

# THE NATIONAL ACADEMIES

National Academy of Sciences  
National Academy of Engineering  
Institute of Medicine  
National Research Council

Panel to Review the 2000 Census  
Committee on National Statistics  
Division of Behavioral and Social Sciences and Education

November 26, 2001

Mr. William Barron  
Acting Director  
U.S. Census Bureau  
Washington, D.C. 20233

Dear Mr. Barron:

This letter from the Panel to Review the 2000 Census comments on the Census Bureau's October 17, 2001, decision that unadjusted data from the 2000 census enumeration process should be used for the allocation of federal funds and other purposes. This decision follows an earlier decision by the Bureau on March 1, 2001, that unadjusted census counts should be used for redrawing congressional district boundaries. The Bureau released extensive evaluation materials to accompany both decisions.<sup>1</sup>

In our interim report, we concluded that the 2000 census was well executed in many respects although—like every census—there were some problems (National Research Council, 2001). The latest set of Census Bureau evaluations make it clear that there were considerably more errors of overcounting in the census than were originally estimated by the Accuracy and Coverage Evaluation (A.C.E.) Program.<sup>2</sup> These evaluations—while not yet complete—suggest that because the A.C.E. did not identify a substantial number of these overcounting errors (mostly duplicates), the use of the original A.C.E. data to adjust the census could lead to overstating the population. Accordingly, the panel concludes that the Census Bureau's decision not to adjust the census at this time is justifiable. However, the panel urges the Bureau to complete the research necessary to develop reliable revised estimates of the net coverage errors in the census, particularly for population groups, in order to determine whether their use would improve the Bureau's population estimates that are regularly produced during the postcensal period.

## BUREAU DECISIONS

The Census Bureau decided in March not to use the results of the A.C.E. to adjust the census redistricting data, citing two principal reasons (Executive Steering Committee for A.C.E. Policy, 2001b).<sup>3</sup> First, the Bureau identified discrepancies between the population estimates from the census, the A.C.E., and demographic analysis that it could not reconcile by the time (April 1) when redistricting data were required by law to be provided to all the states. Second, the Bureau identified possible problems in the A.C.E. The panel concluded in its interim report that the Bureau's decision was justifiable (National Research Council, 2001:15).

<sup>1</sup>The Bureau's evaluations are available at <http://www.census.gov>.

<sup>2</sup>The A.C.E. was designed to provide the basis for an adjustment of the census for net population undercount through dual-systems estimation. Our panel is charged to review the statistical methods of the 2000 census, particularly the use of the A.C.E. and dual-systems estimation, and other census procedures that may affect the completeness and quality of the data. See attached copy of charge to the panel.

<sup>3</sup>The Executive Steering Committee for A.C.E. Policy (ESCAP) is comprised of senior Census Bureau staff.

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Following its March decision, the Census Bureau accelerated some previously planned longer term analyses and conducted additional evaluations of the census, the A.C.E., and demographic analysis. From these evaluations, the Bureau estimated that the A.C.E. had failed to identify as many as 3-4 million erroneous enumerations in the census (in addition to the 12.5 million that A.C.E. did identify), mostly duplicates. Consequently, the Bureau concluded that the dual-systems estimate of the population was too high and an adjustment using the A.C.E. results as originally calculated would have overstated the population (Executive Steering Committee for A.C.E. Policy, 2001a).<sup>4</sup>

The Census Bureau's evaluations of the A.C.E. covered many other kinds of error, such as errors in conducting the targeted extended search, in identifying matched and nonmatched cases in the independent P-sample, in classifying movers in the P-sample, and in imputing for missing items (see, e.g., Adams and Liu, 2001; Bean, 2001; Keathley, Kearney, and Bell, 2001; Raglin and Krejsa, 2001). In general, the Bureau found that these kinds of errors were either not large or not consequential for the dual-systems estimates, although the treatment of missing data was found to increase the uncertainty of the original A.C.E. estimates.

