

# U.S. Census Bureau Dissertation Fellowship Program

The U.S. Census Bureau's mission is to collect and provide timely, relevant, and quality data about the people and economy of the United States. Over 200 years ago, the United States Constitution laid the foundation for what is today one of the world's largest and most comprehensive data-gathering organizations. Every month, quarter, and year, the Census Bureau plans, implements, and evaluates over 100 sample surveys that update and add to information from the economic census (taken every 5 years) and the population census (taken every 10 years)—information that mirrors the concerns of the country. These data collection efforts would be impossible to conduct without continuous research and development.

## The Census Bureau Dissertation Fellowship Program

This program seeks to award a limited number of contracts each year to Ph.D. -granting accredited institutions of higher education in the United States to fund the dissertation research of doctoral candidates who propose and investigate solutions to problems on the list of research topics of primary interest to the Census Bureau. (See <[www.census.gov/srd/www/DissertationFellowshipTopics.pdf](http://www.census.gov/srd/www/DissertationFellowshipTopics.pdf)> for list of research topics.) When fully implemented, up to ten dissertation fellowships will be awarded annually for up to \$50,000 each. The application materials and supporting documents for each Dissertation Fellow must be submitted by his or her university. Dissertation Fellowships will be awarded to institutions of higher education for doctoral candidates of unusual promise and ability whose general fields of research relate to statistics, economics, and demography. Direct connections to the cited listing of research topics is essential. Exceptionally strong candidates writing master's theses that address these problems will also be considered.

### Conditions of Dissertation Fellow Appointment

- A Dissertation Fellow must
- be a doctoral candidate or exceptionally strong master's candidate.
  - be funded by a contract awarded to institution for tuition, research materials, travel, and salary.
  - devote full-time effort, be enrolled full-time, and in residence at Fellow's Institution.
  - report progress biannually.
  - collaborate on-site with Census Bureau staff for one to two months.
  - present research results in a Census Bureau seminar.

### Eligibility and Consideration

United States citizenship is required.

### Tenure

One year with possible extension up to one year.

### Dissertation Proposal

Include title, abstract, specific problem(s) being studied that relates to research topics <[www.census.gov/srd/www/DissertationFellowshipTopics.pdf](http://www.census.gov/srd/www/DissertationFellowshipTopics.pdf)>, approach, expected results, relevant bibliography, and name and position of faculty advisor (5-page limit and double spaced).

### Application Package

- *A cover letter from institution*, typically from the department chair of the doctoral candidate being proposed for a Dissertation Fellowship.
- *Dissertation proposal* of doctoral candidate.
- *A curriculum vitae and transcripts* of the doctoral candidate (names of all institutions attended, years attended, degrees received; list of any honors, awards, fellowships, employment, publications, and contact information).
- *A curriculum vitae* of the faculty advisor.
- *Signed statement* from faculty advisor and department chair confirming applicant is a doctoral candidate.

### Deadline

Application package and supporting documents should be submitted by February 28.

### Clarifications and Questions

Contact: Dr. Tommy Wright  
Chief, Statistical Research Division  
U.S. Census Bureau  
Phone: 301-763-1702  
Fax: 301-763-8399  
E-mail: [tommy.wright@census.gov](mailto:tommy.wright@census.gov)

### Mailing Address for Application Package and Supporting Documents:

*One original and one softcopy to:*      **and**      *One original to:*  
Carol Gentry  
U.S. Census Bureau  
Acquisitions Division  
4600 Silver Hill Road, Room 3J447  
Washington, D.C. 20233-1700  
E-mail: [carol.a.gentry@census.gov](mailto:carol.a.gentry@census.gov)  
Dissertation Fellowship Program  
ATTN: Kelly Taylor  
U.S. Census Bureau  
Statistical Research Division  
4600 Silver Hill Road  
Washington, DC 20233-9100



For more information and listing of research problem topics see the Census Web page:  
<[www.census.gov/srd/www/DissertationFellowshipTopics.pdf](http://www.census.gov/srd/www/DissertationFellowshipTopics.pdf)>.

The U.S. Census Bureau is an Equal Opportunity Employer.

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10. PLEASE FURNISH QUOTATIONS TO THE ISSUING OFFICE IN BLOCK 5a ON OR BEFORE CLOSE OF BUSINESS (Date)		IMPORTANT: This is a request for information, and quotations furnished are not officers. If you are unable to quote, please so indicate on this form and return it to the address in Block 5a. This request does not commit the Government to pay any costs incurred in the preparation of the submission of this quotation or to contract for supplies or service. Supplies are of domestic origin unless otherwise indicated by quoter. Any representations and/or certifications attached to this Request for Quotation must be completed by the quoter.		

**11. SCHEDULE (Include applicable Federal, State and local taxes)**

ITEM NO.	SUPPLIES/ SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
(a)	(b)	(c)	(d)	(e)	(f)

12. DISCOUNT FOR PROMPT PAYMENT	a. 10 CALENDAR DAYS (%)	b. 20 CALENDAR DAYS (%)	c. 30 CALENDAR DAYS (%)	d. CALENDAR DAYS	
				NUMBER	PERCENTAGE

NOTE: Additional provisions and representations  are  are not attached.

13. NAME AND ADDRESS OF QUOTER			14. SIGNATURE OF PERSON AUTHORIZED TO SIGN QUOTATION		15. DATE OF QUOTATION	
a. NAME OF QUOTER			16. SIGNER		b. TELEPHONE	
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c. COUNTY			c. TITLE (Type or print)		NUMBER	
d. CITY		e. STATE	f. ZIP CODE			

**SECTION 1  
EXECUTIVE SUMMARY**

**1.1 Background and Objectives**

**1.1.1 Background**

The U.S. Census Bureau's mission is to collect and provide timely, relevant, and quality data about the people and economy of the United States. Over 200 years ago, the United States Constitution laid the foundation for what is today one of the world's largest and most comprehensive data gathering organizations. Every month, quarter, and year, the Census Bureau plans, implements, and evaluates over 100 sample surveys that update and add to information from the economic census (taken every five years) and the population census (taken every ten years) - information that mirrors the concerns of the country. These data collection efforts would be impossible to conduct without continuous research and development.

**1.1.2 Objectives**

The Census Bureau seeks to award a limited number of delivery orders to accredited institutions of higher education in the United States to fund the dissertation research of doctoral candidates or exceptionally strong master's candidates who will propose and investigate solutions to problems on the list of research topics of primary interest to the Census Bureau. When fully implemented, up to an estimated ten delivery orders for the research and documentation of the results will be awarded annually to candidates whose general fields of research related to statistics and demography. Direct connections to the list of research topics is essential.

## **SECTION 2 STATEMENT OF WORK**

The Institution of Higher Education shall perform all work described herein as ordered through individual fixed ceiling price delivery orders with retroactive price redetermination issued by the Contracting Officer (CO). The value of each delivery order shall not exceed \$50,000 per year, unless it is determined by the Government that additional efforts are required.

### **2.1 PERIOD OF PERFORMANCE**

The period of performance shall be stated in each delivery order. (It is anticipated that the period of performance for each delivery order will be one year, with a possible extension of up to an additional one year.)

### **2.2 PLACE OF PERFORMANCE**

The services will be performed primarily at the site of the Institution of Higher Education. However, there will be a requirement for additional services consisting of collaborative research and a seminar at the U.S. Census Bureau. (The specific requirements will be stated in the delivery order.)

### **2.3 SCOPE OF WORK**

The institutions of higher education in the United States shall provide dissertation research of doctoral candidates or exceptionally strong master's candidates who will propose and investigate solutions to problems on the list of research topics of primary interest to the Census Bureau.

The candidate(s) offered by the Institution shall provide the following services:

- Conduct research and report on solutions to problems.
- Collaborate on-site with the Census Bureau staff on matters relating to the proposed solutions to the problems.
- Present final research results in Census Bureau seminar(s).

#### **2.3.1 RESEARCH AND REPORTING OF SOLUTIONS**

The Institution provided candidate shall conduct research and report on solutions to problems relating to the research topics. Listed below is the current list of research topics of primary interest to the Census Bureau. Updates to this list of research topics will be posted at:

<http://www.census.gov/srd/www/DissertationFellowshipTopics.pdf>.

