
User's Manual

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1993 National Study of Postsecondary Faculty

**User's Manual
Public-Use Faculty and Institution Data**

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A Note to Users of this Manual

This manual was prepared with the goal of providing analysts with the information necessary to use and to interpret the public-use NSOPF-93 data. Each chapter in this manual can be read as a stand-alone document.

Analysts desiring a practical discussion about how to use the data files can skip to Chapter 2. Chapter 1 provides background to the study, information on questionnaire development, sampling and data collection procedures.

A Note on Data Use and Confidentiality

The NSOPF-93 data files are released in accordance with the provisions of the Privacy Act of 1974 [5 U.S.C. 552a] and the National Education Statistics Act of 1994, Public Law 103-382 [20 U.S.C. 9001 *et seq.*] for protecting the confidentiality of individually identifiable respondents. The National Center for Education Statistics (NCES) has released the NSOPF-93 data sets to be used for statistical purposes only.

The National Education Statistics Act of 1994 specifies that no person may:

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The NSOPF-93 restricted-use faculty data file may contain information that could lead to the inadvertent disclosure of a respondent's identity. Therefore, that data file may be released only to users who have signed the NCES licensing agreement and affidavit of nondisclosure.

Because NCES believed analysts would benefit from a less detailed version of the data that would not require their organizations to obtain a licensing agreement, NCES has conducted a deductive disclosure analysis and produced a public-use version of the NSOPF-93 faculty data. While the same level of detail could not be provided, every attempt was made to retain as many variables and as many variable categories as possible without posing a disclosure risk. This document is a user's manual for the public-use faculty data and for the public-use institution data.

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Appendix C. NSOPF-93 National Technical Review Panel

(NOTE: These appendices represent a subset of those which appear in the hardcopy user's manual. The omitted appendices contain information—such as data file layouts, copies of the questionnaires and codebooks—available in directories on the CD-ROM.)

1. NSOPF-93: Technical Information

1.1 Overview

The 1992-93 National Study of Postsecondary Faculty (NSOPF-93) was sponsored by the U.S. Department of Education's National Center for Education Statistics (NCES). The study received additional support from the National Science Foundation (NSF) and the National Endowment for the Humanities (NEH). It was conducted by NORC, the National Opinion Research Center at the University of Chicago, under contract to NCES.

The first cycle of NSOPF was conducted in 1987-88 (NSOPF-88) with a sample of 480 institutions (including 2-year, 4-year, doctoral-granting, and other colleges and universities), over 3,000 department chairpersons, and over 11,000 faculty. The second cycle of NSOPF, conducted in 1992-93, was limited to surveys of institutions and faculty, but with a substantially expanded sample of 974 public and private nonproprietary higher education institutions and 31,354 faculty. The study was designed to provide a national profile of faculty: their professional backgrounds, responsibilities, workloads, salaries, benefits, and attitudes.

1.2 Faculty Universe

Unlike NSOPF-88, which was limited to faculty whose regular assignment included instruction, the faculty universe for NSOPF-93 was expanded to include all those who were designated as faculty, whether or not their responsibilities included instruction, and other (non-faculty) personnel with instructional responsibilities. Under this definition, researchers and administrators and other institutional staff who hold faculty positions, but who do not teach, were included in the sample. Instructional staff without faculty status also were included. In summary, the eligible universe was defined to include:

- full- and part-time personnel whose regular assignment included instruction;
- full- and part-time individuals with faculty status whose regular assignment did not include instruction;
- permanent and temporary personnel with any instructional duties, including adjunct, acting, or visiting status;
- faculty and instructional personnel on sabbatical leave.

Excluded from the NSOPF-93 universe of faculty were:

- faculty and other personnel with instructional duties outside the U.S. (but not on sabbatical leave);
- temporary replacements for faculty and other instructional personnel;
- faculty and other instructional and non-instructional personnel on leave without pay;
- graduate teaching assistants;

- military personnel who taught only ROTC courses;
- instructional personnel supplied by independent contractors.

1.3 Sample Design

A two-stage stratified clustered probability design was used to select the NSOPF-93 sample. The first-stage NSOPF-93 sampling frame consisted of the 3,256 postsecondary institutions that provided formal instructional programs of at least two years' duration and that were public or private, not-for-profit. The sample was drawn from the 1991-92 IPEDS (Integrated Postsecondary Education Data System¹) Institutional Characteristics Survey.

A modified Carnegie² classification system was used to stratify institutions according to cross-classification of control by type, first into 17 cells, and then into 15 strata. There were two levels of control, public and private, and nine types of institutions including:

1. *Research universities (public or private)*: These institutions offer a full range of baccalaureate programs, are committed to graduate education through the doctorate, and give high priority to research. They award 50 or more doctoral degrees each year;
2. *Other Ph.D. (public or private)*: These institutions offer a full range of baccalaureate programs and are committed to graduate education through the doctorate. They award annually at least 10 doctoral degrees (in three or more disciplines), or 20 or more doctoral degrees in one or more disciplines;³
3. *Comprehensive colleges and universities (public or private)*: These institutions offer a full range of baccalaureate programs and are committed to graduate education through the master's degree. They award 20 or more master's degrees annually in one or more disciplines;
4. *Liberal arts colleges (public or private)*: These institutions are primarily undergraduate colleges with a major emphasis on baccalaureate degree programs;

¹IPEDS is a recurring set of surveys developed and maintained by NCES. Postsecondary education is defined by IPEDS as "the provision of a formal instructional program whose curriculum is designed primarily for students who have completed the requirements for a high school diploma or its equivalent." This definition includes programs whose purpose is academic, vocational and continuing professional education and excludes avocational and adult basic education. IPEDS encompasses all institutional providers of postsecondary education in the United States and its outlying areas. For more information on IPEDS, see National Center for Education Statistics, *IPEDS Manual for Users* (Washington, D.C.: National Center for Education Statistics, 1991 [NCES 95-724]). This manual is also distributed with IPEDS data on CD-ROM.

²See *A Classification of Institutions of Higher Education*, (Princeton, N.J.: The Carnegie Foundation for the Advancement of Teaching), 1987. Out of the 3,256 institutions, 278 could not be classified. Carnegie staff supplied updates for 81 institutions; the remaining group of unclassified institutions were designated as "unknown" on the NSOPF-93 sampling frame. These institutions were later reclassified in consultation with NCES.

³"Other Ph.D." institutions are included in the institutions noted as "Doctoral" in NSOPF-93.

5. *Two-year colleges (public or private)*: These institutions offer associate of arts certificate and degree programs and, with few exceptions, offer no baccalaureate degrees;
6. *Independent medical institutions (public or private)*: Those not considered as part of a 4-year college or university;
7. *Religious colleges (private only)*;
8. *Other (public/private)*: Includes a wide range of professional and other specialized degree-granting colleges and universities; and
9. *Unknown (public/private)*: Carnegie classification was unknown at time of sample selection.

1.4 First Stage Sampling

Sampling of institutions occurred independently within strata. Because the desired sampling rates for three of the cells—public research, private research, and public “other Ph.D.”—were so close to 100 percent, it was appropriate to sample all of the institutions in those cells. Therefore, a single sampling stratum was constructed for these institutions, and all institutions were selected in that stratum (i.e., selected with certainty). Grouping these institutions together was appropriate from a sampling design and selection standpoint. This stratum does not comprise a group of analytic interest.

Institutions in the other 14 strata⁴ were referred to as “noncertainty” institutions. The stratum sample sizes, determined by a preliminary pass through the 14 strata, were allocated proportional to the total estimated number of faculty and instructional staff in each stratum. In those strata, the first stage selections were made using stratified sampling with probabilities within each stratum proportional to the expected numbers of faculty and instructional staff. Systematic probability proportional to size (PPS) sampling was used with measure of size (MOS) equal to 41 or the estimated number of faculty (and instructional staff), whichever was larger. MOS was defined as the total number of faculty and instructional staff as specified in the most recent IPEDS Fall Staff Survey available (1991-92). Of the 3,256 institutions listed on the sample frame, 3,106 had a MOS available. For the remaining 150 (4.6 percent) institutions for which faculty data were missing, MOS was imputed.

In systematic sampling, the order in which the institutions are listed on the frame is important, as it reflects an implicit stratification. Within each stratum the institutions were sorted by MOS in a “serpentine” manner, i.e., if institutions in one stratum were sorted in ascending order by MOS, institutions in the next stratum were sorted in descending order, and so on. This procedure helped to balance the sample with respect to institution size (based on number of faculty). A total of 789 institutions was initially selected and later supplemented with 185 institutions for a total of 974 selected in the first stage.

Institutions were selected in two replicates. The first replicate, “Pool 1,” contained the initial sample of noncertainty and certainty institutions. The second replicate, “Pool 2,” was sorted into random order within strata and contained only noncertainty institutions. Institutions that were determined ineligible or could not

⁴The “noncertainty” sampling strata were broken down as follows: private, other Ph.D.; public, comprehensive; private, comprehensive; public, liberal arts; private, liberal arts; public, medical; private, medical; private, religious (there are no public religious colleges); public, two-year; private, two-year; public, other; private, other; public, unknown; and private, unknown.

be recruited after extensive follow-up were replaced at random by institutions within the same explicit stratum in Pool 2. Replacement institutions for the certainty stratum were selected at random from similar strata. ("Other Ph.D.," "Public Comprehensive," and "Private Comprehensive" sampling strata were used for this purpose.)