### PANEL ASSESSMENT OF THE OCTOBER DECISION

The panel reviewed the evaluation studies that were released by the Census Bureau to accompany the October 17 decision, including two papers that were made available on October 26 (Fay, 2001; Thompson, Waite, and Fay, 2001). The panel staff met with Census Bureau staff to ask clarifying questions about the key analyses of unmeasured erroneous census enumerations.

The panel concludes that the Census Bureau's decision that the census data from the enumeration process should be used for nonredistricting purposes, such as fund allocation, was reasonable. It seems apparent that there are sufficient errors in the A.C.E., primarily due to unmeasured erroneous census enumerations, so that the original A.C.E. results could not reliably be used for census adjustment.

It would be desirable for the Bureau to revise the dual-systems estimates for the total population and individual post-strata as quickly as possible to determine if use of the revised estimates would improve the census counts that form the basis of regularly updated postcensal estimates of the population.<sup>5</sup> To date, the Bureau's estimates of erroneous census enumerations not measured in the A.C.E. and the effects on the estimated net undercount are based only on preliminary analyses of small subsets of the A.C.E. data. The panel understands that considerably more research will be needed to produce reliable revised estimates from the A.C.E. and, hence, that such estimates cannot be generated immediately; nonetheless, this research should be carried out as quickly as possible.

### ERRONEOUS ENUMERATIONS

The Bureau has developed rough preliminary estimates of the effects of taking account of the additional erroneous census enumerations not measured in the A.C.E. on the dual-systems estimate for the total population and three major groups. These estimates show a reduction in

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<sup>4</sup>See the panel's interim report (National Research Council, 2001) for explanations of the A.C.E., its two components (the independent P-sample and the E-sample of census enumerations in the A.C.E. sample block clusters), dual-systems estimation, demographic analysis, and other census and coverage evaluation features.

<sup>5</sup>The A.C.E. post-strata comprise 416 population groups (reduced in estimation from 448 originally defined groups) for which separate dual-systems estimates were derived. Post-strata were defined by using age, sex, race/ethnicity, and housing tenure categories and, for some groups, mail return rates, geographic region, and size of metropolitan area and type of enumeration area (National Research Council, 2001:Table 6-2).

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**TABLE 1** Alternative Estimates of Percentage Net Undercount of the Population in the Census from the 2000 Accuracy and Coverage Evaluation (A.C.E.) and the 1990 Post-Enumeration Survey (PES)

Category	2000 Estimates		
	A.C.E. (March 2001) <sup>a</sup>	Revised Early Approximation (October 2001) <sup>b</sup>	1990 PES Estimate <sup>c</sup>
Total Population	1.18	0.06	1.61
Black, non-Hispanic	2.17	0.78	4.57
Hispanic	2.85	1.25	4.99
All Other	0.73	-0.28	0.68

NOTES: Net undercount rates are calculated as the estimate—from the A.C.E. or PES—minus the census count divided by the estimate. The census count of the population in 2000 was 281.4 million; the census count in 1990 was 248.7 million. Minus sign (-) indicates a net overcount of the population

- <sup>a</sup> Data from Thompson, Waite, and Fay (2001:Table 1, col.1). Includes household population. Race/ethnicity defined according to the domain specifications for the A.C.E. (see National Research Council, 2001:Table 6-2).
- <sup>b</sup> Data from Thompson, Waite, and Fay (2001:Table 1, col.3). Takes the A.C.E. estimates of percentage net undercount and subtracts adjustments estimated by Fay (2001:Table 9) for additional unmeasured erroneous enumerations, including an assumption that computer matching was 75.7 percent efficient in identifying duplicates. See also note *a* for A.C.E.
- <sup>c</sup> Data from Hogan (2001:Table 2b). Includes household and noninstitutional group quarters population. Race/ethnicity definitions are not strictly comparable with 2000; "all other" is white and some other race, not-Hispanic.

the estimated net undercount of the total population in 2000 from 1.18 percent (March estimate) to 0.06 percent (October estimate) and a narrowing of the differences in net undercount rates for blacks and Hispanics compared with all others; see Table 1, which also provides undercount estimates from the 1990 Post-Enumeration Survey.