The following topics contain problems that have been judged by the Census Bureau to be among those to receive the highest priorities for research.

## **LIST OF RESEARCH TOPICS (A THROUGH K)**

### **RESEARCH TOPIC A: DECENNIAL CENSUS COVERAGE**

#### **Problem**

The decennial census suffers from errors due to omission of people who should be counted and to erroneous enumerations of people, the latter including enumeration of people who should not be counted at all, enumeration of people in the wrong place, and enumeration of people multiple times (duplication). These problems are substantial. For example, there were an estimated 5.8 million duplicates in Census 2000. Coverage measurement of Census 2000 was afflicted by some of the same problems. The 2000 Accuracy and Coverage Evaluation Survey (A.C.E.) was unable to accurately determine some people's places of residence, resulting in an underestimate of erroneous enumerations, many of which were duplicates. In fact, the failure of the A.C.E. to identify a substantial number of the census duplications as erroneous enumerations was a primary reason the 2000 A.C.E. estimates were viewed as inadequate for coverage adjustment of the Census 2000 results.

#### **Discussion**

The goals of this research are to reduce coverage errors in the census, and also to improve the Census Bureau's understanding of these errors by improving census coverage measurement. Specific topics for research include the following:

- 1) Research to prevent and correct for duplication at all stages of the census and coverage measurement process, from address list development to final coverage estimation.
- 2) Research to improve determination of Census Day residence:
  - a) Development and testing to improve the survey instruments and questions, including alternative presentations and formulations of residence rules.
  - b) More basic research on errors in, e.g., recall and reporting of moves and other problematic residence situations.
  - c) Cognitive and qualitative research and field experiments to evaluate the impact of survey questions on the quality of census coverage measurements.
- 3) Development of coverage measurement methods for group quarters.
- 4) Statistical research on improving coverage estimates, including separate estimation of census omissions and erroneous enumerations.

Topics (1) and (2) aim at improving the data collected in both the census and in census coverage measurement. Topic (3) aims at addressing the Census Bureau's lack of knowledge of the coverage of the group quarters population. Topic (4) seeks to improve coverage measurement, particularly in regard to providing more realistic estimates of omissions and erroneous enumerations than have previously been available. Accomplishing these tasks would further the

Census Bureau's understanding of census coverage issues, helping the Census Bureau to improve future censuses.

## **RESEARCH TOPIC B1: NONRESPONSE - DEMOGRAPHIC SURVEYS**

### **Problem**

Survey nonresponse rates have been increasing, leading to concerns about the accuracy of (demographic) survey estimates. For example, from 1990 to 2004 initial contact nonresponse rates have approximately doubled for selected household surveys, including the Consumer Expenditure Quarterly (from 12% to 23.3%), the Current Population Survey (from 5.7% to 10.1%), and the Survey of Income and Program Participation (from 7.3% to 14.9%). Errors introduced by unit nonresponse may bias survey estimates when nonresponse is high and those who participate in surveys are different from those who do not. Standard nonresponse adjustment procedures typically assume that nonrespondents are similar to respondents, but the literature does not always support this assumption.

### **Discussion**

General topics for research include:

- 1) Strive to increase response rates by improving data collection procedures. Research on data collection procedures may develop methods for increasing response rates (or at least preventing further decreases) either generally or for specific surveys. This would be a true improvement, however, only if methods developed to increase response do not simultaneously degrade the quality of the data collected. Efforts to increase response rates also can lead to higher costs of data collection due to additional interviewer training and various incentive programs.
- 2) Strive to better understand the nature of nonresponse and its effects on data quality. Doing some targeted follow-up of nonrespondents may yield information on how nonrespondents differ from respondents, as may obtaining information from other sources (such as administrative records) that contain information also collected in a survey (assuming that the records can be linked). Such information could be used to develop a better scientific understanding of the nature of survey nonresponse. It may also be useful for research on Topics 1 and 3.
- 3) Develop better procedures to adjust for nonresponse. If nonresponse rates cannot be reduced to negligible levels, the Census Bureau will need to evaluate current nonresponse adjustment procedures and do research to develop improved procedures. Possibilities to explore include comparing hot deck and model-based imputation procedures, and exploring models for non-ignorable nonresponse. The Census Bureau should also pursue implementation of methods for survey variance estimation that account for error due to imputation.

Success on Topic 1 would reduce field costs and improve the accuracy of the Census Bureau's estimates. Success on Topic 2 would let the Census Bureau better inform data users about data

quality and limitations, and would also facilitate work on Topics 1 and 3. Success on Topic 3 would improve the accuracy of the Census Bureau estimates and/or the relevance of its variance estimates.

## **RESEARCH TOPIC B2: NONRESPONSE - ECONOMIC SURVEYS**

### **Problem**

Maintaining or improving response rates is an ongoing goal and constant challenge for economic surveys. Response rates for the 2002 Economic Census declined from 1997.

Response rates for current surveys range from approximately 30% to 95%. Response in the 2002 Economic Census was 84%, with a target of 86% for the 2007 Economic Census.

### **Discussion**

Improving the response rate in the 2007 Economic Census is a strategic goal. Response rates for the Economic Census and selected other surveys are critical PART (Program Assessment and Rating Tool) performance measurements.

The Economic Directorate of the Census Bureau believes that reducing respondent burden is key to improving response. Ongoing research and assessments are underway using such techniques as cognitive testing, respondent debriefings and usability testing for economic survey data collection instruments. Nevertheless, several issues remain to be addressed.

- What are the attributes of respondent burden from the respondent's perspective? Are these measurable? What are the measures? Are the components reducible via survey design? If so, how? To what degree do current activities reduce respondent burden?
- Does the hypothesized relationship between respondent burden and response rates indeed exist? How can this relationship be defined and measured?
- What activities can/should be undertaken to evaluate the effect of burden reduction on response rates? What are their costs and benefits?

Of specific interest is how effective the following strategies are in reducing burden:

- Tailoring questionnaires by company size;
- Aligning data requests with companies' accounting practices and record-keeping systems;
- Developing a company-centric approach for data collection from large companies;
- Developing more effective electronic reporting options that respondents will use.

Response may be positively affected by follow-up strategies. The effectiveness of current follow-up strategies needs to be systematically evaluated. Few directorate resources have been devoted to keeping up with recent discoveries or advances in response motivators. Research into new or alternative strategies and their effectiveness in economic surveys is needed.

Results from both lines of research - burden reduction and follow-up strategies - would benefit the economic programs through improved response rates, which could improve data quality by reducing potential nonresponse bias. Improvements would help the Census Bureau in its attempts to meet OMB's new response rate standards and its own PART targets. More effective follow-up strategies have the potential to result in significant cost savings in conducting economic surveys. (For example, the 2002 Economic Census follow-up costs exceeded \$1.5 million.)

## **RESEARCH TOPIC C: REPORTING UNIT RESEARCH - ECONOMIC SURVEYS**

### **Problem**

A problem for economic surveys is the potential mismatch between the Census Bureau's definition of statistical (reporting) units and the structural units of a company. The organization of a company's records may make it more difficult or impossible for the respondent to provide data according to the Census Bureau's desired statistical units. This could lead to poor quality estimates. For example, companies in some services industries cannot report data by geographic area for products or services distributed via a network.

The extent of problems associated with reporting unit definitions is, to some degree, unknown or unclear, as they are not routinely assessed for economic programs. Research is needed to evaluate the effect of mismatches on published statistics. If changes in reporting units are overlooked, the potential consequences are severe. The Census Bureau's economic censuses and surveys collect data or process administrative data representing 180,000 multi-unit enterprises encompassing 1.7 million establishments, 5.5 million single unit establishments, and 17.6 million nonemployers.

