE). Research Fellows will have access to the microdata from the CBO survey (covering 125,000 business owners and their enterprises in each of 1982 and 1987). These data are particularly suited to studies of minority small business entrepreneurships.

Improving Merchandise Trade Statistics. The Census Bureau is responsible for compiling detailed U.S. merchandise trade statistics, using

documents collected by the Customs Service, Department of the Treasury. In recent years, increasing concern has developed about the economic effects of foreign trade, resulting in criticism of the scope, accuracy, and timeliness of the available data on trade.

We welcome research proposals that may lead to improved estimates, especially in the following areas:

- Determining what trade information is likely to be most in demand and require the greatest accuracy in the coming decades and suggesting changes in the existing data system to provide this information.
- Improving data collection, data processing, and quality assurance through such means as introducing sampling into the collection process and increasing the use of automation.
- Developing monthly real (deflated) estimates of merchandise trade flows.
- Developing new methods for estimating international merchandise trade flows in a free trade economy.

Measurement of Capital Investment in Economic Surveys. The Census Bureau measures capital investment in a variety of ways in its economic survey programs. A primary use for these data is in the fixed nonresidential investment component of the Gross National Product (GNP). Conceptually, these data are not completely consistent with each other or with the GNP investment definition. The Bureau welcomes proposals that would help provide greater standardization and consistency among these measures of capital investment. A related issue is the improvement of measures of capital stocks, taking into account such factors as the economic life of capital goods and the sensitivity of capital stocks to changes in technology and relative factor prices.

Microfoundations of Macroeconomics. Recently, researchers at the Census Bureau and elsewhere have begun to recognize that understanding aggregate (macroeconomic) fluctuations requires studying the behavior of individual plants and firms. For example, studies using data from the LRD show that when economic conditions change, plants' and firms' adjustments in employment and investment are often lumpy (not smooth) and that such microeconomic reallocation and restructuring has macroeconomic effects. The currently available macroeconomic time series often mask these effects. Further, some researchers suggest that our understanding of aggregate fluctuations could be enhanced if certain new aggregate measures were made available— based on the higher moments (e.g., skewness, kurtosis) of the cross section distributions of variables such as investment and employment. Research proposals in this new research area are particularly welcome.

Statistical Methodology and Computing

This area includes research that is not necessarily tied to particular Census Bureau data sets, but has broad application to the collection, processing, or analysis of Census Bureau data. Survey methodology and related areas are of particular interest, along with any other research topics that may lead to improved data quality and reduced costs.

Survey Methodology. The Census Bureau is interested in projects dealing with any aspect of survey methodology, which (for purposes of this brochure) encompass all the steps taken in conducting a survey or a census:

- Determining survey objectives.
- Defining the target population.
- Selecting the frame (or frames).
- Designing the sample.
- Choosing the method of measurement (e.g., personal or telephone interviews, or mailed questionnaires).
- Selecting the information to be obtained and the questions to be asked.
- Selecting and training interviewers and other field workers.
- Conducting pretests.
- Organizing the fieldwork.
- Organizing data management (data processing and quality control).

- Data analysis, particularly of longitudinal data.

These items are of continuing interest to the Census Bureau because the Census Bureau is continually developing and redesigning its surveys and censuses. Many of the Census Bureau's demographic surveys (of households and individuals) are redesigned around the time of the Decennial Census, and many of the economic surveys (of business establishments and firms) are redesigned around the time of the various economic censuses which are conducted in years ending in ''2'' and ''7''. Many of the projects below and those in other sections of this brochure relate to particular problems of survey methodology.

The Adjustment for Nonresponse in Sample Surveys and Censuses. Research in this area would be aimed at improving data quality by:

- Developing data collection procedures that reduce nonresponse (e.g., through improved questionnaire design, training in interviewing techniques, etc.).
- Exploring and evaluating new or existing techniques for reducing nonresponse bias in estimates.