The unmeasured erroneous census enumerations identified in the Bureau's A.C.E. evaluations imply a larger number of gross errors in the census than originally estimated. In fact, it appears that the number of duplicates and other erroneous census enumerations in 2000 may have been as high as (or possibly higher than) the number estimated in 1990 from the Post-Enumeration Survey (see National Research Council, 2001:Table 6-10).

Focusing on the net underestimation in the A.C.E. of erroneous census enumerations (mostly duplicates), we ask: How well are they estimated and how accurate are the preliminary estimates the Census Bureau provided of their effects in reducing the differential net undercount? How did the A.C.E. miss these errors in the census? Why did they occur in the census in the first place?

### Measurement of Erroneous Enumerations

Two principal evaluations of the E-sample identified problems with the classification of erroneous census enumerations in the A.C.E.—the Evaluation Follow-Up Study (EFU) and the Person Duplication Studies.<sup>6</sup>

<sup>6</sup>The Person Duplication Studies could be conducted because the optical character recognition technology used by the Bureau for the first time in 2000 to process the questionnaires made it feasible to put names on the computerized census data records.

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- The EFU revisited a subsample of the E-sample housing units in one-fifth of the A.C.E. block clusters using a more detailed interview. It identified instances in which the A.C.E. failed to find out that a household member should have been enumerated elsewhere in the census and, hence, that the E-sample person should have been identified as erroneous instead of correct. The EFU also found errors in the other direction, that is, instances in which the A.C.E. identified an erroneous census enumeration when the enumeration was correct. On balance, the EFU estimated that the A.C.E. failed to measure 1.9 million erroneous census enumerations (Kresja and Raglin, 2001). The EFU could not resolve the status of an estimated 4.6 million census enumerations—an unresolved rate of 1.7 percent (lower than the 2.6 percent unresolved enumeration status in the original A.C.E.). The EFU estimates are subject to uncertainty from sampling error; they are also subject to error due to the time lag between Census Day (April 1, 2000) and the EFU interview (January-February 2001).

Because the EFU estimate of 1.9 million (net) unmeasured erroneous census enumerations in the A.C.E. seemed high, a subset of the EFU sample (about 17,500 cases) was reanalyzed by Census Bureau staff with extensive experience in matching. The result of this work was an estimate that, on balance, the A.C.E. had failed to measure about 1.5 million erroneous census enumerations. However, the reanalysis could not resolve the enumeration status of an estimated 15 million cases (5.8%, unweighted sample size of about 1,000; see Adams and Krejsa, 2001).

- In one analysis from the Person Duplication Studies, the E-sample cases were matched by name and date of birth to all nonimputed census cases nationwide. Members of E-sample households believed to contain a duplicated enumeration were further processed, resulting in an estimate of 2.7 million E-sample enumerations that duplicated another census household or group quarters enumeration outside the A.C.E. search area (Mule, 2001).

Analysis of these duplicated E-sample cases indicated that the A.C.E. may have failed to identify about 2.1 million of these census duplicates as erroneous (Feldpausch, 2001, as reanalyzed in Fay, 2001). Such cases included college students who were counted both at their college dormitory and at their parents' household; prisoners who were counted both at prison and at their family's residence; children in joint custody who were counted in the homes of both parents; and people with more than one house, such as those who live part of the year in the South or West and the rest of the year in the North or Midwest.

A subsequent study linked the duplicates identified in the Person Duplication Studies to the erroneous enumerations found in the EFU reanalysis subset of 17,500 persons with the goal of eliminating overlap (Fay, 2001). This linkage, which attempted to take account of the conflicting and unresolved cases in the EFU reanalysis, estimated that the A.C.E. failed to identify a total of 2.6 million erroneous census enumerations. (Separate estimates were developed for blacks, Hispanics, and all others, and for age/sex groups.) Because the Person Duplication Studies involved computer matching only (and not clerical matching, due to time constraints), an allowance was added for duplicates not detected by the computer matching. The result was an estimate of 2.9 million erroneous census enumerations that were not measured in the A.C.E. for the population as a whole.