### **Discussion**

Proper definition of statistical units is key to obtaining high quality economic statistics and minimizing respondent burden. This will be facilitated through research to:

- Assess company record-keeping practices;
- Assess the quality and utility of administrative data;
- Assess how administrative data can be more fully used to identify structural changes;
- Improve the timely identification and incorporation of administrative data into Census Bureau programs;
- When administrative and survey data are used to develop statistical estimates, assess how definitions used for administrative data compare with those used for survey data and how these compare with data available in company records;
- Identify the correct respondent(s) for the requested data (noting that multiple sources may be required);
- Assess the effectiveness of the Customer Relationship Manager program; and
- Design efficient processes to aid data-gathering when multiple data providers are needed.



Benefits for the Census Bureau from research would include:

- Timely updates to the Business Register with timely impact on sample frames;
- More efficient/effective communication with respondents, improving the timeliness of data reporting, which could lead to earlier publication and dissemination of data products;
- Improved data quality when reporting among multiple data providers is better facilitated;
- Burden reduction through effective use of administrative data, potentially improving response rates and reducing the costs of nonresponse follow-up.

#### **RESEARCH TOPIC D: EDITING - ECONOMIC SURVEYS**

##### **Problem**

The Census Bureau needs objective measures to assess whether its programs are over-editing their data. Over-editing has cost and quality implications. It can lead to resource problems, in terms of programmer development time and analyst review time. Equally important, it can be viewed as a quality problem - Are the Census Bureau's editing procedures truly improving the reported data or are they (subtly) biasing the data based on preconceived notions of what the Census Bureau believes to be "correct"? Should the Census Bureau be identifying the failure as a problem to begin with? Finally, many Economic Directorate programs subject the same data sets to several stages of review, with some of these stages having possibly minimal impact on the final tabulated data. This has both cost and quality implications.

At a minimum, all Economic programs should:

- Calculate edit-failure rates by respondent and by classification variable value;
- Implement and use audit trails; and
- Develop Standard Operating Procedures for analysis of both sets of measures (hopefully using statistical quality control procedures).

This problem affects most programs in the Economic Directorate of the Census Bureau. The key issue is that the directorate has no standard set of objective measures of the efficacy of edits and their associated review processes. In fact, one of the charges to the Business Process Improvement Team's Edit Efficiency sub-team was to outline the type of auditing needed in the future, and to identify five pilot programs to test these audits.

The Census Bureau believes that the overall cost of editing and multi-stage review is high; though there is no specific cost information available. With objective measures in place, the cost and quality issues could be assessed. The Edit Efficiency sub-team identified a potential savings of 10% of the resources allocated to data analysis in each of the six programs given the recommendation to calculate edit-failure rates and in each of the nine programs given the recommendation to measure the effect of edit process on the resultant data.

## **Discussion**

The Economic Directorate needs a method to analyze the editing process and evaluate the quality of the edits and related review processes so that it can eliminate or modify the existing procedures and conduct research on ways to improve specific edits, such as macro-editing and selective editing.

If research could help solve this problem, the Census Bureau would be changed as follows:

- It would reduce the time spent on the overall editing process while maintaining or improving tabulated data quality.
- It would free the analysts to actually do analysis.
- The Economic Directorate would have a more defensible approach to edit-review processing.
- It would promote the development of repeatable procedures that could be implemented by outside-data users, consistent with the Office of Management and Budget (OMB) Quality Information Guidelines.

## **RESEARCH TOPIC E: PRE-RELEASE REVIEW OF DEMOGRAPHIC DATA**

### **Problem**

Data review of continuing surveys, such as the Current Population Survey (CPS), take a significant amount of time and resources. With the implementation of the American Community Survey (ACS), this data-review work threatens to overwhelm staff. Currently, ACS data review takes about 6 calendar months, during which time about 25 people work from 25 percent to 75 percent of their time on review of the data and data products. As ACS expands to review of full implementation data, and adds Puerto Rico, group quarters, and 3- and 5-year product lines, it will not be possible to complete the work within the current review time frame, without dramatically diminishing its quality.

The dimensions of the problem are huge.

- 1) The large-scale size and cost of getting review done
- 2) Completing reviews efficiently and on time
- 3) Making the mundane/routine parts of review simple and direct to do
- 4) Keeping analysts focused on what is a highly tedious task
- 5) Codifying behavior of routine review activities, perhaps using automation and standardized tools.

### **Discussion**

If the Census Bureau were to solve this problem, there would be benefits. Review would become more efficient. The frequency of errors would be reduced and problem situations would be more easily identified. Staff members would be freed for more useful activities, reducing

burnout. If gold standard processes can be identified, they can be applied to other programs, thus paying for these innovations over time. With more focused and structured review, it is possible that ACS products could be reviewed and cleared in far less time and using fewer human resources.

## **RESEARCH TOPIC F: SURVEY ESTIMATION**

### **Problem**

Research to improve survey estimation techniques, including evaluation of alternative estimation strategies, is needed to keep up with changing circumstances, such as increased nonresponse and demands for small-domain estimators. The continued development of the American Community Survey (ACS) poses new challenges for estimation because the nature of the estimation problems it faces are different from those of other surveys, even the census long form sample. (ACS estimates are desired for traditionally small domains from a very large national sample available yet without corresponding 100 percent census counts in most years.)

The Census Bureau identified a general problem as well as several specific problems in this area. The general problem is that while the Census Bureau's design-based estimation paradigm was developed and works well for estimation in certain situations with large samples (e.g., for many national level estimates), it does not work so well when pushed beyond this realm (e.g., into small area estimation, dealing with large amounts of missing data, dealing with outliers, etc.). In such settings, other approaches (e.g., model-assisted or model-based estimation) may offer opportunities for improvement. Movement in this direction is hampered, however, by such things as tradition, bureaucratic obstacles, lack of staff knowledge of other approaches, and difficulties with implementing a new approach in the Census Bureau's production environment. Addressing this general problem will require additional staff training (e.g., via available short courses), perhaps complemented by recruiting of new staff with backgrounds in alternative estimation approaches, as well as devoting attention to resolving bureaucratic and other obstacles to implementing new or different estimation methods.

### **Discussion**

Particular survey estimation problems identified for research include the following:

- 1) Study optimum use of population and housing unit controls for the ACS and other surveys.
- 2) Investigate bias and uncertainty in pop controls with an eye to developing error estimates for pop estimates; also, study the impact of these errors on survey estimates.
- 3) Do research on estimators that incorporate administrative data to improve ACS estimates for very small areas.
- 4) Do research on improving small area estimation for other Census Bureau survey applications (SAIPE, SAHIE, etc.).
- 5) Investigate the feasibility of using model-based or model-assisted estimation techniques in the monthly residential construction program (to use additional

information from the large sample of building permits to improve estimation of housing starts, completions, and sales).

The Census Bureau can link the general and specific problems by noting the potential of other estimation approaches to address the specific problems just noted. For example, model-assisted estimation, in the form of generalized regression estimation, potentially can reduce the variance of direct ACS estimates without appreciably adding bias, providing a potentially useful tool to assess the average bias in the controls noted in 1) and 2). It is also relevant to the problem noted in 3).

## **RESEARCH TOPIC G: MEASUREMENT ERROR RESEARCH AND PREVENTION**

### **Problem**

Recent Census Bureau experience points to measurement errors (that is, errors of observation arising from the interviewer, the respondent, the questionnaire, or the mode of data collection) as major sources of inaccurate and inconsistent data. In Census 2000, the coverage reinterview failed to identify a large fraction of the duplicate enumerations in the census (see Decennial Census Coverage Topic A.2) due to inaccurate measurements of Census Day residency. In 2000, the percentage of Hispanics reporting their race as White was 48% in the census and 63% in C2SS, perhaps due to differences in survey mode and interviewer training. Subtle and untested changes in the Hispanic-origin question in Census 2000 led to loss of detailed origin information for about 12% of Hispanics in the mailout universe.

### **Discussion**

The errors can be very large, and their origins are not always well understood. Very large and poorly understood discrepancies undermine the credibility of census data more broadly.

Many questionnaire design flaws that give rise to measurement errors can be identified and corrected through pretesting. (For example, the flaws in the Hispanic origin question in Census 2000 would probably have been caught had the final version been cognitively tested.) Research to evaluate and improve pretesting methods is needed to support the Census Bureau's policy of testing all questionnaire changes. Basic research is needed to better understand sources of measurement errors. For example, why were moves and second residences unreported and/or unreliably reported in coverage reinterviews? It is necessary to understand the reasons for such errors, in order to correct them.