The public-use faculty file does not allow a user to replicate the sampling stratification for institutions described here. However, the institution stratum variable X02_0, which is used to stratify institutions by type and control in NCES analytical reports, can be used to classify the entire institution frame of 3,256 institutions. Exhibit 1-1 presents such a breakdown of the NSOPF-93 institution frame.

| Exhibit 1-1: NSOPF-93 institution frame, by NSOPF-88 institution stratum | | |
|---|--------------------------------|---|
| Stratum | Percent of institutions | Number of institutions⁵ |
| Public research | 2.2 | 71 |
| Private research | 1.0 | 33 |
| Public doctoral | 3.0 | 98 |
| Private doctoral | 2.6 | 85 |
| Public comprehensive | 10.7 | 348 |
| Private comprehensive | 8.2 | 267 |
| Private liberal arts | 18.0 | 586 |
| Public two-year | 31.9 | 1,039 |
| Other | 22.4 | 729 |
| Total | 100.0 | 3,256 |

1.5 Second Stage Sampling

At the second stage of sample selection, the NSOPF-93 sampling frame consisted of lists of faculty and instructional staff obtained from 817 participating institutions. Each institution was randomly assigned a target total sample size, say n , of either 41 or 42 faculty to yield the desired average cluster size of 41.5. Whenever an institution had fewer than 42 individuals, all faculty and instructional staff were selected. Otherwise, the following oversampling sizes⁶ were used to select groups to ensure their adequate representation in the sample and to meet NSF and NEH analytic objectives: full-time females (3.36), blacks or Hispanics (5.60), Asians or Pacific Islanders (1.12), faculty in four NEH disciplines

⁵The NSOPF-93 institution sampling frame included 3,256 institutions. During data collection, 12 institutions in the sample were found to be ineligible for NSOPF-93. When ineligible institutions were excluded from the sample, the sum of weights for eligible institutions was 3,188.

⁶The oversample size for a group is the difference between the expected sample size for the group and the expected sample size that would have been attained if all faculty had been sampled at the same rate, i.e., in the absence of oversampling.

(2.24)—philosophy/religion, foreign languages, English language and literature, and history—and all others (0.00). All listed individuals who would qualify for more than one group were assigned to the group for which the oversampling rate (here defined as the oversample size divided by the number of individuals qualifying for the group) was largest. These five groups were used as strata for sampling faculty. The residual sample size (n minus the sum of the oversample sizes) was allocated across the five strata in proportion to the number of faculty in the strata. Then, the total sample in each stratum (consisting of the oversample size plus the proportionally allocated residual) was specified by simple random sampling without replacement, with the sampling independent from one faculty stratum to the next. For more details about second stage sampling, refer to the *1993 National Study of Postsecondary Faculty: Methodology Report* [NCES 97-467].

1.6 Data Collection and Response Rates

Prior to data collection, it was necessary to obtain cooperation from the sampled institutions. Each institution was asked to provide annotated lists of all faculty and instructional staff according to the eligibility (and oversampling) criteria needed for second-stage sampling. Between October 1992 and early March 1993, 26 institutions in the original sample were replaced by randomly selected comparable institutions (from Pool 2): five because they were ineligible and 21 because they were determined to be final refusals. After trying to gain cooperation from the initial sample of 789 institutions for almost six months, it was determined that a certain number of other institutions were unlikely to participate in the study. These institutions were identified in March 1993 and 159 additional institutions were randomly selected within the relevant strata (from Pool 2).

Project staff tried to gain cooperation from original and replacement (or supplemental) institutions simultaneously.⁷ Of the 974 institutions in the total sample, 12 (1.2 percent) were found to be ineligible.⁸ Ineligible institutions included those which had closed or which had merged with other institutions, satellite campuses that were not independent units, and institutions that did not grant any degrees or certificates. A total of 817 eligible institutions agreed to participate (i.e., to provide a list of faculty and instructional staff), for a list participation rate of 84.9 percent (83.4 percent, weighted).

Faculty data collection was conducted between January and December 1993, with a two-month hiatus during July and August while most faculty and instructional staff were on summer break. The faculty survey relied on a multi-modal data collection design which combined an initial mailed questionnaire with mail and telephone prompting supplemented by computer-assisted telephone interviewing (CATI). As the faculty lists were received, sampled, and processed, questionnaire and follow-up mailings were sent out in large waves between January and July 1993. Coordinators at the participating institutions who signed NCES's Affidavit of Nondisclosure assisted in the effort by prompting nonrespondents to return their completed questionnaires

⁷Since the Pool 2 institutions were additional random selections into the sample, the effect of using Pool 2 institutions is no different than if a larger number of institutions had been selected initially and the pools had not been used at all. The response rates for Pool 1 institutions, and for Pool 1 and Pool 2 institutions combined, have the same expected value. Since it is based on a larger sample, the response rate for Pool 1 and Pool 2 combined is a more accurate estimator of the population response rate.

⁸When ineligible institutions were excluded from the sample, the sum of weights for eligible institutions was 3,188, rather than the 3,256 institutions specified in the sampling frame.

to NORC. Of the 31,354 faculty and instructional staff sampled,⁹ 1,590 (5.1 percent) were found to be ineligible, which included staff who were deceased or no longer at the institution, staff who did not have a Fall 1992 teaching assignment, and teaching assistants. A total of 25,780 questionnaires were completed for a response rate of 86.6 percent (84.4 percent, weighted). The overall faculty response rate (institution list participation rate \times faculty questionnaire response rate) was 73.5 percent (70.4 percent, weighted).

Institution data collection was conducted between September 1993 and May 1994. The institution survey combined a mailed questionnaire with mail and telephone prompting directed at both participating (817 institutions which submitted faculty lists) and nonparticipating institutions (145 institutions), for an eligible sample of 962 institutions. For 385 (44 percent) of the self-administered questionnaires completed, the institutional coordinator who had provided the original list was the main respondent, although other institution staff usually contributed to the effort. A total of 872 institution questionnaires was completed for a response rate of 90.6 percent (93.5 percent, weighted).

1.7 Best Estimates of Faculty

In comparing the weighted estimates based on the lists of faculty and instructional staff provided by institutions with those based on the institution questionnaires, several patterns that were contrary to expected results emerged. Although some variance in the estimates based on the lists and the institution questionnaires was expected, the magnitude of the difference was larger than anticipated. This, in and of itself, was not seen as a problem since the estimates were from two different sources. What was less plausible were the trends in the estimates of part-time faculty between NSOPF-88 and NSOPF-93. The institution survey showed a 5 percent increase in the estimate of part-time faculty between the fall of 1987 and the fall of 1992. The faculty survey, based on the lists of faculty and instructional staff provided by the institution, showed no change in the percentage of part-time faculty between the two points in time. The weighted estimates based on the lists also showed a 37.5 percent decrease in the number of health sciences faculty and instructional staff from the fall of 1987 to the fall of 1992. Institution recontact, conducted in January and February 1996, was necessary to resolve these discrepancies and to determine the "best estimates" of total, full- and part-time faculty and instructional staff.

The best estimates were derived following a reconciliation and verification recontact with a subset of institutions which showed discrepancies of 10 percent or greater between the total number enumerated on the faculty list and the total number reported on the institution questionnaire. The recontact effort also included 120 institutions identified by NCES as employing health sciences faculty.

⁹Initially, 33,354 faculty were sampled. To reduce costs, 2,000 nonresponding faculty and instructional staff were randomly eliminated from the sample through subsampling in August 1993. A higher proportion of part-time faculty and instructional staff were eliminated than remained; this was taken into account in the calculation of faculty weights.

Of the 760 “matched” institutions¹⁰ (i.e., institutions which provided both a completed institution questionnaire and a list of faculty and instructional staff), 450 (59 percent) had a discrepancy of 10 percent or more between the questionnaire and the list, and 61 of the 450 had health sciences faculty.

Of the 817 institutions which provided lists of faculty and instructional staff, 509 institutions (450 with 10 percent or greater discrepancies plus an additional 59 institutions with health sciences faculty) were recontacted. Before recontacting each institution, each discrepancy was reviewed to eliminate obvious clerical or list posting errors. A best estimate was obtained for 492 (or 96.7 percent) of these institutions.

Institutions were also asked to provide an explanation for the discrepancies in faculty counts. For the 374 institutions that provided reasons, the most commonly cited reason was the omission of some part- or full-time faculty from the list provided for sampling faculty. This occurred for 107 institutions. Some institutions included certain types of medical faculty in one set of estimates, but not in the other. Downsizing affected faculty counts at several institutions. Another factor in the discrepancies was the time interval (in some instances a year or more) between the time the list of faculty and instructional staff was compiled and the time the institution questionnaire was completed. The list did not always include new hires for the fall term, which were counted in the institution questionnaire. Some institutions provided “full-time equivalents” (FTEs) on the institution questionnaire rather than the actual headcount of part-time staff that was requested. In some instances, however, where part-time faculty and instructional staff were overreported (on either the list or the questionnaire) the reason involved confusion between the pool of part-time or temporary staff employed by, or available to, the institution and the number actually employed during the fall semester. It is important to point out that 118 of the reconciled institutions were unable to provide a specific reason for the discrepancies.

Data gathered in the recontacting effort were used to adjust the original list of faculty and instructional staff to incorporate recontacted institutions’ best estimates into the final estimates. Original faculty list totals for full-, part-time, and total faculty and instructional staff for each of the 817 participating institutions provided a starting point in this process. However, in some cases, institutions which supplied a total number did not supply a breakdown of the total number into full- and part-time components.¹¹ For these institutions, a two-step procedure for deriving best estimates was used: first, deriving “best total estimates” and, second, deriving “best full-time estimates.” Best estimates for part-time staff were simply calculated by subtracting the number of full-time staff from the total number at each institution.

The next step in calculating best total estimates involved the substitution of the verified counts from the 492 institutions NORC recontacted. If an institution verified the counts from its original faculty list or was unable to confirm other estimates, the original list estimate was retained as the best estimate. If the institution verified the institution questionnaire data as a more accurate estimate, questionnaire data were substituted for original list data as the best estimate. If the institution provided a different set of estimates, the new estimates were substituted for counts based on original list data.

¹⁰A total of 929 of the 962 eligible institutions (96.6 percent) participated in the survey in some way — either by completing an institution questionnaire or by submitting a faculty list. A total of 872 institutions completed institution questionnaires and 817 institutions provided faculty lists. Of the 817 institutions which submitted faculty lists, 760 of them also completed an institution questionnaire. Therefore, “matched” data — counts of the total number of faculty at the institution drawn from the faculty list and from the institution questionnaire — are available for only these 760 institutions.

¹¹Ninety-nine of the 817 institutions did not specify the employment status (i.e., full- or part-time) of faculty and instructional staff on their original lists.

Institutions which were nonrespondents in the verification effort and which had faculty list/institution questionnaire discrepancies of 10 percent or greater were adjusted by multiplying the original list count by the ratio of verified counts to original counts for the 492 recontacted institutions. Original list data were used for the institutions which were not selected for recontact. For all 817 institutions, the source of the final best estimates was as follows:

- 460 (56.3 percent) used original list data;
- 280 (34.3 percent) used questionnaire data;
- 61 (7.5 percent) used new estimates (other than questionnaire or original list data); and
- 16 (1.9 percent) were ratio-adjusted.