The studies of duplications and other erroneous census enumerations not measured in the A.C.E. are not conclusive regarding the extent of errors in either the census or the A.C.E. Collectively, however, they raise sufficient questions to support the Bureau's conclusion that an

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adjustment of the census data using the original A.C.E. results should not be carried out at this time.

#### **Estimated Effects of Unmeasured Erroneous Enumerations on Net Undercount**

The results of the analyses by Fay (2001) were used by Thompson, Waite, and Fay (2001) to construct the revised preliminary estimates of the 2000 net undercount shown in Table 1 above (second column, October estimate). Unlike the original A.C.E., the revised figures were not built up from estimates for individual post-strata, but were constructed crudely for the total population and three race/ethnicity groups. The calculations were based on an assumption that the factor for duplicates not detected by the computer matching applied equally to all race/ethnicity groups. They were based on other simplifying assumptions as well, such as that P-sample errors would not likely affect the dual-systems estimate.

Thompson, Waite, and Fay (2001:1) termed the revised estimates an "early approximation" of the likely effects on the estimated net undercount that might result from a corrected A.C.E. Certainly, these estimates should only be considered illustrative and not in any way definitive. Considerable work will be required to refine the estimates, particularly for population groups.

#### **Reasons for Duplications**

Research is needed to understand why so many duplications occurred in the 2000 census. One possibility is that a growing number of people with multiple residences—such as college students, children in joint custody, and others—do not fit well the concept of "usual residence" because they are considered residents at more than one location. To investigate this possibility, testing could be carried out on alternative designs for the census questionnaire. Perhaps it would be helpful to add a place on the questionnaire for households to indicate second (or additional) residences, which could permit cross-checking other residences for potential duplication. Instructions for enumerating children in joint custody could also be tested.

Research is also needed on why the A.C.E. did not estimate the full number of duplicates and other erroneous enumerations in 2000.<sup>7</sup> It may be that adding more probes for other residences to the A.C.E. questionnaire that is used to follow-up nonmatched E-sample cases would be helpful. There is also a need to examine the P-sample questionnaire because many of the erroneous enumerations identified in the Evaluation Follow-Up Study were cases that matched between the independent P-sample and the E-sample of census enumerations. These matches mean that the P-sample must have included cases (e.g., college students counted at home) who should have been deleted from the P-sample because their usual residence was somewhere else (see Adams and Kresja, 2001). The EFU questionnaire itself included more detailed probes, but it could be too burdensome to use on a production basis. Also, it did not pick up as many duplicate enumerations as the Person Duplication Studies, which matched the E-sample to the census nationwide.

Because the addition of more questions or instructions to the census and A.C.E. questionnaires could discourage response, investigation of other ways to identify duplicates should be considered. One option to explore is the feasibility of using computer matching techniques for households at likely risk of duplication as a means to reduce the number of duplicate enumerations in future censuses.

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<sup>7</sup>As noted above, the 1990 Post-Enumeration Survey estimated a higher percentage of duplications and other kinds of erroneous enumerations than did the original A.C.E. Whether the level was even higher in 1990 (or earlier censuses) cannot be established because there was no way to match the E-sample to the entire census.

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It is also important to examine further the quality of the Master Address File (MAF). A special unduplication operation in summer 2000 to identify duplicate MAF addresses and associated household members resulted in 6 million person records identified initially as possible duplicates, of which 3.6 million were dropped from the census and 2.4 million were reinstated after further analysis. If this operation had not been carried out, the census would have included still more duplicates. We concluded in our interim report (National Research Council, 2001:Ch.8) that the exclusion of the reinstated person records from the A.C.E. would not likely bias the dual-systems estimate of the population; this conclusion was confirmed by the Bureau in its recent evaluation studies (Raglin, 2001). However, the Person Duplication Studies found that there were errors in the special unduplication operation in both directions: that is, some census records that were dropped were not duplicates, while some records that were reinstated should have been dropped (Mule, 2001). Further analysis is needed of the complete universe of reinstated and dropped records, including their distribution across geographic areas, in order to better understand the MAF and ways to improve it for the future.