- 1) Carry out research on the sources and magnitude of measurement errors:
  - a) Evaluate data quality, through regular compilation of data quality indicators (e.g., item nonresponse rates), regular or special evaluations (reinterview, record check studies), and studies of respondent difficulties and misinterpretations (e.g., cognitive interviews, respondent debriefing studies).

- b) Evaluate effects of mode of data collection on quality and comparability of survey data in order to develop guidelines for standardizing survey instruments across modes.
  - c) Conduct research on fundamental sources of survey measurement problems (e.g. recall error), drawing on theory and methods in relevant scientific disciplines, such as psychology and linguistics (see also Topic J).
- 2) Conduct developmental research and methodological studies to support measurement error reductions through improved questionnaire design and procedural improvements:
- a) Develop and qualitatively test questionnaire revisions designed to solve the problems identified in step (1).
  - b) Conduct field experiments to evaluate solutions.
  - c) Develop translation methods and protocols.
- 3) Evaluate and further refine questionnaire pretesting methods.

Several benefits would follow if the Census Bureau were to solve this problem. The Census Bureau could produce more complete, consistent, and higher quality data, with less time and cost devoted to editing and review (See Topic D, Editing Economic Surveys, and Topic E, Pre-Release Review of Demographic Data). A better understanding of the nature and causes of measurement error would support development of improved statistical estimates and better data collection instruments and techniques. It would also help avoid the major data problems that now cause occasional embarrassment, and (when they still occur) would help the Census Bureau to explain them more credibly.

#### **RESEARCH TOPIC H: RESEARCH ON TIME SERIES METHODS AND SEASONAL ADJUSTMENT**

##### **Problem/Discussion**

Currently the Census Bureau's Economic Directorate collects data for more than 1,400 monthly and quarterly economic data series, and uses time series analysis methods for seasonal adjustment of over 1,000 of them. However, time series analysis and modeling techniques could also be employed for other purposes, e.g., to assist in editing, imputation and estimation, and to improve the Census Bureau's published measures of statistical uncertainty. Research in the following areas, while not motivated by what are presently perceived as major problems, nevertheless represent opportunities for improvement that could help the Census Bureau save time and effort and improve the quality of published estimates. For most of these topics, *the change to current Census Bureau procedures - implementation - poses a greater challenge than does doing the research*. Also, for these topics it is generally not possible to estimate the extent of the benefits without further exploratory trials or research.

- 1) Compare time series forecasts with tabulated data for the most recent period to identify values that may require an edit response. This may reduce the tremendous labor cost currently required for editing to maintain economic data quality. This approach has been implemented in the Foreign Trade Division (FTD) and the Service Sector Statistics Division (SSSD), but might also be beneficial in other areas.
- 2) Develop statistical measures of uncertainty (e.g., variances or descriptive statistics for revisions) for seasonally adjusted estimates.
- 3) Develop and apply models for sampling error autocovariances, for possible use in such things as improving survey estimates, doing model-based seasonal adjustment, or developing variances of seasonally adjusted estimates.

Topics 2 and 3 are related. Providing measures of uncertainty in the Census Bureau's estimates is very important, but, in most cases, the Census Bureau currently provides variance estimates only for the Census Bureau's original, unadjusted data. Uncertainty measures specifically for the seasonally adjusted data would be more relevant (though research should also investigate how different these would be from those for the unadjusted data).

- 4) Use time series forecasting procedures to address issues with systemic delayed reporting of data. Some work has been done here and at Statistics Netherlands on this topic, but more research is needed.
- 5) Further investigate modeling of and adjustment for time-varying trading-day effects. Close to half of the Census Bureau 1,000+ seasonally adjusted series have trading-day effects, and for some of these series, especially the Service Sector Statistics Division's series, the Census Bureau expects that the trading-day patterns change over time. Crude methods are currently used to deal with this problem. More refined methods based on time series models have shown promise, but more research is needed, including investigation of how prevalent the problem is.

## **RESEARCH TOPIC II: DISCLOSURE AVOIDANCE METHODS**

### **Problem/Discussion**

The Census Bureau wants to protect the confidentiality of its respondents' information, as required by Title 13 of the U.S. Code, while releasing as much high quality data to the Census Bureau's users as possible. In order to do so, the Census Bureau needs to develop new and improved disclosure avoidance methods. For demographic data, the goal is to counter the growing potential to identify individuals based on the expanding amount of personally identified information on the Internet. For economic data, the goal is to reduce the number of table cells that are suppressed. In addition, the Census Bureau is releasing new types of data products such as maps and indices, requiring new disclosure avoidance methods. The Census Bureau should

also document the basis for existing disclosure avoidance methods and evaluate the effects of all of the methods on data quality.

These activities would involve considerable effort because of the vast amount and great variety of data products the Census Bureau releases. This problem is important to the Census Bureau because disclosure protection is required by law, because publicized disclosure could result in decreased response rates, and because disclosure avoidance procedures affect the quality of all of the Census Bureau's data products. Moreover, the Census Bureau promises respondents that the Census Bureau will protect the confidentiality of their information. In short, improved disclosure avoidance methods would benefit the Census Bureau in terms of releasing more high quality data while avoiding disclosure.

## **RESEARCH TOPIC I2: DISCLOSURE METHODS - ECONOMIC**

### **Problem**

The current disclosure avoidance methodology suppresses a significant amount of data. Analysts spend large amounts of time analyzing data that will later be suppressed for public release.

Few staff members in the Economic Directorate understand the disclosure avoidance methodology. The disclosure avoidance computer programs were maintained by one staff member for many years. When this staff member retired, the knowledge of the methodology for these programs was not effectively transferred to existing staff. Little documentation exists for these programs.

The current disclosure avoidance programs are used for the Economic Census, County Business Patterns, and Nonemployer Statistics programs. All three of these programs publish data at smaller geographic areas such as county and/or place. Examples of the amount of suppression include:

- Economic Census, Alabama county data for all sectors: 8,967 rows of 18,419 rows were suppressed - 49%.
- Economic Census, Alabama place data for all sectors: 16,414 rows of 24,875 rows were suppressed - 66%.
- Economic Census, all states, state data for all sectors: 45,107 rows of 150,027 rows were suppressed - 30%.
- Nonemployer Statistics, all states, state, metro area, and county data for all sectors: 900,227 rows were suppressed of 1,387,790 rows - 65%.

Census products are disseminated over a 2 1/2 year span and consist of over 1800 releases with millions of rows of data. The one person with knowledge of the disclosure avoidance program is responsible for planning and implementing disclosure avoidance processing for these releases.

### **Discussion**

The problem is important because:

- The Census Bureau must ensure that data from individual respondents are not disclosed.
- State and local governments and small businesses depend upon detailed geographic data for decision-making.
- Significant resources are expended to analyze data that are never released to the public.
- Documentation is needed for knowledge transfer. Greater knowledge transfer will assist the Census Bureau in ending its dependency on one staff member.

If the Census Bureau solved this problem, greater customer satisfaction would result from the availability of more data, and the Census Bureau will realize more effective knowledge transfer of disclosure methodology.

**RESEARCH TOPIC J: INVESTIGATION OF LINKS OF CENSUS BUREAU PROBLEMS TO BEHAVIORAL SCIENCE RESEARCH**

**Discussion**

Progress in many of the behavioral sciences has been rapid in recent years. These disciplines include several areas in psychology, cognitive neuroscience, and linguistics. For example, the basic science in memory, language, attitudes, and affect has each progressed far beyond the understanding of these areas by most statisticians and survey methodologists. The value of basic science in memory seems self-evident, but the scope of current results and open questions-familiar to readers of *Science*, *Nature*, and a large number of neuroscience and psychological journals-appear virtually unknown to survey researchers. Although sociolinguists are represented in small numbers in survey research, the Census Bureau lacks a critical number of researchers who can represent the current findings from the study of syntax, linguistic pragmatics, or psycholinguistics. Social and cognitive psychologists are revising the conceptual understanding of attitudes, but the implications of these changes appear unrecognized by survey researchers. Advances in the study of affect now touch many other areas of psychology, including cognitive psychology.