Quality Improvement and Its Measurement. The Census Bureau encourages proposals for ways to apply a wide range of quality improvement methods to a variety of Census Bureau operations, including interviewing and data processing. Researchers could investigate such topics as the following:

- Methods to objectively estimate costs to users of various kinds of errors in Census Bureau data (loss functions).
- Integrated overall error models, with provisions for estimating magnitudes of relationships among various error sources.
- Methods of adapting evolutionary operations (EVOP) techniques to various Census Bureau operations, especially controlled experiments under operating conditions.
- Ways to measure how quality and productivity relate to factors such as alternative organizational structures or presumed morale builders such as quality circles.
- Effective patterns of quality control feedback, training, and incentives for enumerators and managers that would be applicable to large economic or demographic censuses and surveys.
- Ways to report to users most usefully and objectively the levels and relationships of errors.

Cognitive Processes and Question Response. The construction of questions and questionnaires is frequently described as an ''art'' or ''craft.'' Survey methodologists have studied such issues as the effects of question placement within a questionnaire and the tendency of respondents to recall events as happening more recently or more distantly than they actually occurred. Proposals are sought from those who would use the methods of the cognitive sciences to improve the understanding of such questionnaire construction issues as question order, the choice of vocabulary in a question, the choice of response categories, and response analysis studies of questionnaires. The topic offers cognitive and other social scientists the opportunity to use Census Bureau surveys to extend laboratory-based theories of the way in which people comprehend, store, and retrieve information, make judgments and causal inferences, and respond to questions.

Telephone Survey Methods. In anticipation of the increasing use of centralized telephone interviewing in data collection, the Census Bureau has conducted experiments with Computer-Assisted Telephone Interviewing (CATI) and Random Digit Dialing (RDD) telephone sampling. In addition, the Census Bureau has investigated dual-frame mixed mode sampling designs. Developmental and evaluative research topics in this area include the following:

- Modeling and estimation of telephone survey nonsampling error.
- Comparison of CATI and conventional interviewing in terms of data quality, costs, and estimates produced.
- Touchtone data entry and voice recognition.
- Cost modeling of new and conventional collection methods and minimization of survey costs.
- Improving the efficiency of RDD, list-assisted, and related telephone sampling methods.
- Optimum allocation of resources in dual-frame sampling designs, taking both sampling and nonsampling errors into account.

Confidentiality Protection and Related Topics. Statistical confidentiality deals with the problem of releasing statistical data that are as accurate and complete as possible while avoiding disclosure of information collected from individual respondents. We welcome proposals that would supplement the Census Bureau's research in the following topics:

- Masking and microaggregation techniques.
- Rounding and other perturbation techniques for frequency counts.
- Cell suppression strategies for aggregate data based on mathematical programming formulations.
- Development of suitable measures of disclosure risk and the effects of disclosure-avoidance methods on data usefulness.

Related areas of interest for proposals include:

- Development of public use files of economic microdata (see Developing Public Use Files of Economic Microdata above).
- Statistical database security.
- Methods to assess and improve or maintain public attitudes about confidentiality in federal statistical programs.

Small-Area Estimation. The Census Bureau is required to produce estimates for various subdomains and subnational domains for which direct estimates cannot be made because of the shortage of sample units in the domains. One example of this small-area estimation problem is the production of State-level estimates of Federal program participation from surveys designed to provide accurate national estimates. To improve these estimates, more research into statistical modeling techniques such as synthetic estimation and ratio correlation, along with more formal statistical modeling approaches including hierarchical Bayesian analysis is needed.

Geographic Issues for Current Surveys. The Census Bureau publishes data for several subnational geographic units such as States, regions, counties, and metropolitan areas. Many data users say that the Census Bureau should publish more data for different types of geographic units. Suggestions include types of settlement areas (e.g., neighborhoods, inner-city areas, or open countryside) or substantive types of places (e.g., expanding or declining housing markets). Research in this topic could focus on:

- What geographic units best measure various subnational social, economic, and demographic phenomena.
- How the Census Bureau can effectively incorporate such units into its survey programs to produce more useful subnational data.

Time Series Methods for Periodic Surveys. Research has shown that time series techniques can use both past and current data to produce improved current estimates for periodic surveys. Additional research is needed on practical problems that arise in applying these techniques, such as modeling the covariance structure over time of the sampling error, dealing with the effects of establishing benchmarks, and handling data problems such as outliers, missing data, and changes in sample design or sample size. Investigation of the amount of improvement over conventional estimates that can be realized in practice is also needed.