### IMPUTATIONS

In our interim report (National Research Council, 2001:Ch.8), we identified the relatively large number of census records for which all of the characteristics of the person had to be imputed as a major reason for the smaller differences in 2000 in estimated net undercount rates between historically less-well-counted and better-counted groups than in 1990. There were three times as many such whole person imputations in 2000 (5.8 million) as in 1990 (1.9 million), and we found that they occurred disproportionately among minorities, renters, and children compared with whites and other races, owners, and adults. The imputations were carried out by using information from other census records in the immediate neighborhood. Often, imputations were performed for people in households that supplied the characteristics of some but not all of their members or for households that were known to have a specific number of occupants. However, some imputations were carried out when there was no information on household size or even whether the structure was a housing unit.

Whole person imputations cannot be included in the A.C.E. matching, but they are included in the census count that is subtracted from the dual-systems estimate to calculate net undercount. Without imputations, one would have calculated an overall net undercount rate of more than 3 percent from the A.C.E.—higher than in 1990 (see National Research Council, 2001:Table 8-1). Adding imputations (also reinstated people) to the census count resulted in an estimated net undercount rate of 1.18 percent—less than in 1990—and reduced the differences in estimated net undercount rates for historically less-well-counted groups in comparison with better-counted groups (see Table 1 above: A.C.E. March estimate, PES estimate). Hence, imputations are crucial to understanding the patterns of undercount in the 2000 census.

The Census Bureau should conduct a detailed analysis of census imputations, including their distribution across geographic areas. A limited analysis in the most recent set of Bureau evaluations concluded that imputations did not affect the undercount for minorities (Wetrogan and Cresce, 2001). This study compared the race and ethnicity composition of imputed persons and data-defined persons, but it did not look at the proportions of population groups that were imputed, which is the relevant analysis for the effects on net undercount rates. If it has not already done so, the Census Bureau should study imputations for other groups as well, such as owners and renters, and make the results publicly available.

The Bureau investigated reasons for different types of whole person imputations, such as the larger number of children imputed in households with other members reported (Nash,

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2001). As we surmised, most such cases occurred for mail returns from households with more members than there was space on the questionnaire and for which the coverage edit and telephone follow-up was not successful. However, more analysis is needed, particularly of the 1.2 million imputations that were performed on the basis of knowing very little about the housing unit.

### DEMOGRAPHIC ANALYSIS

In both the March and October decisions, the Census Bureau stressed the role of demographic analysis in evaluating the accuracy of the 2000 census and the A.C.E. Demographic analysis is used to construct an estimate of the population under age 65 by taking the demographic analysis estimate for the previous census, adding reported births, subtracting reported deaths, and adding estimates for net legal and illegal immigration. Medicare records with an adjustment for underregistration are used for the population aged 65 and older.

Demographic analysis techniques are important for developing postcensal population estimates, and they can certainly help diagnose possible problems in the census and the A.C.E. (e.g., by comparing sex ratios by age and race). However, as we concluded in our interim report (National Research Council, 2001:Ch.5), there are sufficient uncertainties in the estimates of net immigration (particularly the illegal component), compounded by the difficulties of classifying people by race, so that demographic analysis estimates cannot serve as a standard for evaluation of the census or the A.C.E.

The Bureau's revised demographic analysis puts the estimated net undercount at 0.12 percent of the population; see Table 2, October estimate. This estimate incorporates additional information for estimating net immigration (particularly illegal immigration) from the census itself (the long-form sample) and the Census 2000 Supplementary Survey. It also reflects new assumptions about the extent of undercount of legal immigrants and the completeness of birth registration.