Incorporating new knowledge from these fields could potentially improve the Census Bureau's censuses and surveys. Development of more coherent theory (e.g., of survey response or of recall failure in surveys) may be furthered if survey methodologists are exposed to the scope of relevant developments in the behavioral sciences. "Building a bridge to the behavioral sciences" may help the Census Bureau realize some of the potential benefits to its work from the recent developments in these fields. Several suggestions are offered:

- 1) Develop models more closely aligned with current behavioral science, and test the models using past data or new experiments.
- 2) Current survey research staff (particularly younger staff), especially those in the behavioral sciences or related disciplines, may be encouraged to keep up in their fields and read in some related disciplines. This could be enhanced by making modest investments in appropriate books and key journals for the library, and by



- encouraging staff to write papers or present informal talks reviewing relevant developments in the behavioral sciences.
- 3) Fund outside researchers in the behavioral sciences to work on problems relevant to the Census Bureau's applications. This is more likely to be successful if the outside researchers have agency collaborators who already have a working knowledge in the same field.

## **RESEARCH TOPIC K: RESEARCH TO IMPROVE POPULATION ESTIMATES**

### **Problem**

Discrepancies noted in comparisons of population estimates to Census 2000 results identified the need to improve the annual estimates of international and internal migration. In addition, the use of detailed annual population estimates as controls on estimates from the American Community Survey (ACS) imposes new requirements on the population estimates. This research will examine alternative data sources and improved use of the American Community Survey data to estimate international and internal migration.

### **Discussion**

Increased use of detailed population estimates as the basis for funding mechanisms and as controls for the American Community Survey has led to increasing scrutiny on the data, methods and results of the detailed population estimates, especially in the most vulnerable areas of international and internal migration. If these identified issues continue to remain unresolved, the reputation of the overall Census Bureau will be affected.

- 1) The proposed research on international migration will focus on measuring the annual inflow of migrants to the United States, using selected data from the annual ACS. Estimating the annual outflow of migrants from the United States requires research into the development and validation of new methods combining statistical modeling with demographic data sources. Research on internal migration will focus on integrating new data sources and statistical modeling to identify and reduce bias inherent in the current methods to measure internal migration.
- 2) Research is needed on measuring population on a current residence basis and on developing models to reconcile the current residence population with the usual residence population.
- 3) Research will examine bringing additional data sources into the subnational population estimates. These sources will include the ACS, but might also include administrative sources on employment and taxes.
- 4) Research is needed on improved methods to achieve integrated and consistent population estimates at different levels of geography. The current approach begins at the county level, with the estimates controlled only at the national level. Control at other levels and a more integrated approach are possible.

Improvements in the annual measurement of international and internal migration will lead to improved population estimates and survey controls, which can improve estimates from numerous demographic surveys, especially the American Community Survey. This would enhance the overall quality of Census Bureau products and the agency's reputation.

### **2.3.2 Services at the U.S. Census Bureau**

The candidates shall work with the Census Bureau staff on-site at the Census Bureau on matters relating to the proposed solutions to the problems. The services will be provided over a period of one to two months. In this capacity the candidates shall:

- Gain an understanding of the problem(s);
- Gain an understanding of current methodology to address the problem and its limitations; and
- Gain an understanding of related subject-matter data.

### **2.3.3 Presentations at Seminars**

The candidates shall present their final findings at seminars for each topic. For each topic there will be a need for the candidate to present his/her findings at one (1) seminar. The seminars will be part of a one-day visit at the Census Bureau. In addition to the seminar, there will be session(s) with the staff of the Census Bureau to discuss specifics of the research results.

## **2.4 DELIVERABLES**

The Institution shall provide the following deliverables to the Government at:

<b>Address</b>	
Name	Kelly Taylor
Address:	Dissertation Fellowship Program U.S. Census Bureau Statistical Research Division Room #3203, Building #4 4700 Silver Hill Road Washington, DC 20233-9100
Phone	(301) 763-4896

### **2.4.1 Status Reports**

On a semi-annual basis, the Institution shall submit a progress report to the Census Bureau for each of the awarded delivery orders. The Institution shall provide a progress report to the Contracting Officer's Task Manager through the point of contact listed in 2.4 above for each of the awarded delivery orders. The report shall be delivered no later than the 10<sup>th</sup> business day

after the end of the previous six (6) month period of the delivery order, and shall include the following sections:

Section I – Delivery Order Number, Task Title, Name of Institution’s point of contact for the task, and the name of candidate assigned to the task.

Section II - Status of the candidate’s efforts, problems encountered during the previous six months, and proposed or implemented solutions.

Section III - Other applicable issues.

#### **2.4.2 Research Findings/Report(s)**

The Institution shall submit a final report to the Government on its research findings/solutions for each research topic. The process shall consist of the following:

- Softcopies of the draft reports shall be submitted to government representative Ms. Kelly L. Taylor at [kelly.l.taylor@census.gov](mailto:kelly.l.taylor@census.gov) on the dates agreed to by the Government and Institution. The reports shall be submitted in softcopy only in Microsoft Word or WordPerfect.
- The Government will review the draft of the reports, and will inform the Institution of its findings within twenty-one (21) days from the receipt of the reports from the Institution
- The final report submissions shall consist of an original report in paper form, and one (1) hardcopy, and one (1) softcopy of the reports. The reports shall be in Microsoft Word or WordPerfect.
- The final report shall be submitted to the Contracting Officer’s Task Manager through the point of contact listed in 2.4 above for each of the awarded delivery order(s).
- The final report shall be submitted to the Government on the dates indicated in the delivery orders.

The final report shall consist of:

- A cover letter from the Institution; and
- A final version of the candidate’s dissertation in the format common to Institutions of Higher Education (one original, one hardcopy, and one softcopy in Microsoft or WordPerfect).

**2.5 QUALIFICATIONS OF THE CANDIDATE**

The offered candidate(s) must meet the following qualifications:

- Be a doctoral candidate or an exceptionally strong master’s candidate;
- Be enrolled full-time and be in residence at the Institution;
- Be in the general fields of research related to statistics and demography. Direct connections of proposed research to the cited listing of research topics is essential;
- Be able to devote sufficient time to the project to ensure all requirements are met in accordance with the agreed to schedule; and
- United States citizenship preferred, but not limited to United States citizens. (However, candidate must satisfy security requirements to fulfill applicable requirement that candidate collaborate on-site with Census Bureau staff for one to two months.)

**2.6 TRAVEL AND OTHER DIRECT COSTS**

The Government expects all costs for travel and other direct costs to be included in the fixed price offered by the Institution for each delivery order. However, if justified by the Institution, and for unusual circumstances, the Government will consider additional costs.

Travel shall be made in accordance with the Joint Travel Regulation.

**2.7 PERFORMANCE REQUIREMENTS SUMMARY**

Listed below are the requirements to be met by the Institution(s) for each delivery order:

<i><b>Performance Requirement</b></i>	<i><b>Expected Outcome</b></i>	<i><b>Performance Standard</b></i>	<i><b>Method of Surveillance</b></i>
Candidates are well qualified and knowledgeable of the subject matter.	<i>Candidates must be knowledgeable in the fields of research related to statistics and demography.</i>	<i>The candidates offered must be fulltime doctoral/masters students majoring in the required fields of study.</i>	Monitored by the Task Manager
Academic advisors are well qualified and knowledgeable of the subject matter.	<i>Academic advisors must be knowledgeable and skilled.</i>	<i>The academic advisors must always be knowledgeable and skilled.</i>	Monitored by the Task Manager
Research results successfully address the problems.	<i>Candidates will use their knowledge in the fields of research related to statistics and demography to perform research and document plausible solutions.</i>	<i>Results will always be fully documented.</i>	Monitored by the Task Manager

Research results are submitted on a timely basis in a professional format.	<i>Research results and status reports will be delivered no later than the dates set forth in each delivery order.</i>	<i>Results will be submitted on time 100% of the time.</i>	Monitored by the Task Manager
Candidate(s) presents the research results at a Census Bureau seminar in a professional and well-informed manner.	Presentations will be of a professional quality that presents the subject matter in a clear, concise, and easily understood manner.	Presentations will be performed in a professional and well-informed manner 100% of the time.	Monitored by the Task Manager

**2.8 GOVERNMENT-FURNISHED RESOURCES**

The Census Bureau will provide the Institution’s candidate with the following:

<b>DESCRIPTION OF GOVERNMENT PROVIDED RESOURCES</b>	<b>DATE TO BE DELIVERED</b>	<b>SPECIAL INSTRUCTIONS</b>
<i>Access to government facilities, and the use of equipment, i.e. desk, phone, CPU, etc.</i>	At the time the delivery order(s) is awarded.	Access is subject to Contractor complying with security requirements, and approval by the Government.
<i>Access to government representatives who are involved in the project.</i>	At the time the delivery order(s) is awarded.	None

**2.9 SECURITY**

The Institution shall abide by the security procedures set forth by the Government. The Task Manager will be the point of contact for guidance about security requirements.