During the reconciliation effort, some ineligible faculty and instructional staff were excluded from the institution-level totals. This happened if recontacted institutions reported that the original faculty list had included ineligible faculty. This information was supplied by 23 institutions. It is assumed that faculty population estimates derived from the best estimate calculations include only eligible faculty.

1.8 A Special Note About Estimates of Health Sciences Faculty

Creation of best estimates could only partly rectify problems with estimates of health sciences faculty. The reconciliation effort helped to identify some institutions that failed to list health science faculty on their original faculty lists. However, because faculty list data were only recorded for faculty members' in the four NEH disciplines (i.e., English language and literature, foreign languages, history, and philosophy and religion) it was impossible to poststratify to best estimates for health science faculty.

Characteristics specific to health sciences faculty make comparisons between health sciences faculty and other types of faculty difficult. The total number of health sciences faculty estimated in the NSOPF-93 faculty dataset is 146,615. However, when the selection criterion for instructional faculty used in the NCES report *Instructional Faculty and Staff in Higher Education Institutions: Fall 1987 and Fall 1992* is applied, a total of 124,186 health sciences faculty is selected for analysis. While this selection criterion provides the greatest comparability with NSOPF-88 faculty population estimates, it still selects an estimated total number of faculty that represents a decline from 1988.

One reason for the selection of fewer health sciences instructional faculty may be that health sciences faculty are more likely to perform individualized instruction or noncredit teaching activities than are other types of faculty participating in NSOPF-93. The largest concentration of faculty who conducted individualized instruction but who did not teach courses was found in the health sciences. Of the estimated 76,200 faculty who conducted individualized instruction and taught no other course, 31,201, or 41 percent, of the total were health sciences faculty. The next largest group of faculty meeting these criteria were found in the natural sciences (8,805 or 11.6 percent). Because of the importance of individualized instruction to health sciences faculty, selecting for analysis only those faculty who had any for-credit instructional responsibilities may have the unintended consequence of excluding a greater number of health sciences faculty than is warranted.

Because differences between health sciences faculty and other types of faculty persist despite reconciliation, analysts should be cautious when using these data. A more detailed discussion on health science estimates can be found in the *1993 National Study of Postsecondary Faculty Methodology Report* [NCES 97-467]. Analysts should be aware that NCES plans to include health sciences faculty estimates in the total, but not report health sciences faculty estimates separately, in its publications. *Instructional Faculty and Staff in Higher Education Institutions: Fall 1987 and Fall 1992* [NCES 97-470] provides an example of how

NCES plans to use health sciences faculty data.

1.9 Weight Calculations

The weights for both the institution and faculty samples were designed to adjust for differential probabilities of selection and nonresponse. Weights for the institution sample were constructed in three steps. First, the institution's base weight—equal to the reciprocal of its probability of selection into the sample—was calculated. Second, the base weights were adjusted for institutions that had merged and so were effectively listed multiple times in the sampling frame.¹² Finally, a nonresponse adjustment factor was applied to the weights to compensate for institution-level nonresponse. A review of the institution data file indicated that a post-stratification adjustment was not needed.

Weights for the faculty sample were computed in four steps. First, the base conditional selection probabilities were calculated; these reflected the selection rates for faculty members given that their institutions were sampled. In this step, the initial selection probabilities also were adjusted to reflect the exclusion of a random subsample of faculty. (See footnote 9.) Then the reciprocals of these selection probabilities were calculated to yield base conditional weights. Second, these weights were multiplied by the first-stage nonresponse-adjusted weights to yield second-stage sampling weights adjusted for institutional nonresponse. Third, a second-stage nonresponse adjustment factor was applied to these latter weights to compensate for nonresponse by faculty members. Fourth, the nonresponse-adjusted weights were poststratified to the best estimates of total, full-, and part-time faculty and instructional staff by sampling stratum.

The poststratification adjustment should reduce sampling variability, and more importantly reduce any reporting biases and bias due to undercoverage of the faculty sampling frame. Poststratification provides a means of weighting the faculty respondents to represent all faculty on the original faculty sampling frame as well as faculty missed on the frame. The method is entirely analogous to the nonresponse adjustment, where faculty respondents are weighted up to represent themselves as well as the faculty nonrespondents. While the nonresponse adjustment is based upon the assumption that the means of respondents and nonrespondents are similar, the poststratification adjustment is based upon the assumption that the means of covered faculty and missed faculty are similar. Neither assumption is perfect, but the resulting estimates are thought to be more accurate than they would be in the absence of the adjustments.

1.10 Imputation of Missing Data

Item nonresponse occurred when a respondent did not answer one or more survey questions. The item nonresponse rates were generally low for the institution and faculty questionnaires, since missing critical (and selected other) items were retrieved by interviewers. The NSOPF-93 faculty questionnaire had a mean item nonresponse rate of .103 for 395 items in six sections. The NSOPF-93 institution questionnaire had a mean item nonresponse rate of .101 for 283 items in four sections.¹³ Imputation for item nonresponse was

¹²After the sample was selected and institutions were contacted, NORC discovered that a few of the institutions in the sample had merged with other institutions on the sampling frame. Since a merged institution would be in the sample if any listing of the institution was selected from the frame, its weight must be reduced accordingly.

¹³The item nonresponse rate is defined as the ratio of the total number of nonresponses to the total number of individuals eligible to respond to a questionnaire item. The mean item nonresponse rates reported here are the unweighted means of the item nonresponse rates for all items on the questionnaires. For a full description of item

performed for each survey item, to make the study results more inclusive.¹⁴ “Don't know” responses were treated as item nonresponse and imputed for both the institution and faculty questionnaires. However, a second imputation was done for selected items in the faculty questionnaire with “don't know” responses, where this caused 30 percent or more of the responses to be eligible for imputation. In the second imputation, “don't knows” were treated as legitimate responses, and only in a case where there was no response to a survey item was imputation performed. For these items, in the second imputation, missing responses were imputed across all response categories, including the “don't know” category. This was done to allow researchers to choose how to treat “don't knows” in their analyses. Not applicable (“NA”) responses were not imputed since these represented respondents who were not eligible to answer the relevant item.

Imputation was performed using several procedures. Missing gender, race, and employment status data on the faculty data file were imputed directly from information supplied by institutions on the lists used for sampling faculty and instructional staff, whenever this information was available. Two statistical imputation procedures, regression-based and hot-deck, were employed to impute other missing data on both data files. Regression-based imputation was used for continuous and dichotomous variables. Hot-deck imputation was used for all other variables. The type of imputation used was recorded by setting the appropriate value of the imputation flag for each survey item.

1.11 Sources of Error

Survey estimates are subject to two sources of error: sampling errors and nonsampling errors. Sampling errors occur because the estimates are based on a sample of individuals in the population rather than on the entire population. Sampling errors can be quantified using statistical procedures in which a variance estimate is calculated. In the reports, the variance estimate is a standard error for the mean or proportion (including percent). The standard error measures the variability of the sample estimator in repeated sampling, using the same sample design and sample size. It indicates the variability of a sample estimator that would be obtained from all possible samples of a given design and size. Standard errors are used as a measure of the precision expected from a particular sample. If all possible samples were surveyed under similar conditions, intervals of 1.96 standard errors below to 1.96 standard errors above a mean or proportion would include the true population parameter in about 95 percent of the samples. In general, for large sample sizes (n greater than or equal to 30) and for estimates of the mean or the proportion, the intervals described above provide a 95 percent confidence interval. If sample sizes are too small, or if the parameters being estimated are not means or proportions, then these intervals may not correspond to the 95 percent confidence level. The standard errors may be used to calculate confidence intervals around each estimate and to compare two or more estimates to determine if the observed differences are statistically significant.

Sample estimates also are subject to bias from nonsampling errors. It is more difficult to measure the magnitude of these errors. They can arise for a variety of reasons: nonresponse, undercoverage, differences in the respondent's interpretation of the meaning of questions, memory effects, misrecording of responses, incorrect editing, coding, and data entry, time effects, or errors in data processing. For example, undercoverage (in which institutions did not provide a complete enumeration of eligible faculty) and listing of

nonresponse, see *1993 National Study of Postsecondary Faculty: Methodology Report* [NCES 97-467].

¹⁴For more information on imputation of missing data in sample surveys, see Kalton, Graham and Daniel Kasprzyk, “Imputing for Missing Survey Responses.” Paper presented at 1982 Proceedings of the Section on Survey Research Methods, American Statistical Association; Kalton, Graham and Daniel Kasprzyk, “The Treatment of Missing Survey Data,” *Survey Methodology* 12 (1) (June, 1986), pp. 1-16.

ineligible faculty necessitated the “best estimates” correction to the NSOPF-93 faculty population estimates. Whereas general sampling theory can be used, in part, to determine how to estimate the sampling variability of a statistic, nonsampling errors are not easy to measure. Measurement of nonsampling errors usually requires the incorporation of a methodological experiment into the survey or the use of external data to assess and verify survey results.

To minimize the potential for nonsampling errors, the faculty and institution questionnaires (as well as the sample design, data collection, and data processing procedures) were field-tested with a national probability sample of 136 postsecondary institutions and 636 faculty members in 1992. To evaluate reliability, a subsample of faculty respondents were re-interviewed. An extensive item nonresponse analysis of the questionnaires also was conducted followed by additional evaluation of the instruments and survey procedures.¹⁵ An item nonresponse analysis also was conducted for the full-scale surveys.

In addition, for the full-scale surveys, a computer-based editing system was used to check data for range errors, logical inconsistencies, and erroneous skip patterns. For erroneous skip patterns, values were logically assigned on the basis of the presence or absence of responses within the skip pattern whenever feasible, given the responses. Missing or inconsistent critical items were retrieved. Some small inconsistencies between different data elements remained in the data files. In these situations, it was impossible to resolve the ambiguity as reported by the respondent. All data were keyed with 100 percent verification of a randomly selected subsample of 10 percent of all questionnaires received.