We commend the Bureau for its work to examine each component of demographic analysis. However, its revised estimates of the immigration component are not independent of the census, and the estimates for births and immigration incorporate assumptions that are based primarily on expert judgment. Such judgments may be reasonable, but they retain sufficient uncertainty so that it is not appropriate to conclude that the revised demographic estimates are more accurate than the census. As we urged in our interim report (National Research Council, 2001:5), the Census Bureau should increase its resources for demographic analysis, particularly for methods for improving estimates of net immigration. It should also devote resources to estimating the uncertainty in the demographic estimates.

### FURTHER ANALYSIS OF THE A.C.E. AND THE CENSUS

We urge the Census Bureau to continue its evaluations of the A.C.E. and, particularly, to refine its estimates of the likely differential undercount for population groups. Differences in net undercount rates among groups are of more concern than the overall undercount for many uses of census data, and such differences are likely present in the census even if the net undercount rate for the total population is close to zero.<sup>8</sup>

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<sup>8</sup>In this regard, the Census Bureau concluded in October that "the net undercount remains disproportionately distributed among renter and minority populations" and that it is "reasonable to expect that research and analysis may lead to revised A.C.E. estimates that can be used to improve future post-censal estimates" (Executive Steering Committee on A.C.E. Policy, 2001a:i,v).

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**TABLE 2 Alternative Estimates of Percentage Net Undercount of the Population from Demographic Analysis, 2000 and 1990 Censuses**

Category	2000 Estimates			1990 Estimates <sup>a</sup>	
	Base <sup>b,c</sup> (Jan. 2001)	Alternate <sup>b,d</sup> (Mar. 2001)	Revised <sup>b,e</sup> (Oct. 2001)	Base (1991)	Revised (Oct. 2001)
Total Population	-0.65	0.32	0.12	1.85	1.65
Black	2.80	3.51	2.78	5.68	5.52
All Other	-1.19	-0.17	-0.29	1.29	1.08

NOTES: Net undercount rates are calculated as the estimate from demographic analysis minus the census count divided by the estimate. The census count of the population in 2000 was 281.4 million; the census count in 1990 was 248.7 million. Minus sign (-) indicates a net overcount of the population

- <sup>a</sup> Data from Robinson (2001b:Table 2). Includes household and group quarters population. Base is the estimate developed following the 1990 census; "revised" is the October 2001 estimate, with revisions to such components as births.
- <sup>b</sup> Data from Robinson (2001a:Table 6; 2001b:Table 2). Includes household and group quarters population. The estimates by race are an average of estimates calculated using two different tabulations of the census (see National Research Council, 2001:Ch.5). "All other" includes Hispanics not classified as black.
- <sup>c</sup> "Base" is the original January 2001 estimate, including an allowance for 6 million illegal immigrants—3.3 million from the 1990 demographic analysis estimate and a net increase of 2.7 million over the decade, extrapolated from estimates that mainly reflect changes between 1992 and 1996.
- <sup>d</sup> "Alternate" is the March 2001 estimate, including an allowance for 8.7 million illegal immigrants. This estimate was developed as an illustrative alternative to the base estimate when it became apparent that the latter likely underestimated illegal immigration. The alternate estimate reflects an assumed doubling of the net increase in illegal immigrants in the 1990s—from 2.7 million to 5.4 million.
- <sup>e</sup> "Revised" is the October 2001 estimate, which revises several components, including births and legal and illegal immigration.

This work may involve respecifying the post-strata for which separate dual-systems estimates are prepared, as well as refining the estimates of various kinds of errors in the A.C.E. and their effects on the variability of the estimates. We recognize that such work cannot be completed quickly; however, it is important to pursue given the critical role of the census for the development of postcensal estimates that are used for such purposes as fund allocation and reweighting of the nation's major household surveys.

It is also important to continue investigation of the reasons for errors in the census. In particular, it is important to learn as much as possible about census operations that may have contributed to duplicate enumerations and imputations in order to identify useful modifications to census procedures for 2010.

Finally, we stress that there will always be a need to evaluate the adequacy of population coverage in the census and to have a basis for census adjustment if needed. For this reason, it is essential to continue research on ways to improve the A.C.E., as well as the census.