**2.10 FUNDING**

Issuance of delivery orders will be subject to the availability of funds in accordance with Federal Acquisition Regulation Clause 52.232-18.

**2.11 INVOICING**

Invoices shall be submitted in accordance with the instructions set forth in Attachment A to this RFQ.

**2.12 PURCHASE ORDER CLAUSES**

**FAR 52.252-2. CLAUSES INCORPORATED BY REFERENCE (FEB 1998)**

The contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this address:

<http://www.arnet.gov/far>

FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1) CLAUSES

- 52.203-5 Covenant Against Contingent Fees (ARP 1984)
- 52.203-6 Anti-Kickback Procedures (JUL 1995)
- 52.204-3 Taxpayer Identification (OCT 1998)
- 52.204-4 Printed or Copied double-Sided on Recycled Paper (AUG 2000)
- 52.214-3 Amendments to Invitations to Bids (DEC 1989)
- 52.214-4 Terms and Conditions – Simplified Acquisitions (Other than Commercial Items (JAN 2005)
- 52.223-6 Drug Free Workplace (MAY 2001)
- 52.227-17 Rights to Data – Special Works (JUN 1987)
- 53.232-18 Availability of Funds (APR 1984)
- 52.233-3 Protest After Award (AUG 1996)
- 52.243-1 Changes – Fixed Price (AUG 1987)
- 52.245-2 Government Property (Fixed Price Contracts (JUN 2003)
- 52.246-1 Contractor Inspection Requirements (APR 1984)
- 52.247-34 F.O.B. Destination (NOV 1991)
- 52.249-1 Termination for Convenience of the Government (Fixed Price) (Short form) (APR 1984)

**SECTION 3  
TERMS AND CONDITIONS**

**3.1 The Contracting Officer's (CO's) Contact Information and Modification Authority**

<b>Address</b>	
Name	Valeria F. Baker
Address:	U.S. Census Bureau 4700 Silver Hill Road Room G-314, FB 3, Mail Stop 1700 Washington, DC 20233-1700
Phone	(301) 763-3396
Fax	(301) 457-8465
Email	valeria.f.baker@census.gov

**Modification Authority:** Notwithstanding any of the other provisions of this purchase order, the CO shall be the only individual authorized to:

1. Accept nonconforming work
2. Waive any requirements
3. Modify any terms or conditions

**3.2 Task Manager (TM) - Contact Information and Responsibilities**

**Contact Information**

Name Dr. Tommy Wright – Chief, Statistical Research Division  
Address U.S. Census Bureau, Room #3203, FB-4, Washington, DC 20233  
Phone (301) 763-1702  
Fax (301) 457-2299  
Email tommy.wright@census.gov

**Responsibilities:** Performance of work under the delivery orders shall be subject to technical direction of the task manager. The term “technical direction” is defined to include:

- Directions to the Institution, which provide clarification of the requirements described in the statement of work.
- Inspection and acceptance of deliverables.

**3.3 Progress Payments**

The delivery orders may allow for progress payments in accordance with Federal Acquisition Regulation (FAR) Clauses 52.232-16 and 32.501-1. The progress payments will be negotiated for each delivery order.

### **3.4 Responsibilities of the Institution**

The Institution awarded the delivery order(s) shall be held responsible for the procurement of all services required under the issued delivery order(s). The Institution alone shall be held responsible by the Government for the performance of all obligations under any terms of the delivery orders resulting from their quotations. The Government, in turn, shall render all payments due for services performed solely to the Institution.



**SECTION 4  
ACQUISITION PROCESS AND TIMELINE**

**4.1 Explanation of Steps in Acquisition Process**

**4.1.1 Release RFQ**

The request for quotations (RFQ) and any amendments to the RFQ will be posted to the Acquisition Division's website at <http://www.census.gov/procur/www/solutions>.

**4.1.2 Submission of and Responses to Comments, Suggestions and Questions from Institution About RFQ**

Comments, Suggestions, and Questions concerning the technical aspects of this RFQ shall be submitted to the following point of contract:

Name      Dr. Tommy Wright – Chief, Statistical Research Division  
Address    U.S. Census Bureau, Room #3203, FB-4, Washington, DC 20233  
Phone      (301) 763-1702  
Fax         (301) 457-2299  
Email      tommy.wright@census.gov

Comments, Suggestions, and Questions concerning the contractual aspects of this RFQ shall be submitted to the Contracting Officer through Abe Kennedy (Contract Specialist) via email address [albert.ernest.kennedy@census.gov](mailto:albert.ernest.kennedy@census.gov) or at telephone number 301/763-4420.

**4.1.3 Submissions of Quotations**

Institution(s) shall prepare their quotations in accordance with the instructions in Section 5 of this RFQ.

**SECTION 5  
QUOTATION PREPARATION INSTRUCTIONS**

**5.1 Quotation Preparation Instructions**

Institutions shall prepare their quotations/application materials in accordance with the instructions outlined in this section.

There is no deadline for submission of the quotations. If a deadline is added or other changes are made, they will be posted to the Acquisition Website at <http://www.census.gov/procur/www/solutions>.

**5.2 Submission of Quotations/Application Materials**

Deliver a total of two (2) originals and one (1) softcopy of the quotations as indicated below:

One (1) original and one (1) softcopy of the entire quotation to the Contracting Officer through Mr. Kennedy at the below address:

**Address**

Name	Albert E. Kennedy
Address:	U.S. Census Bureau Acquisitions Division 4700 Silver Hill Road Room G-314, FB 3, Mail Stop 1700 Washington, DC 20233-1700
Phone	(301) 763-4420
Fax	(301) 457-8465
Email	albert.ernest.kennedy@census.gov

One (1) original of the entire quotation to:

**Address**

Name	Kelly Taylor
Address:	Dissertation Fellowship Program U.S. Census Bureau Statistical Research Division Room #3203, Building #4 4700 Silver Hill Road Washington, DC 20233-9100
Phone	(301) 763-4896

**5.3 Contents of Proposal**

**5.3.1 General**

The Institution shall submit its Technical/Cost & Business quotations in single three ring binders (Binder for each original and copy). Tabs shall be used to distinguish between the technical/cost quotations, and the subtasks under each quotation. Included with the quotations shall be a letter of submission, signed by an authorized representative of the Institution.

### **5.3.2 Coversheet for Binder**

A cover for each binder is required, and shall include:

- The title of the project – “Services in Support of the U.S. Census Bureau’s Dissertation Fellowship Program”
- Name and address of Institution
- Date of submission
- The Request for Quotation Number – YA1323-RFQ-06-0802

### **5.3.3 Technical Proposal (Application Package)**

The technical quotation shall consist of the following information under the indicated tabs:

Tab 1 – A submission cover letter from the Institution, typically from the department chair of the doctoral candidate being proposed. Also include a signed Standard Form 18.

Tab 2 – Dissertation proposal of doctoral candidate or very well qualified master’s candidate. [The proposal must include a timeline for completing the dissertation research, including title, abstract, specific problem(s) being studied that relates to the research topics, approach, expected result(s), relevant bibliography, and name and position of faculty advisor. (Proposal shall be limited to five (5) pages, double-spaced.)]