1.12 Deductive Disclosure Analysis for the Public-Use Faculty Data File

To comply with the Privacy Act of 1974 [5 U.S.C. 552a] and the National Education Statistics Act of 1994, [20 U.S.C. 9001 *et seq.*] and related confidentiality legislation required to release NCES data publicly, a deductive disclosure analysis was conducted to determine appropriate safeguards to minimize the risk of revealing NSOPF-93 respondents' identities.

Deductive disclosure analysis identifies the potential for users to uncover identities of individual respondents from public-use data files. A deductive disclosure analysis can recommend modifications to public-use data files that can minimize the risk of disclosure. While it is not possible to eliminate completely the potential for disclosure in a public-use data file, implementing recommendations produced by a thorough deductive disclosure analysis helps to ensure that the optimum protections of confidentiality have been afforded to all survey respondents. Users' needs for the maximum amount of information are balanced with the requirement of protecting the confidentiality of respondents.

As a result of the deductive disclosure analysis, the NSOPF-93 public-use faculty file differs substantially from the NSOPF-93 restricted-use faculty file available to those who sign a licensing agreement with NCES. The public-use file contains many fewer variables than the restricted-use file. Some variables on the public-use file have been modified (by recoding fine-grained response categories to coarser response categories, for example) to minimize the risk of disclosure of individual respondents.

1.13 How to Obtain Other NSOPF-93 Products

¹⁵A complete description of the field test design and results can be found in Abraham, Sameer Y., *et al.*, 1992-93 *National Study of Postsecondary Faculty: Field Test Report* (Washington, D.C.: U.S. Department of Education, National Center for Education Statistics [NCES: 93-390]), February 1994.

As discussed earlier, the NSOPF-93 public-use faculty data file provides data for only a small number questions asked on the NSOPF-93 faculty questionnaire. (See the CD-ROM for a copy of the full NSOPF-93 questionnaire and for the variables included in the public-use faculty file.) Users interested in researching issues covered in the NSOPF-93 faculty questionnaire, but not included on the NSOPF-93 public-use faculty file, have several options. They may obtain a copy of the NSOPF-93 Data Analysis System (DAS) on CD-ROM, use the NSOPF-93 Data Analysis System on NCES's World Wide Web site, or obtain a copy of the NSOPF-93 restricted-use faculty data file.

The DAS provides a convenient, menu-driven system allowing researchers to produce tables of frequencies and crosstabulations and correlation matrices. The NSOPF-93 sample is not a simple random sample. Therefore, simple random sample techniques for estimating sampling error cannot be applied to these data. The DAS takes into account the complexity of the sampling procedures and calculates standard errors appropriate for such samples. DAS software provides all information necessary for a user to set up and run a variety of analyses. Each DAS is self-documenting, with weighted data distributions and full descriptions for each variable. The DAS allows users to select variables for rows, columns, and subgroups for tables from the list of available variables, many of which have been computed to simplify analysis. Continuous variables, such as income, can be recoded into categories for rows, column percentages, or subgroup definitions. Categorical variables, such as race, can be grouped or "lumped" in various ways for analysis. Table titles as well as variable labels can be edited by the user, and DAS output is compatible with most spreadsheet software. In addition to the table estimates, the DAS calculates proper standard errors and weighted sample sizes for these estimates. If the number of valid cases does not meet the minimum requirement based on NCES statistical standards, the DAS prints the message "low-N." Users can also define variables for use in a correlation matrix, which can be imported into standard statistical packages for more complex analysis. More detailed information on the features of the NSOPF-93 DAS appears in the "help" files and menus on the DAS/CD-ROM. The DAS can also be accessed at NCES's World Wide Web at:
<http://www.ed.gov/NCES/surveys/nsopf.html#DAS>.

The restricted-use faculty data file is available at no charge on a restricted loan basis to organizations that obtain an approved licensing agreement from NCES. To request a licensing agreement, the individual and/or institution must provide the following information:

- The title of the survey to which access is desired.
- A detailed discussion of the statistical research project that requires accessing the restricted NCES survey data.
- The name and title of the most senior official who has the authority to bind the organization to the provisions of the licensing agreement.
- The name and title of the project officer who will oversee the daily operations.
- The name, telephone number, and title of professional and technical staff who will access the survey database. Each professional or technical staff member with access to the data is required to sign and to have notarized an Affidavit of Nondisclosure.
- The estimated loan period necessary for accessing the NCES survey database.

- The desired computer product specifications, such as medium (9-track tape, CD-ROM), code convention (ASCII, EBCDIC, SAS), etc.

To obtain further details and a licensing agreement form please write to:

Data Security Officer
Statistical Standards and Services Group
U.S. Department of Education
Office of Educational Research and Improvement
National Center for Education Statistics
555 New Jersey Avenue, N.W., Room 408
Washington, D.C. 20208-5654
(202) 219-1831

Individuals who obtain restricted-use faculty data after signing a licensing agreement with NCES can receive the following products on one CD-ROM: the NSOPF-88 and NSOPF-93 faculty data files; the NSOPF-93 institution data file; the NSOPF-93 faculty electronic codebook (ECB), the 1993 merged faculty and institution ECB¹⁶; the user's manual for the institution and restricted-use faculty data files; and the faculty and institution questionnaires.

The DAS can be accessed also through the Internet on NCES's World Wide Web site at <http://www.ed.gov/NCES/surveys/nsopf.html#DAS>. DAS procedures can be performed over the World Wide Web. The DAS CD-ROM for PC use (in DOS and Windows versions) can also be ordered by contacting:

National Education Data Resource Center
c/o Pinkerton Computer Consultants, Inc.
1900 N. Beauregard Street, Suite 200
Alexandria, VA 22311-1722
Phone: (703) 845-3151
FAX: (703) 820-7465
E-mail: nedrc@inet.ed.gov.

Feedback and suggestions on the products and other features of NSOPF-93 are welcome. Please address your comments to:

Linda Zimble
NSOPF Project Officer
U.S. Department of Education
Office of Educational Research and Improvement

¹⁶The NSOPF-93 electronic codebooks (ECB) combine the convenience, simplicity and cost efficiencies of personal computers (PCs) with CD-ROM technology. ECBs permit users to search for variables based on key words and names. The ECB displays full question text and unweighted frequencies for each variable in order to assist users in deciding which data elements may be useful for their analyses. The ECB can also be used as a tool for selecting variables for subsequent analysis, writing SAS or SPSS-PC code for file construction of the designated variables and for generating a codebook of the chosen set of variables. The ECBs feature windows with unweighted frequencies and percentages and extensive "help" files and menus to explain ECB features.

National Center for Education Statistics
555 New Jersey Avenue, N.W.
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2. Guide to the Data Files and Codebooks

2.1 Content and Organization of NSOPF-93 Files on CD-ROM

This chapter provides information on the content and organization of the public-use data files, the use of flags and weights and derived variables. The NSOPF-93 public-use faculty and the public-use institution data files are available on one CD-ROM. PUBFAC93.DAT, the raw data file for the faculty questionnaire, contains records for 25,780 responding faculty from 817 institutions that participated by providing faculty lists. INST93.DAT, the raw data file for the institution questionnaire, contains records for 872 institutions, including 760 of the 817 institutions that provided lists for sampling faculty, and an additional 112 that did not provide lists.

The NSOPF-93 public-use data file compact disk (CD) contains all NSOPF-93 public-use data, including the public-use institution data collected as part of NSOPF-93. The CD contains two directories, PUBFAC93 and INST93, for data and documentation files. The file README.TXT is the only file in the CD's root directory. A description of the files located in each CD directory and subdirectory follows below.

The PUBFAC93 directory includes a flat data file (.DAT), a version 6.03 PC-SAS dataset (.SSD), and a version 6.0 SPSS-Windows system file (.SAV) for the 1993 faculty file. In addition, the necessary cards for SAS and SPSS, along with the formats used to create the datasets, are provided with NSOPF-93. The SPSS cards are provided in their entirety since different platforms have different limitations in SPSS. It is assumed that the user will be aware of these limitations, and will create extract programs, if necessary, depending on their platform.

Finally, documentation and frequency listings are available under separate subdirectories.

In PUBFAC93:

| | | |
|--------------|-------|--|
| DOC | <DIR> | |
| FREQ | <DIR> | |
| PUBFAC93.DAT | | NSOPF-93 public-use faculty data file, raw ASCII |
| PUBFAC93.SAS | | SAS file layout for NSOPF-93 public-use faculty data file |
| PUBFAC93.SAV | | SPSS for Windows (version 6.0) system file for public-use faculty data file, created from PUBFAC93.SPS |
| PUBFAC93.SPS | | SPSS file layout for NSOPF-93 public-use faculty data file |
| PUBFAC93.SSD | | SAS system file (version 6.03) for public-use faculty file, created from PUBFAC93.SAS |

Frequencies for the NSOPF-93 data are provided in a subdirectory FREQ for all of the variables, weighted, generated from the SAS dataset PUBFAC93.SSD, and for a subset of variables using SPSS. The SAS listing is PUBFAC93.LST, and the SPSS listing is FAC93SPS.LST:

In PUBFAC93\FREQ:

| | |
|--------------|--|
| PUBFAC93.LST | SAS frequencies for public-use faculty data file, created from PUBFAC93.SAS |
| FAC93SPS.LST | SPSS frequencies for public-use faculty data file, created from PUBFAC93.SPS |

Documentation for the NSOPF-93 data is provided in a subdirectory DOC, including the public *Data File User's Manual* (DFUSERMP.WPD), a WordPerfect 6.1 document that includes file layout, codebook, documentation of derived variable creation, and faculty and institution questionnaires for both the public-use faculty and institution data files. The faculty codebook is also available in two additional forms, as a .PRN file and as an ASCII file (.CBK). Finally, the faculty questionnaire is also available as an ASCII file (.TXT).

In PUBFAC93\DOC:

| | |
|--------------|--|
| DFUSERMP.WPD | <i>Data File User's Manual</i> for NSOPF-93 Public-Use Faculty and Institution Data Files in WordPerfect 6.1 for Windows version |
| FAC93CBK.PRN | Public-use faculty data file codebook (print file) |
| FACQUEX.TXT | NSOPF-93 faculty questionnaire, in raw ASCII form |
| PUBFAC93.CBK | Public-use faculty data file codebook (in ASCII form) |

The INST93 directory includes a flat data file (.DAT), a version 6.03 PC-SAS dataset (.SSD), and a version 6.0 SPSS-Windows system file (.SAV) for the 1993 Institution file. In addition, the necessary cards for SAS and SPSS, along with the formats used to create the datasets, are provided. As is true for the faculty file, SPSS cards are provided in their entirety since different platforms have different limitations in SPSS. It is assumed that the user will be aware of these limitations, and will create extract programs, if necessary, depending on their platform.