In all of these analyses, the Census Bureau can benefit from the contributions and insights of independent researchers. The panel urges the Bureau to make available as much A.C.E. and census data as possible to the scientific research community for evaluation purposes. The Bureau should develop publicly available analysis files (consistent with protecting confidentiality) of coverage-related information (e.g., imputations, reinstated people, match rates) for



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post-strata and geographic areas. It should also find ways to provide access to A.C.E. microdata for researchers. While the likely errors in the A.C.E. preclude the use of the data for adjustment purposes at this time, there is much value in the data for research.

### FUTURE WORK OF THE PANEL

In its work to prepare a final report, the panel plans to address the quality of the important socioeconomic information collected in the census long form and to review the detailed information obtained on race and ethnicity. The panel will also review further Census Bureau evaluations of population coverage in the 2000 census and consider methods for improving coverage evaluation for future censuses.

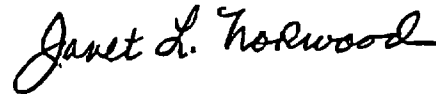
### SUMMARY

The panel concludes that the Census Bureau's two decisions (March and October) not to adjust the 2000 census counts for coverage errors are justifiable because of the evidence of errors in the A.C.E. that could lead to overstating the population.

The panel concludes that the Bureau's estimates of the effects of the unmeasured erroneous census enumerations on net undercount rates for population groups are far from definitive. These estimates are based on small samples and incorporate a number of simplifying assumptions. The Bureau should conduct further research on the unmeasured duplicate and other erroneous census enumerations and attempt to develop revised estimates of net undercount for the population and for major population groups. The Bureau should also conduct further research on the causes, quality, and effects of the larger number of census imputations and on demographic analysis components, particularly immigration.

The panel commends the Bureau for the extensive evaluations that it has conducted of the census and the A.C.E. to date. These evaluations underscore the critical importance for the census of having a coverage measurement program, such as the A.C.E., with a large independent survey that can provide detailed information on coverage errors for population groups and geographic areas.

Sincerely yours,



Janet L. Norwood, *Chair*  
Panel to Review the 2000 Census

Attachments: References  
Panel Roster and Charge

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## PANEL TO REVIEW THE 2000 CENSUS

JANET L. NORWOOD (*Chair*), Chevy Chase, Maryland  
 ROBERT M. BELL, AT&T Labs—Research, Florham Park, New Jersey  
 NORMAN M. BRADBURN, National Science Foundation, Arlington, Virginia  
 LAWRENCE D. BROWN, Department of Statistics, The Wharton School, University of  
 Pennsylvania  
 WILLIAM F. EDDY, Department of Statistics, Carnegie Mellon University  
 ROBERT M. HAUSER, Department of Sociology, University of Wisconsin  
 RODERICK J.A. LITTLE,\* School of Public Health, University of Michigan  
 INGRAM OLKIN, Department of Statistics and School of Education, Stanford University  
 D. BRUCE PETRIE, Canadian Institute for Health Information, Ottawa, Ontario

CONSTANCE F. CITRO, *Study Director*  
 MICHAEL L. COHEN, *Senior Program Officer*  
 DANIEL L. CORK, *Program Officer*  
 AGNES GASKIN, *Senior Project Assistant*  
 MARISA GERSTEIN, *Research Assistant*  
 MICHELE VER PLOEG, *Program Officer*  
 MEYER ZITZER, *Consultant*

\*Served until March 2000

## CHARGE OF THE PANEL TO REVIEW THE 2000 CENSUS

The Panel to Review the 2000 Census was convened by the Committee on National Statistics, National Research Council, in fall 1998 at the request of the U.S. Census Bureau. The panel is charged to review the statistical methods of the 2000 census, particularly the use of the Accuracy and Coverage Evaluation Program and dual-systems estimation, and other census procedures that may affect the completeness and quality of the data. Features the panel may review include the Master Address File, follow-up for nonresponse, proxy responses, race and ethnicity classifications, mail return rates, and other areas. The project duration is 48 months. The panel will hold several workshops during that time, produce an interim and a final report, and produce such other reports as needed.