Tab 3 – A curriculum vitae of the doctoral candidate or very well qualified master’s candidate. (Names of all institutions attended, years attended, degrees received, list of any honors, awards, fellowships, employment, publications, and contact information.)

Tab 4 – A curriculum vitae of the faculty advisor.

Tab 5 – Signed statement from faculty advisor and department chair confirming that applicant is a doctoral candidate.

### **5.2.4 Cost Proposal/Business Information**

Tab 1 – Proposed firm fixed price for services (Estimate of labor, travel, materials).

Tab 2 – Proposed progress payment schedule.

***Tabs 3 and 4 - The requested information is needed prior to contract award and payment of invoices.***

Tab 3 - Vendor Registration Form – Complete and provide the attached vendor registration form (Attachment B).

Tab 4 - Ensure Institution is registered in the Central Contractor Registration System (CCR) as required by the attached Department of Commerce letter, dated September 3, 2003 (Attachment C). Provide statement that institution is registered.

**SECTION 6  
EVALUATION FACTORS AND BASIS FOR AWARD**

**6.1 Basis for Award**

The Government intends to award multiple delivery orders for the services. Each technical proposal will be evaluated to determine the qualifications of the Institution and candidate. Each cost proposal will be evaluated to determine whether the proposed cost is fair and reasonable.

**6.2 Evaluation of Technical and Cost Proposals**

**6.2.1 Evaluation of Technical Proposal(s)**

The Government will evaluate the proposal(s) to:

- Determine the quality of the proposed research program as it compares with other work being conducted in a similar research field.
- Determine if the Institution has the capabilities to provide a research candidate and a successful oversight and management system.
- Determine if the proposed research program focuses on at least one of the problems listed among the Census Bureau's Research Topics.
- Determine whether the proposed research being performed is at the forefront of scientific knowledge.
- Determine the quality of the research record in the relevant field of the dissertation advisor.
- Determine the quality of the academic record in the relevant field of the doctoral (or master's) candidate.

**6.3.2 Evaluation of Cost Proposal**

The Government will evaluate the Institution's price proposal(s) to determine if they are realistic for the work to be performed, reflect a clear understanding of the requirements, and are consistent with the technical proposal.

# **ATTACHMENT A**

## **INSTRUCTIONS FOR SUBMITTING INVOICES TO THE U.S. CENSUS BUREAU**

The Federal Register, Page 52591, Volume 64, No. 188, dated September 29, 1999, requires that submitted invoices must include specific information in order for the Government to make payment. Additionally, the U.S. Census Bureau has supplemented these requirements. Contractors may use Standard Form 1034 – Public Voucher for Purchases and Services Other than Personal (Part 53 of the Federal Acquisition Regulation under FAR 53-301-1034) or they may submit a company generated voucher. However, no matter what type of voucher is submitted, it must contain the information described below.

### **PROPER INVOICE INFORMATION**

- ◆ Name and Address of Contractor
- ◆ Contact Name, Title and Telephone Number
- ◆ Government Contract Number or Other Authorization for Delivery of Goods or Services
- ◆ Government Task Order Number is required if services are being provided through a task order to the basis contract
- ◆ Date of the Invoice
- ◆ Invoice Number, Account Number, and/or any other identifying number agreed to by the contract (At a minimum there must be an invoice number)
- ◆ Include the Actual date when services were performed or goods delivered.
- ◆ Include the Period of Performance on all invoices.
- ◆ Description – Including, for example, contract line/subline number, price, and quality of goods and services rendered.
- ◆ Include discount terms.
- ◆ Other substantiating documentation or information required by the contract.
- ◆ Shipping and Payment Terms (Required unless mutually agreed that this information is only required in the contract – Contact the Contracting Officer or Contract Specialist for clarification)

- ◆ Taxpayer Identifying Number (TIN) (Required unless agency procedures provide otherwise.)
- ◆ Address for mailing payment
- ◆ Banking Information such as name and address of bank, routing & account number (Required unless agency procedures provide otherwise, or except in situations where the EFT requirements is waived under 31 CFR, 208.4.) (This information is seldom required, check with the Contracting Officer or Contract Specialist to determine if information is needed.)
- ◆ Other Substantiating Documentation or Information required by the contract

There will also be three statements and signature lines included in the invoice. The wording for these statements are:

I hereby certify, to the best of my knowledge and belief, that the services set forth herein were performed during the period stated above are current, accurate and complete.

\_\_\_\_\_  
 (Date)                      (Title of Contractor Representative)                      (Signature)

***The above statement will be signed by a representative of the Contractor.***

**and**

I certify that to the best of my knowledge and belief that the services/supplies shown on the invoice have been performed/furnished and are accepted.

\_\_\_\_\_  
 (Date)                      (Title: COTR, Task Manager, etc)                      (Signature)

***The above statement will be signed by a government representative, usually the COTR or a Task Manager with authority to certify.***

**and**

Pursuant to authority vested in me, I certify that this voucher is correct and proper for payment.

\_\_\_\_\_  
 (Date)                      (Authorized Certifying Official)                      (Title)

***The above statement will be signed by a government representative who has authority to approve the invoice. The representative signing this statement will be the Contracting Officer when the services are acquired through a fully definitized contract,***



*or the COTR or Task Manager with approving authority if the work is authorized through the simplified acquisition system (purchase order).*

If there is insufficient space in the Standard Form 1034 to provide all of the required information, the Contractor may include the remaining information on bond paper. However, if bond paper is used, the contract and task order numbers, invoice number, and date of invoice must be listed at the top of the second and subsequent pages.

**An original plus one copy of the voucher will be submitted to:**

U.S. Census Bureau  
Finance Division (Vouchers)  
4700 Silver Hill Road, Stop-4400  
Washington D.C. 20233-4400

Some Contractors submit a copy of the voucher to the COTR or Task Manager. However, these government representatives are not required to forward the invoice to Finance nor should they sign the voucher until it routed through Finance.

# **ATTACHMENT B**



FORM **BC-1851(ef)**  
(11-19-2002)

U.S. DEPARTMENT OF COMMERCE  
Economics and Statistics Administration  
U.S. CENSUS BUREAU

## VENDOR REGISTRATION FORM

**URGENT**

### REQUESTING SECTION INFORMATION (For Internal U.S. Census Bureau Use Only)

Division/Section Name	<input type="checkbox"/> Hospital Discharge Survey <input type="checkbox"/> Other – <i>please state name:</i>	<b>VENDOR NO:</b>
Requestor's name	Telephone No.	
Supervisor's signature	Date	Time

**VENDOR:** If you have signed any type of agreement to do business with and receive payment(s) from the U.S. Census Bureau, you are a Census Vendor and must be registered with the Census Bureau (BOC). The purpose of this form is to provide the Census Bureau with mandatory award and payment information for your company. This information is required as set forth in FAR 52.232-33, *Mandatory Information for Electronic Funds Transfer Payment*, the Debt Collection Improvement Act of 1996, and the Taxpayer Relief Act of 1997. The FAR Subpart 19.202-5 *Data Collection and Reporting Requirements* requires collection of small and disadvantaged business information. The BOC will use the information provided on this Form only for the purposes stated in the references cited above and will restrict access to the data to authorized personnel. If a question does not apply to your organization, write **N/A** (Not Applicable) in that box.

**Please Mail or Fax a Completed Vendor Registration Form (VRF) and Internal Revenue Service (IRS) Form W-9 to the address indicated below:**

Division/Section \_\_\_\_\_

Name \_\_\_\_\_ / \_\_\_\_\_

Telephone No./Fax No. \_\_\_\_\_

Table Maintenance Team (TMT)  
U.S. Census Bureau, Room 3574, FOB 3  
Washington, DC 20233-4400

VOICE: (301) 457-1213  
FAX: (301) 457-4722

#### 1. VENDOR PURCHASING INFORMATION

#### 2. VENDOR PAYMENT INFORMATION

<b>a.</b> Full Legal Name of Company/Organization or Individual			<b>h.</b> Full Legal Name of Company/Organization or Individual		
<b>b.</b> Acronym/shortened version of Company/Organization or Individual			<b>i.</b> Acronym/shortened version of Company/Organization or Individual		
<b>c.</b> Address			<b>j.</b> Address		
<b>d.</b> City			<b>k.</b> City		
<b>e.</b> State	ZIP Code	Country	<b>l.</b> State	ZIP Code	Country
<b>f.</b> Contact name			<b>m.</b> Contact name		
<b>g.</b> Telephone No.	Fax No.		<b>n.</b> Telephone No.	Fax No.	