In INST93:

| | |
|------------|--|
| DOC | <DIR> |
| INST93.DAT | NSOPF-93 public-use institution data file, raw ASCII |
| INST93.SAS | SAS file layout for NSOPF-93 public-use institution data file |
| INST93.SAV | SPSS for Windows (version 6.0) system file for public-use institution data file, created from INST93.SPS |
| INST93.SPS | SPSS file layout for NSOPF-93 public-use institution data file |
| INST93.SSD | SAS system file (version 6.03) for public-use institution file, created from INST93.SAS |

Documentation for NSOPF-93 institution data is provided in the NSOPF-93 *Data File User's Manual* (DFUSERMP.WPD) in directory PUBFAC93\DOC. A DOC subdirectory, which includes the institution codebook, appears under INST93. The institution codebook is available in two forms, as a .PRN file and as an ASCII file (.CBK). The institution questionnaire is also available as an ASCII file (.TXT).

In INST93\DOC:

| | |
|--------------|--|
| I93CBK.PRN | NSOPF-93 public-use institution data file codebook (print file) |
| INST93W.CBK | NSOPF-93 public-use institution data file codebook (in ASCII form) |
| INSTQUEX.TXT | NSOPF-93 institution questionnaire, in raw ASCII form |

An electronic codebook is provided for NSOPF-93 public-use institution data. Both Windows and DOS versions of an electronic codebook, which reads the raw institution data file, can be accessed from the ECBW subdirectory. Windows ECB software is self-installing through the SETUP.EXE install program.

In ECBW,

| | |
|-------------|--|
| INS | <DIR> |
| SETUP.EXE | The setup program to install the Windows ECB |
| SETUP.INI | |
| SETUP.INS | |
| _SETUP.LIB | |
| SETUP.BMP | |
| _SETUP.DLL | |
| _INST16.EX_ | |
| ECBW.EXE | |
| ECBW.HLP | |
| ECBW.ICO | |
| CTL3D.DLL | |
| TBPRO1W.DLL | |
| TBPRO2W.DLL | |
| TBPRO3W.DLL | |
| TBPRO4W.DLL | |
| TBPRO5W.DLL | |
| TBPRO6W.DLL | |

In ECBW\INS, Institution file ECB subdirectory

| | |
|-------------|--|
| ECBINS.EXE | Electronic codebook software |
| ECB.HLP | Help file (print this to learn more about the ECB) |
| ECBSPEC.INS | Configuration file for ECB |
| INS01.CDC | |
| INS02.CDC | |
| INS.ICO | Icon file for windows ECB |
| EXTRINS.EXE | Software for extracting data from CD to fixed disk |

Note that all SAS data sets (.SSD) are in version 6.03, and that all WordPerfect files (.WPD) are version 6.1 for Windows. No public-use documentation that is in the public-use *Data File User's Manual* will be duplicated as separate WordPerfect files. Some documentation files are duplicated in ASCII format (.TXT) for quick reference.

The record layouts for both the faculty file and the institution appear on the CD-ROM.

2.2 Identification Codes

The first variable in both files is an encrypted identification code. The encrypted identification code for institution-level respondents in the institution file is the 6-digit INSTID. The first variable on the faculty file is the encrypted 9-digit faculty identification number, CASEID. These codes have been encrypted so that it is impossible to identify institutions for which faculty members work. In other words, faculty-level data cannot be merged with institution-level data. The link between the institution and faculty files was prevented to minimize the risk of disclosure of individual faculty members' identities.

2.3 Variable Names

Variable names for questionnaire items for both the faculty and institution data files were created according to the following convention: the first letter indicates the section of the questionnaire (for the faculty questionnaire, most variable names begin with the letters A through F, corresponding to Sections A-F in the questionnaire; for the institution questionnaire, A, B, or C correspond to Section I, II and III respectively). Questions are then numbered consecutively within sections, with sub-questions indicated by a letter following the question number.

2.4 Derived Variables

For NSOPF-93, institution-level and faculty-level derived variables were created in order to simplify access to standard queries likely to be of use to analysts and to enhance substantive analysis. This set of derived variables has been carefully constructed and added to the faculty and institution data files. The public-use faculty file includes 43 derived variables found not to pose significant disclosure risks. The institution file contains 36 institution-level derived variables. A description of the specifications used to create these derived variables is found in Appendix B.

Institution-level derived variables. Most of the institution-level derived variables were created by NCES using multiple sources of data including: the 1991-92 IPEDS (Integrated Postsecondary Education Data System), the Carnegie classification system, and NSOPF-93 sampling information. Most of the institution-level derived variables were created directly from IPEDS data. The last element of the SAS variable name for institution-level derived variables consists of two characters, an underscore and a zero “_0” (e.g., *X01_0*, *X02_0*, *X03_0*, etc.). This component of the variable name signifies both that the variable is an institution-level derived variable and that an outside data source was used when creating it (derived variables *X01_0* through *X37_0*).¹⁷

The following example is a variable derived from IPEDS data; the “_0” indicates that it is an institution-level variable. The variable title created for documentation purposes appears below the variable name. Below that is the CODE which defines the value of the variable.

¹⁷Although there are 36 institution-level derived variables, they are numbered from X01_0 to X37_0. NCES decided to drop the derived variable numbered X03_0 from final data files.

X02_0

Institution strata (modified NSOPF-88 categories)

CODE:

- 1=Public research (I_AFF=1, I_CNG=11 or 12)
- 2=Private research (I_AFF=2, I_CNG=11 or 12)
- 3=Public doctoral, including medical (I_AFF=1, I_CNG=13 or 14 or 52)
- 4=Private doctoral, including medical (I_AFF=2, I_CNG=13 or 14 or 52)
- 5=Public comprehensive (I_AFF=1, I_CNG=21 or 22)
- 6=Private comprehensive (I_AFF=2, I_CNG=21 or 22)
- 7=Private liberal arts (I_AFF=2, I_CNG=31 or 32)
- 8=Public two year (I_AFF=1, I_CNG=40)
- 9=Other, including private 2-year institutions, public liberal arts institutions and religious and other specialized institutions, except medical (I_AFF=1 and I_CNG=31 or 32, I_AFF=2 and I_CNG=40, I_CNG=51, 53-65)

Description of the Derived Variable:

This variable creates the “institution type and control” stratification used in tables in the NCES reports *Institutional Policies and Practices Regarding Faculty in Higher Education* [NCES 97-080] and *Instructional Faculty and Staff in Higher Education Institutions: Fall 1987 and Fall 1992* [NCES 97-470].

A modified 1987 Carnegie classification for the system was used to stratify institutions by control (public and private) and type (research, other Ph.D., comprehensive, liberal arts, medical, 2-year, religious, other and unknown.) For this variable, medical schools are categorized as either public doctoral or private doctoral.

| <u>Control</u> | <u>Type</u> |
|-------------------|--------------------------------|
| I_AFF=1 — Public | I_CNG=11 or 12 — Research |
| I_AFF=2 — Private | I_CNG=13 or 14 — Other Ph.D. |
| | I_CNG=21 or 22 — Comprehensive |
| | I_CNG=31 or 32 — Liberal arts |
| | I_CNG=40 — Two year college |
| | I_CNG=51 — Religious |
| | I_CNG=52 — Medical |
| | I_CNG=53 to 65 — Other |

For NSOPF-93 institutions with unknown Carnegie classifications, the value of *X02_0* was individually assigned based on information available from IPEDS.

Faculty-level derived variables. All faculty-level derived variables were created by NORC using data collected from the NSOPF-93 faculty questionnaire. Each faculty-level derived variable name begins with the letter “X”. The second and third elements of the variable name indicate in what order the derived variable was created from the primary survey variable or other source (e.g., *X01*, *X02*, *X03*, etc.). The last component of the derived variable name reflects the section and question in the NSOPF-93 faculty questionnaire from which the variable originated.

In the example below, “01” in the derived variable name, *X01A7*, indicates that this is the first variable derived from survey variable A7. The CODE identifies the values for the derived variable, based on the

survey variables' original coding scheme. The description explains how the survey variable (A7) was collapsed to create the derived variable.

X01A7

Tenure: Tenure status

CODE:

1=Tenured (Q7=1)

2=Not tenured (Q7=all other categories)

Description of the Derived Variable:

This derived variable was created from SAS variable A7 (section A, Question 7) to indicate tenure status of a faculty respondent during the 1992 fall term.

Survey variables from questions in the preface of the NSOPF-93 faculty questionnaire use a leading underscore in place of a section letter (e.g., *_I*, *_IA*, etc.); derived variables based on questions from the preface begin with the letter "X" and a number indicating order of creation, followed by the name of the survey variable (e.g., *X01_1*, *X02_2*, etc.).

Exhibit B-1 in Appendix B contains a list of the academic disciplines and codes used in several NSOPF-93 derived variables.

2.5 Use of Flags and Weights

Imputation procedures for missing data. In accordance with NCES standards and guidelines, all non-legitimate missing data in the public-use institution file were imputed. Imputation for item nonresponse was performed for each survey item to make the study results simpler to present and to allow consistent totals to be obtained when analyzing questionnaire items. Not applicable ("NA") responses were not imputed since these represented respondents who were not eligible to answer the relevant item. All missing data, including "refused" and "don't know" responses (except where "don't know" was treated as a valid response), were imputed.

Imputation flags. For each numeric questionnaire item or variable in the institution file, there is a corresponding imputation flag. Imputation flags, beginning with the letter "M," are appended to the end of the data file. Following the "M" is the name of the variable being imputed. Because of confidentiality concerns, no imputation flags are provided on the public-use faculty file.

Weights. The faculty data file was weighted to produce national estimates of faculty and instructional staff. The weights were designed to adjust for differential probabilities of selection and nonresponse at the institution and faculty levels. After excluding ineligible members from the sample, the adjusted faculty dataset weights sum to 1,033,966, the estimated total number of faculty and instructional staff in the target population.