Time Series Analysis. As a publisher of large numbers of economic and demographic time series, the Census Bureau has a strong interest in the development and application of time series methodology, and provides an excellent environment for research in this area. Areas of interest cover a broad range of topics in univariate and multivariate time series methodology and applications. Topics of particular interest include the following:

- Modeling and forecasting of demographic time series.
- Analysis of spatial data (such as State or county data).
- Methods of dealing with outliers in time series modeling and seasonal adjustment.
- Various topics in seasonal adjustment, including estimating error variances for seasonally adjusted data.
- Methods for modeling, forecasting, and seasonally adjusting large numbers of time series.

Analysis of Categorical Data. A significant portion of the Census Bureau's statistical output is in the form of cross-tabulations; yet, statistical methods for categorical data are rarely employed by

the Census Bureau. Research on effective application and presentation of highly structured categorical methods, such as log-linear models, and more descriptive alternatives, such as correspondence analysis, could stimulate further use of these techniques in publications intended for general audiences. Related topics include analysis of the effect of response error and other nonsampling errors on these analytic techniques, capture-recapture models for the evaluation of census coverage, categorical approaches to small domain estimation from survey data, and other categorical applications to estimation from surveys.

Statistical Computing and Graphics. The Census Bureau is conducting a research and development program to provide the most modern statistical computing support to its research and data analysis programs. The major subject areas in this research are statistical databases (including development of a statistical database for tabulating and analyzing data from Census Bureau surveys), statistical graphics (including use of color graphics), generalized statistical software, artificial intelligence, and software requirements for data analysis workstations for nonprogrammers. We welcome proposals that relate to one or more of these areas.

Administrative Information

Conditions of Appointment and Benefits

Research Fellows and Census Bureau Scholars will conduct their research at the Bureau of the Census, in Suitland, Maryland, a suburb of Washington, DC. While participating in the program, they are to follow normal Census Bureau policies and practices. The researchers are reimbursed by the ASA and are on a guest worker arrangement with the Census Bureau, or they are paid under the Intergovernmental Personnel Act (IPA).

The stipends received by researchers in this program are commensurate with their qualifications and experience. Fringe benefits and travel allowances are negotiable. Usually, we can negotiate retention of fringe benefits with the permanent employer.

The duration of the fellowship appointment is flexible; the usual term is 6 months to 1 year. Extensions to appointments, appointments split into two separate terms, and part-time fellowships are also possible.

Census Bureau computing resources available to the researchers include Unix servers and workstations, DEC minicomputers, and various personal computers. Computer networks also provide internal electronic mail, as well as access to the Internet through our isolated server workstation. Other support provided to researchers includes technical and secretarial support, library facilities, a travel allowance, and interaction with the Census Bureau's professional staff. Funds are also available to accommodate specialized needs for computer software and hardware. The researchers who work with Census Bureau computing equipment are subject to a routine security clearance.

Application Procedure

The following information is required of all fellowship applicants:

1. A curriculum vitae.
2. The names and addresses of three references who may be contacted.
3. A detailed research proposal to include the following:
   a. Short descriptive title for the project.
   b. An indication of the fellowship program for which the applicant is applying—Census, BLS, or NCES. (Note: Applicants may apply to more than one program.)
   c. Abstract of one-half page or less that summarizes the project.
   d. Proposed term (approximate dates).
   e. Background information on research topic with references.

f. Statement of relevant work already accomplished by the researcher.

g. Proposed research plan with sufficient detail for evaluation of expected results.

h. Significance of expected results.

i. Advantages of conducting the research at the Census Bureau.

j. Requirements for research support and work facilities.

k. Salary and benefits.

Note: The following are not eligible for these fellowships: U.S. Federal Government employees; members of Review Boards of ASA-sponsored Fellowship programs; and members of the Board of Directors of ASA.

Applications for the ASA/NSF/Census Bureau Research Fellow Program should be sent to:

Ms. Marie Argana
ASA/NSF/Census Bureau Research Program
American Statistical Association
1429 Duke Street, Alexandria, VA 22314-3402

The application deadline is January 4, 1997. Final decisions will be made by March 2, 1997.