### 3. VENDOR BUSINESS INFORMATION

<p><b>a. Mark appropriate box:</b></p> <p><input type="checkbox"/> New Vendor Registration  <input type="checkbox"/> Updated Vendor Information</p> <hr/> <p><b>b. Legal Entity Type – Mark (X) one:</b></p> <p><input type="checkbox"/> Individually Owned/Sole Proprietorship  <input type="checkbox"/> Partnership  <input type="checkbox"/> Corporation/Non-Profit Corporation</p>	<p><b>d. Category</b> – If you chose "Small Disadvantaged Business" or "Other Small Business" from the <b>Vendor Type</b> list, please select the category(s) that apply:</p> <p><input type="checkbox"/> Woman Owned Business  <input type="checkbox"/> Minority Owned Business</p>
<p><b>c. Vendor Type</b> – What type of Vendor is your company/organization – <i>Mark (X) one:</i></p> <p><input type="checkbox"/> Small Disadvantaged Business  <input type="checkbox"/> Other Small Business  <input type="checkbox"/> Large Business  <input type="checkbox"/> JWOD Non-Profit Agency  <input type="checkbox"/> HUBZone Small Business Concern  <input type="checkbox"/> Educational Institution  <input type="checkbox"/> Hospital  <input type="checkbox"/> Non-Profit Organization  <input type="checkbox"/> State/Local Government  <input type="checkbox"/> Foreign Contractor  <input type="checkbox"/> Domestic Contractor Performing Outside United States  <input type="checkbox"/> Historically Black Colleges &amp; Universities/Minority Institution (HBCU/MI)  <input type="checkbox"/> Federal Government*</p> <p>*Federal Agency Code (FAC) _____</p>	<p><b>e. DUNS (Data Universal Numbering System)</b></p> <p># _____</p> <hr/> <p><b>f. Freight On Board (FOB) point:</b></p> <p><input type="checkbox"/> Shipping point  <input type="checkbox"/> Destination</p> <hr/> <p><b>g. Individual/Sole Proprietorship SSN or TIN:</b></p> <hr/> <p><b>h. Corporation/Partnership TIN, FEIN, or EIN:</b></p> <hr/>

### 4. VENDOR PAYMENT METHOD

<p><b>a. Select payment method:</b></p> <p><input type="checkbox"/> EFT* (Electronic Funds Transfer)  <input type="checkbox"/> IPAC (Intra-Governmental Payment and Collection)</p> <p><i>* The Debt Collection Act of 1996 <b>mandates</b> the use of Electronic Funds Transfer (EFT) for all Federal payments after January 1, 1999. If you or your organization are not able to receive payments by EFT, you must contact the Table Maintenance Team to obtain a Waiver Application. Please note that your application is subject to approval and your payment may be delayed.</i></p>	<p><b>b. All of the following information is required for EFT:</b></p> <p>1) Financial Institution Name          _____</p> <p>2) Name on Account          _____</p> <p>3) ABA (American Bankers Association) bank routing number (<b>MANDATORY</b> 9-digit #):          _____</p> <p>4) Type of Account:</p> <p><input type="checkbox"/> Checking # _____</p> <p><input type="checkbox"/> Savings # _____</p>
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### 5. CERTIFICATION

Under penalties of perjury, I certify that the information I have provided on this form is correct.

Signature	Print or Type Name
Title	Date

# **ATTACHMENT C**



UNITED STATES DEPARTMENT OF COMMERCE  
Chief Financial Officer  
Assistant Secretary for Administration  
Washington, D.C. 20230

SEP 3-2003

Dear Department of Commerce Vendor;

**DOC IS MOVING TO IMPLEMENT THE CENTRAL CONTRACTOR REGISTRATION (CCR) SYSTEM**

Consistent with the President's principles for a citizen-centered, results-oriented and market-based Government, the U.S. Department of Commerce is taking steps to streamline and improve our vendor data. This is part of a Federal E-Government initiative known as the Integrated Acquisition Environment. We will be partnering with the Department of Defense Electronic Business Program Office to use the Central Contractor Registration (CCR) system. This improvement will put vendors, like you, who do business with DOC and other Government agencies, in charge of supplying and updating all the data that the Government uses for contract payment purposes. CCR registration will ensure current and accurate vendor data which will facilitate timely payments.

**By October 1, 2003, all vendors that do business with Commerce and the Federal Government must be registered in CCR. We strongly encourage all vendors to register with CCR now to avoid any bottlenecks as the September 30, 2003 deadline approaches.**

Proposed changes to the Federal Acquisition Regulation (FAR) will require, among other things, that contractors be registered in the CCR before award of any contract, basic agreement, blanket purchase agreements, or basic ordering agreement can be made, and that contract payments and/or new awards will be conditioned on CCR registration. The proposed FAR change will also require that contractors with existing contracts that require performance after September 30, 2003, register in the CCR. There are 5 exceptions to the CCR registration requirement, including purchases that use the government-wide purchase cards as the purchasing mechanism, certain emergency operations and urgent procurements, certain purchases where CCR registration could jeopardize national security, and awards to foreign vendors for work performed outside the United States. The proposed FAR change may be viewed on the CCR website at <http://www.ccr.gov>.

The CCR system is intended to be a highly secure, single repository of vendor data. Vendor registration will provide common data in one central location via a simple web application accessed by a web browser. You only need to register once. You control the accuracy of your business information and it will be accessible to all Federal agencies with which you do business. You have access to update your information whenever necessary. Annual renewal is required to remain active. There is no cost to register in CCR.

DOC will use your CCR registration data for payment and contract formation purposes. CCR registration will include your electronic funds transfer (EFT) data. This will expedite your contract payments and assist DOC in complying with the mandate that all Federal payments be made by EFT (Debt Collection Improvement Act of 1996).

The preferred method for completing a registration is via the World Wide Web at <http://www.ccr.gov>. There, a CCR Handbook is available to provide detailed information on data you will need prior to beginning the on-line registration, as well as steps to walk you through the registration process. You must have a DUNS number in order to begin your registration. If you do not already have a DUNS number, please call Dun & Bradstreet, Inc., at 1-866-705-5711 or 610-882-7000. There is no cost to obtain a DUNS number.

The average CCR registration takes approximately 48 hours to process. You will be sent a welcome letter once your registration becomes active. Additionally, the individual you indicate as your CCR point of contact will receive your company's Trading Partner Identification Number (TPIN) through the U.S. mail. This TPIN is very important, because any subsequent changes you wish to make to your registration, including the annual renewal process, will require entry of your TPIN along with your DUNS number.

The Department cautions vendors that we will not be sending you any supplemental or extraneous correspondence related to your CCR Registration (e.g., requests to verify your TPIN or DUNS numbers) or requests for any other company information. If you receive any such requests via regular mail or fax, they should be disregarded. They may be from an unauthorized source attempting to gather your company's proprietary business information. Your TPIN number is a confidential password into your company's CCR information and should not be given to anyone. Please be assured that once you have completed your registration in CCR, the Department will have access to all the information it will need to do business with your company. The CCR website at <http://www.ccr.gov> has posted a Security Alert for all vendors to read. If you feel that your company's CCR number has been compromised, please have your CCR Point of Contact call the CCR Helpdesk at 888-~~277~~-2423 to request a new one. **227**

The Department appreciates your prompt cooperation in registering in the CCR system. We look forward to partnering with you in this important Government-wide initiative to streamline and simplify contractor payments.

Sincerely,



Michael S. Sade  
Director Acquisition Management and  
Procurement Executive