The weights for the institution questionnaire were designed to provide national estimates of postsecondary institutions. To calculate weights for the institution data file, a respondent was defined as any institution from which an acceptable questionnaire was received. After excluding ineligible institutions, the adjusted weights sum to 3,188 institutions.

Thirty-three weight variables are attached at the end of each data set: one baseline respondent weight (labeled WEIGHT), used to weight the sample to the estimated universe population, and 32 replicate weights (RWGHT01-RWGHT32). The 32 replicate weights were calculated to provide variance estimates using balanced half-sample replication (BHS).

2.6 Notes on Variance Estimation

Using the balanced half-sample method. Thirty-two replicate weights are provided on the data files for use with the balanced half-sample (BHS) method of variance estimation. These weights have been created to handle the certainty stratum and to incorporate finite population correction factors for each of the 14 noncertainty strata. Two widely available software packages, WesVarPC^{®18} and PC CARP¹⁹, use replicate weights to estimate variances.

Analysts should be cautious about use of BHS-estimated variances that relate only to one stratum or to a group of two or three strata. Such variance estimates may be based upon far fewer than 32 replicates, and thus the variance of the variance estimator may be large.

Those using either the public-use faculty file or the institution file should also be cautious about cross-classifying data so deeply that the resulting estimates are based upon a very small number of observations. Analysts should interpret the accuracy of NSOPF-93 statistics in light of estimated standard errors and of the number of observations used in the statistics. Selection probabilities for faculty sampling strata were incorporated into the faculty weight variable, WEIGHT, which was fully adjusted for non-response. Therefore, to produce accurate statistical estimates, analysts need only to weight the sample by WEIGHT.

Using the Taylor-series approximation method. The public-use institution data file includes the sampling variable ISTRATUM (the institution sampling stratum variable) and PSU (the primary sampling unit) which can be used to calculate variances by the Taylor-series approximation method. In the Taylor-series method, ISTRATUM is used as the first-level stratification variable and PSU is designated the primary sampling unit. A “without replacement” variance estimation formula is recommended. To calculate appropriate finite population correction factors, the population counts for each strata of the institutional sampling variable, ISTRATUM, are needed. These population counts, derived from weighted frequencies for ISTRATUM, appear in Exhibit 2-1.

¹⁸Westat, Inc., *A User's Manual to WesVarPC[®]*, Version 2.0 (Rockville, Md.: Westat, Inc.), 1996.

¹⁹Fuller, Wayne C., *et al.*, *PC CARP IV*. (Ames, Iowa: Statistical Laboratory, Iowa State University), 1986.

| Exhibit 2-1: Population counts for sampling stratum variable ISTRATUM | | |
|--|---|-------------------------|
| Stratum | Description | Population Count |
| 1 | Private, other Ph.D. | 46 |
| 2 | Public, comprehensive | 324 |
| 3 | Private, comprehensive | 262 |
| 4 | Public, liberal arts | 43 |
| 5 | Private, liberal arts | 558 |
| 6 | Public, medical | 29 |
| 7 | Private, medical | 23 |
| 8 | Private, religious | 278 |
| 9 | Public, two-year | 954 |
| 10 | Private, two-year | 139 |
| 11 | Public, other | 38 |
| 12 | Private, other | 176 |
| 13 | Public, unknown | 81 |
| 14 | Private, unknown | 70 |
| 15 | Certainty stratum, including public, research; private research; public, other Ph.D. | 168 |

All 168 institutions in the certainty stratum (ISTRATUM=15) were selected into the sample, and 144 of them responded to the institution questionnaire. Thus, aside from a small nonresponse variance, the variability associated with this stratum is essentially zero. Therefore, for users of the NSOPF-93 public-use institution data file, two cautions about the estimates of sampling variability are noted. First, if a comparison is to be made between the class of institutions in the certainty stratum and other classes of institutions, then (as an approximation) it is recommended that the variance of the estimator for the certainty stratum be set equal to zero, or that a without-replacement type variance formula be used for the certainty stratum with an appropriate finite population correction factor to account for random nonresponse variance. The former recommendation is equivalent to setting the variance of the estimated difference equal to the variance of the estimator for the noncertainty class.

Second, if analysis calls for certainty and noncertainty institutions to be combined, then appropriate standard errors should be calculated. For example, in the institution strata formed by the variable X02_0, noncertainty institutions are divided into seven (out of nine) modified Carnegie strata, and institutions selected with certainty are divided into three strata: "Public research," "Private research," and "Public

doctoral.”²⁰ The two research strata include *only* certainty institutions, and thus any estimators of variance for these strata should follow the recommendations presented above. Standard errors must be calculated for estimators for the public doctoral stratum, however, because it includes both certainty and noncertainty institutions (i.e. medical institutions).

Even in the case of the 14 noncertainty strata, many of the sampling fractions are important. Thus, we recommend that a without-replacement type variance formula — incorporating appropriate finite population correction factors — be used for these strata also. Specialized computer programs, such as SUDAAN²¹ and CENVAR²² are often used to estimate variances for complex sample designs, such as the NSOPF-93 design.

2.7 Using SAS and SPSS to Analyze the Datasets

The NSOPF-93 public-use CD-ROM contains several types of files useable by SAS and SPSS. Specifically, these are SAS and SPSS command files, ASCII data files, permanent SAS datasets, and SPSS portable files. The types of files on the CD-ROM are:

1. **Raw data files** (.DAT extension).
2. **SAS command files** (.SAS extension) to create permanent SAS datasets and to generate frequencies from the data files.
3. **SAS for Windows Version 6.03 datasets** (.SSD extension), generated from the SAS command file.
4. **SPSS for Windows “include” files** to create SPSS datasets and to generate frequencies from the data files. The SPSS cards (.SPS extension) are provided in their entirety since different platforms have different limitations in SPSS.
5. **SPSS for Windows Version 6.0 saved system file** (.SAV extension), generated from the SPSS for Windows “include” command files.
6. **Item frequencies** are included as ASCII files (.TXT extension).
7. **Documentation files.**

²⁰Note that the modified Carnegie stratum labeled “Public doctoral” is not equivalent to the set of “Public, other Ph.D.” institutions which form part of the certainty stratum in the sampling variable, since the “Public doctoral” stratum includes medical institutions.

²¹Shah, Babubhai V., Beth G. Barnwell and Gayle S. Bieler, *SUDAAN User's Manual Release 6.4*. (Research Triangle Park, N.C.: Research Triangle Institute), 1995.

²²U.S. Bureau of the Census, *CENVAR IMPS Version 3.1* (Washington D.C.: U.S. Bureau of the Census), 1995.

Each of the data files include the following items for each respondent:

a. Faculty file (166 variables):

Variables included on each record:

- (1) Encrypted ID number (9 digits)
- (2) Faculty questionnaire data (89 variables)
- (3) 43 derived variables (institution level and faculty-level)
- (4) WEIGHT
- (5) 32 replicate weights (RWGHT01-RWGHT32)

b. Institution file (640 variables):

Variables included on each record:

- (1) Encrypted ID number (6 digits)
- (2) Institution questionnaire data (284 variables)
- (3) 36 derived variables (institution-level only)
- (4) WEIGHT
- (5) 32 replicate weights (RWGHT01-RWGHT32)
- (6) ISTRATUM and PSU sampling variables
- (7) Imputation flags ("M") (284 variables)

The naming conventions for these basic file types are:

- ASCII data files with the filename extension *.DAT contain NSOPF-93 faculty- and institution-level data. These ASCII data files serve as input for SPSS and SAS command files.
- ASCII files with the filename extensions *.SAS and *.SPS are SAS and SPSS command files, respectively. Each such file contains SAS or SPSS command statements, variable label information, and variable format information. These SAS and SPSS command files read the ASCII data files (*.DAT) containing the faculty- and institution-level data to create temporary or permanent SAS/SPSS datasets.
- Files with the file name extension *.SSD indicate SAS Version 6.03 permanent datasets.
- Files with the name extension *.SAV indicate SPSS for Windows Version 6.0 permanent datasets.

2.7.1 Getting Started With NSOPF-93 SAS and SPSS files

Both SAS and SPSS can be used with the data files, and the appropriate program files or control cards are provided on the CD-ROM. All SAS-PC and SPSS program code should be edited. While most of the program code is functional, users may wish to change the output file names and some labels. SPSS code for FREQUENCIES and DESCRIPTIVES is included even if no variables are listed; delete such entries. SAS code includes a FORMAT statement without a procedure to use it; either delete this or add a PROC statement.

Using SAS command files. Path statements in each SAS command file should be modified to reflect local system settings. After the command files have been modified, they can be submitted to the appropriate processor. Each SAS command file on the NSOPF-93 CD-ROM is designed to produce frequencies for all variables by default. Additional statements may be added to the command file to produce other output according to users' analytic interests (e.g., descriptive statistics, cross tabulations, etc.).

Using SAS system files. The permanent SAS dataset (Version 6.03) can be accessed using conventional SAS statements. Once a library created in a LIBNAME statement is referenced, the permanent SAS dataset (denoted by the extension *.SSD) can be accessed by a "SET" statement. See the code example below:

```
LIBNAME NSOPF 'E:\PUBFAC93\';  
  
DATA PUBFAC;  
    SET NSOPF.PUBFAC93; /* PUBFAC93.SSD is the name of the data file */  
PROC CONTENTS;  
RUN;
```

Using SPSS include files. Path statements in each SPSS command file and the include file command should be modified to reflect systems settings. Each SPSS command file on the NSOPF-93 CD-ROM is designed to produce frequencies for all variables in the data file by default. Additional statements may be added to the command file to produce other output according to analytical interests (e.g., descriptive statistics, cross-tabulations, etc.).

In SPSS for Windows, select from the SPSS/W command bar SPSS File>New> SPSS Syntax. Next, in the SPSS/W editor for this new file, use the SPSS syntax similar to the example below to invoke the SPSS command file. Users of the DOS version of SPSS can use the same syntax at the SPSS command line. For example:

```
INCLUDE FILE = 'E:\INST93\INST93.SPS.'
```

2.7.2 Optimizing SAS and SPSS programs

Processing time and disk space are critical resources for most analysts. Running optimized programs and conserving disk space allows users to submit more jobs and to store more data. Some suggestions for increasing the efficiency of your programs and for saving storage space are included below.

Checking your SAS and SPSS syntax. Select zero cases for the first SAS or SPSS run. Building a data set with zero cases takes very little processor time and provides a quick method to allow the SAS/SPSS processor to verify the command file syntax. In SAS command and system files, use the OBS=0 data set option to verify SAS syntax,

```
OPTIONS OBS=0;
```

In SPSS the 'N 0.' command serves the same function,

```
N 0.  
DATA LIST FILE = 'E:\PUBFAC93\PUBFAC93.DAT' FIXED RECORDS=3.
```


Use the NCES-defined derived and classification variables. These variables were carefully constructed and tested. In addition, some of the derived variables were created from data sources outside of the NSOPF-93 data sets.

Create smaller, more manageable, data subsets. Building, merging or recoding large datasets requires large amounts of disk space, processing time and computer memory capacity. Problems with system and space limitations can be avoided by carefully planning analyses ahead of time. Only variables relevant to planned analysis should be selected. Then, they can be included in smaller, more manageable, data subsets.

Keep only the variables needed for analysis. In SAS and SPSS, data subsets can be created using DROP and KEEP options. In SAS, data subsets are created using the '(KEEP=...;)' and '(DROP=...;)' options in the 'SET...;' statement and/or in the 'DATA...;' statement when creating the SAS data set,

```
DATA FACULTY (KEEP=CASEID A4);
```

In SPSS, permanent data subsets can be created using the '/(DROP...)' and '/(KEEP...)' options in the '(SAVE OUTFILE=...)' statement,

```
SAVE OUTFILE = 'C:\FAC93.SAV' /DROP = CASEID A4.
```

It is more efficient (but not essential) for variables in the KEEP statement to be listed in the same order as they occur in the main system file. The KEEP statement does not reorder the variables in the new data set.

Keep only the records needed for analysis. In SAS, sub-setting "IF" statements can be used to build datasets that include only the records needed for analysis (IF <SAS variable name> = <condition> ;). Sub-setting IF statements are placed immediately after the last SAS input statement. See the example below:

```
DATA NSOPF93;  
  INFILE INDATA LRECL=1024 MISSOVER;  
INPUT  
  CASEID      1-9      /*CASEID*/  
  A4          12-13;   /*FACULTY STATUS*/;  
IF A4=1;  
RUN;
```

These control statements will build a data set containing the variables CASEID and A4 where the variable A4 value is equal to 1. In other words, this dataset selects for analysis only cases (CASEIDS) of part-time faculty (A4=1). Please note that variance estimation packages based on Taylor-series approximations require un-subsetted data.

Another technique to save disk space and processing time in SAS. Use the '(LENGTH=...)' statement. The default length in SAS is 8 and the minimum length declaration is 3 for numeric variables. If most of the variables selected for analysis can be stored in 3 bytes rather than the default 8 bytes, any system files created will be one-half the size and will run twice as fast as programs using the SAS default settings. Length statements are included with all NSOPF-93 command files and should be used wherever possible.

2.8 Guide to Hardcopy Codebooks

The hardcopy codebooks provide a comprehensive description of the public-use faculty and institution data files. For each variable, the codebook provides a summary of the related information. The question number and wording, the variable's position and format, and the responses to the item along with their unweighted frequency and percent and weighted percent are shown. Hardcopy codebooks for both public-use faculty data file and the public-use institution file can be found on the CD-ROM. An example of a codebook entry, drawn from the public-use faculty data file codebook, appears in Exhibit 2-2.

Exhibit 2-2: Codebook entry: NSOPF-93 faculty questionnaire

| | | |
|-----------------|---------|---------------|
| Variable: B15_4 | Numeric | Pos: (1)32-33 |
|-----------------|---------|---------------|

GRAD SCHOOL: FELLOWSHIP

When you were in graduate school, which of the following forms of financial assistance, if any, did you receive?
[FELLOWSHIP]

| RESPONSE | CODES | FREQ | PER CENT | WGHTD PCT |
|---------------------|-------|-------|----------|-----------|
| Yes..... | 1 | 5629 | 21.8% | 22.7% |
| No..... | 2 | 17879 | 69.4% | 77.3% |
| RESERVED CODES: | | | | |
| NOT APPLICABLE..... | -5 | 2272 | 8.8% | (miss) |
| TOTALS: | | 25780 | 100.0% | 100.0% |

Key

Variable: This field contains the name of the variable in the datafile.

Numeric: This label identifies the type of variable. Almost all variables are numeric. The word "Character" appears in this field for an alphanumeric variable.

Pos: This item represents the position and gives the line number within each record (in parentheses) and the column number within the line for the variable.

Grad School: Fellowship: This is a sample of a variable name. All variable names appear in this field. The question wording from the questionnaire appears below the variable name.

Response: This item provides the original response categories or ranges for continuous variables, as well as categories added during editing to code legitimate responses (in the case of questionnaire items) or to add the recoded or constructed response categories (for derived variables) and data indicators such as flags.

Codes: This item provides the actual numerical codes that appear on the data file in the position specified.

Freq: This item shows the unweighted frequency counts for all records that were processed, including records that have missing data codes or legitimate skips.

Percent: This column displays the unweighted frequency counts as percentages. All records processed are included.

Wghtd Pct: This column displays percentages based on response codes weighted up to the relevant population. Cases coded with reserved codes (see below) are excluded.

Reserved codes: “Not applicable” (-5), and “Don’t know” (-2), where they appear, were valid coded values. Other reserved codes are “not in IPEDS” (-7) used to indicate data missing from IPEDS for certain derived variables, and “Text absent” (-3) where an expected text response was missing.

Legitimate Skip: Because of responses to preceding filter questions, this indicates data should not be present for this item by some respondents; that is, the value is legitimately missing.

2.9 NSOPF-93 Electronic Codebook (ECB) for Institution Files

A NSOPF-93 electronic codebook (ECBs) is available to users of the institution file. The ECB combines the convenience, simplicity and cost efficiencies of personal computers (PCs) with CD-ROM technology. It is easily accessible with the MS-Windows operating system and statistical and word processing software to which most users are accustomed. However, a user must already have access to SAS or SPSS (DOS or Windows).

The ECB can be used to select variables for subsequent analysis, to write SAS or SPSS-PC code for file construction of the designated variables, and to generate a codebook of the chosen set of variables. For each variable, two windows of information are available:

- Unweighted frequencies, percentages, codes, and labels
- Item wording and other descriptive text

The user has the option of selecting SAS-PC code, including PROC FORMAT labeling, SPSS-PC for DOS or Windows code, SPSS for Windows 6.0 code, IDs for merging modules automatically included in SAS/SPSS code, and ASCII text for a printed codebook.

The ECB software is designed to acquaint the user with the available survey measures and responses by means of on-line, fully documented codebooks. Users may browse through the documentation, searching on variable names, labels, and question text to find items that are suitable for their research questions. Users can move quickly in the ECB between questionnaire items or derived variables.

The process culls a set of variables, and only those variables, that are appropriate to the user’s own research needs. Since variable names and labels are already in electronic form on the ECB, time-consuming tasks (such as typing in this information) are eliminated. The ECB permits users to write SAS-PC or SPSS-PC program code and/or command statements in order to construct system files of the selected variables. Finally, a print file of a codebook containing unweighted frequencies only for the tagged items is another ECB option. The print file may subsequently be used to generate individualized hardcopy codebooks of the selected variables, providing a convenient reference during subsequent data analyses.

In order to use the ECB technology, the following are required:

- a CD-ROM reader;
- an IBM-compatible personal computer (PC), minimally a 286 system;
- up to 10 MB of space on the PC for the full ECB system²³; and
- at least 1.2 MB of space for the public-use institution data file.

²³Space requirements will vary according to a number of factors: the ECB component that is selected, the number of variables chosen for generation of a hardcopy codebook, and the statistical software the researcher uses.

The NSOPF-93 Compact Disc includes installation procedures, programs and files required by the codebook system, the raw data files, and user's manual (in WordPerfect format).

Appendix A

Description of Data Collection Instruments (1988 and 1993)

Data Collection Instruments

A.1 Overview

This chapter provides a brief description of the two survey instruments developed and used in NSOPF-93: the faculty questionnaire and the institution questionnaire. Both instruments were designed as self-administered questionnaires (SAQs). A CATI (computer-assisted telephone interview) version of the faculty questionnaire was also developed and used during the follow-up data collection effort. Copies of the NSOPF-93 self-administered instruments appear on the CD-ROM.

A.2 Development of Questionnaire Items

Several research and policy concerns guided questionnaire development. One of the overriding objectives was to preserve as many of the 1988 items as were relevant and feasible. But this goal had to be balanced with the need to address recent policy issues that had emerged since the previous study. In order to balance these aims, it was necessary to identify, to revise, or to eliminate some questionnaire items that were either problematic or were no longer relevant to the broader issues.

For both the field test and the full-scale study, questionnaire items were constructed based on input from several sources, including the 1988 questionnaires, other postsecondary education surveys, the NSOPF-93 National Technical Review Panel (NTRP), and project staff and consultants. Questionnaire items for the full-scale study were further revised (or deleted) based on the results of the 1992 NSOPF field test and recommendations from the NTRP.

The 1988 institution and faculty questionnaires were used as a point of departure in determining which items should initially be preserved, expanded, or revised for the NSOPF-93 field test and later for the full-scale study. One major change was the definition of faculty used in the 1993 cycle of NSOPF. While the 1988 survey collected data from full- and part-time faculty who provided instruction for credit, the 1993 sample was expanded to include non-instructional faculty, as well as instructional faculty and staff. The consensus resulting from the NTRP meetings was that the population of non-instructional personnel with faculty status was too important to exclude from the study.

In addition, NSOPF-93 eliminated the Departmental Chairperson survey (a major part of the 1988 cycle) in favor of larger faculty and institution samples.²⁴ Because the items in this survey were best addressed by the department chairperson, it was deemed advisable to incorporate only a few of the questionnaire items from this earlier survey into the NSOPF-93 faculty or institution questionnaire.

²⁴The final status of the department chairperson survey has not been determined for future NSOPF cycles.

In the process of developing the questionnaires, a variety of related postsecondary education studies were reviewed,²⁵ and some of their items were incorporated into the questionnaires for the field test and the full-scale study. Exhibit A-1 describes items in the institution questionnaire by content area and links specific questions to the 1988 institution questionnaire. As no public-use faculty file was produced for NSOPF-88, a similar comparison of questionnaire items is not available for faculty data. Copies of the 1988 questionnaires also appear on the CD-ROM.

A.3 Faculty Questionnaire

The faculty questionnaire was designed to address a variety of policy-relevant issues about higher education faculty and their institutions, including: (1) the background characteristics and current activities of instructional and non-instructional faculty; (2) the supply of, and demand for, faculty in postsecondary institutions; (3) faculty as both a resource and a consumer of resources; and (4) faculty attitudes and behaviors about key aspects of the higher education environment.

Given the changed definition of faculty, questions were added about research-only and other non-instructional faculty members to an instrument that had previously sought information only about instructional faculty. The faculty questionnaire was also revised to emphasize behavioral rather than attitudinal questions in order to collect data on who the faculty are; what they do; and whether, how, and why the composition of the nation's faculty is changing. The questionnaire addressed:

- background characteristics and academic credentials;
- workloads and time allocation between classroom instruction and other activities such as research, course preparation, consulting, public service, doctoral or student advising, conferences, and curriculum development;
- compensation, and the importance of other sources of income, such as consulting fees, royalties, etc., or income-in-kind;
- roles and differences, if any, between full- and part-time faculty in their participation in institutional policy-making and planning;
- faculty attitudes toward their jobs, their institutions, higher education, and student achievement in general;
- changes in teaching methods, and the impact of new technologies on teaching techniques;
- career and retirement plans;

²⁵Institute of Social Research, York University, *The Academic Profession in Canada* (York, Ontario: Institute of Social Research, 1986); Harvard University, *1967 Survey of Faculty* (Cambridge, Mass.: Harvard University, 1967); Higher Education Research Institute, *1989 Faculty Survey* (Los Angeles: Higher Education Research Institute, 1989); National Center for Research to Improve Postsecondary Teaching and Learning, *Faculty at Work: A Survey of Motivations, Expectations, and Satisfaction* (Ann Arbor, Mich.: University of Michigan, 1987); Carnegie Foundation for the Advancement of Teaching, *National Survey of Faculty* (Princeton, N.J.: Carnegie Foundation for the Advancement of Teaching, 1984 and 1989).

- differences between those who have instructional responsibilities and those who have no instructional responsibilities, such as those engaged only in research; and
- differences between those with teaching responsibilities but no faculty status and those with teaching responsibilities and faculty status.

The design of the full-scale study questionnaire required input from NCES, the National Science Foundation (NSF), the National Endowment for the Humanities (NEH), and the NSOPF-93 National Technical Review Panel (NTRP), as well as an analysis of the data collected using the field test questionnaire. Respondent comments collected during the field test were reviewed and a debriefing was held with field test interviewers. Respondent and interviewer comments are summarized in the *1992-93 National Study of Postsecondary Faculty Field Test Report* [NCES 93-930]. Many questions, or subparts of questions, were deleted from the field test questionnaire based on high nonresponse or low reliability. Questions which were retained were sometimes modified to be clearer or more understandable. Some new items were added based on NTRP recommendations.

A.4 Institution Questionnaire

The institution questionnaire for the full-scale study was divided into three major sections, dealing with full-time instructional faculty and staff, part-time instructional faculty and staff, and full-time non-instructional faculty, respectively. As noted above, the inclusion of non-instructional faculty was new to NSOPF-93. Because institutional definitions of faculty vary widely, a question asked each institution for its own definitions of full- and part-time faculty, both instructional and non-instructional. The institution questionnaire obtained information on:

- the numbers of full- and part-time instructional and non-instructional faculty, as well as instructional personnel without faculty status, and their distributions by employment status (i.e. full-time, part-time) and tenure status (based on the definitions provided by the institution);
- institutional tenure policies and changes in policies on granting tenure to faculty members;
- the impact of tenure policies on the influx of new faculty and on career development;
- the growth and promotion potential for existing non-tenured junior faculty;
- the benefits and retirement plans available to faculty; and
- the turnover rates of faculty at the institution.

The institution questionnaire used in the full-scale study was quite different in content area from the field test questionnaire. The results of the field test were reviewed by NCES, the NSOPF-93 NTRP and members of the Association for Institutional Research (AIR) in order to revise the questionnaire to capture as much data as possible while minimizing respondent burden. One of the major changes between the field test and the full-scale study was the elimination of items that asked for counts of minority and female faculty. Based on field test results and discussions with the NTRP, it was apparent that many institutions could not provide accurate information. Others refused to respond. In addition, the full-scale questionnaire included a glossary to highlight the operational definitions being used in the survey (e.g., instructional faculty versus non-

instructional faculty) but also asked for the respondent to provide institutional definitions of permanent, temporary, full- and part-time faculty. Separate benefits questions were added for temporary full-time faculty and instructional staff. Another set of questions on institution subsidization of benefits was added as well.

Other changes between the field test and full-scale study included the addition of items asking about institutional downsizing. These items were included because of recommendations from NTRP and AIR members, and because institutions were reporting the loss of faculty due to fiscal constraints. Another recommendation of the NTRP was to collect data on the percentage of full- and part-time faculty represented by a union for purposes of collective bargaining. For more discussion of the field test, see the *1992-93 National Study of Postsecondary Faculty Field Test Report* [NCES 93-390].

**Exhibit A-1: NSOPF institution questionnaire: content and linkage
of items between 1988 and 1993 NSOPF cycles**

| Content area | NSOPF-93 institution questionnaire question | Source question from 1988 institution questionnaire | Source question from 1988 department questionnaire | How NSOPF-93 question differs from NSOPF-88 question |
|--|---|---|--|--|
| Institutional definitions of faculty | New | | | |
| Numbers of full/part-time faculty/staff, Fall 1992 | 1 Revised | 4,5,19 | | Combined questions from NSOPF-88 into one question. Omitted asking specifically for "full-time faculty with visiting, acting, or adjunct appointments" |
| Section I: Full-time instructional faculty/staff Changes in total of permanent staff 1991-92 | 2 Revised | 6 | | Wording changes: From: "How many full-time instructional faculty did your institution have in each of the following categories?" To: "Please provide the following information about changes in the number of permanent full-time instructional faculty/staff between the 1991 and 1992 Fall Terms." Change in response categories: Reordered sub-items, added "d. Number...who left because of downsizing..." |
| Number of permanent staff institution sought to hire | 3 Revised | | 13 | Wording change: From: "For how many unfilled full-time instructional faculty positions in your department were candidates being hired?" To: "How many permanent full-time instructional faculty/staff did your institution seek to hire for the 1992 Fall Term?" |
| Number of permanent instructional positions not filled | 4, 4A New | | | |
| Tenure system | 5 Revised | 3 | | Deleted "for any of your" |
| Number of tenured/tenure track staff 1991/1992 | 6 Revised | 8 | 9 | Reformatted answer matrix |
| Number of tenured staff who left between 1991-92 | 7 Revised | 9 | 10 | Slight change in question wording. Change in response categories: Deleted "to assume another position," "formally removed for cause," and "dismissed because of institutional budget pressures or program closure" Added "downsizing" |
| Number of staff considered for/granted tenure | 8 | 7 | 8 | |

| Content area | NSOPF-93 institution questionnaire question | Source question from 1988 institution questionnaire | Source question from 1988 department questionnaire | How NSOPF-93 question differs from NSOPF-88 question |
|--|---|---|--|--|
| Maximum number of years on tenure track | 9 Revised | 10, 12 | 11 | <p>Wording change: From: "Is there a maximum number of years an instructional faculty member can be on tenure track and not receive tenure at your institution?" To: "Fill in the following information about the maximum number of years..."</p> <p>Change in response categories: Added "9b. If maximum number of years has changed..." from NSOPF-88 question 12.</p> |
| Changes in tenure policy in last 5 years | 10 Revised | 12 | | <p>Change in question wording: From "three years" to "five years"</p> <p>Change in response categories: Deleted "offered optional early or phased retirement"; asked separately in question 11. Deleted "changed the upper limit on the percentage of full-time faculty who may be tenured" and "changed the maximum number of years a person can be on tenure track..."</p> |
| Early or phased retirement policy (permanent staff) | 11 Revised | 12 | | See note for question 10. |
| Retirement plans available to permanent staff | 12 Revised | 15 | | <p>Reformatted question wording slightly; deleted asking for approximate number of faculty participants; reformatted response matrix</p> <p>Change in response categories: Reordered categories, added "b. Other 403B plan" and "d. 401K or 401B plan" from "401(k) or 403(b) plan"</p> |
| Employee benefits (permanent staff) | 13 Revised | 14, 16 | | <p>Changes in question wording: Added "permanent" to question, added "If available, indicate whether the benefit is subsidized or not subsidized by your institution."</p> <p>Change in response categories: Reordered categories, added k. Transportation/parking n. Medical insurance for retirees o. Cafeteria-style plan...</p> |
| Percent of salary contributed to benefits by institution | 14 Revised | 17 | | <p>Changes in question wording: Added "permanent" to question text</p> |
| Availability of benefits to temporary faculty | 15 *New | 14 | | <p>Changes in question wording: Added "temporary" to question text</p> |

| Content area | NSOPF-93 institution questionnaire question | Source question from 1988 institution questionnaire | Source question from 1988 department questionnaire | How NSOPF-93 question differs from NSOPF-88 question |
|---|---|---|--|--|
| Employee benefits (temporary faculty) | 16 *New | 14 | | See changes for question 13; added "temporary" in question text |
| Percent of undergraduate instruction by full-time staff | 17 New | | | |
| Teacher assessment | 18 Revised | | 19 | Changes in question wording: From: "In which of the following ways, if any, is the teaching performance of full-time faculty assessed in your department?" To: "Are any of the following used in assessing teaching performance of full-time (permanent or temporary) instructional faculty/staff at this institution?" Change in response categories: Changed c. from "student placement or honors" to "student career placement" |
| Collective bargaining | 19, 19A | 13 | 17 | Changes in question wording: Added "with this institution" |
| Section II: Full-time non-instructional faculty Changes in total of permanent staff 1991/92 | 20 *New | 6 | | See note for question 2 |
| Tenure system | 21 *New | 3 | | See note for question 5 |
| Number of tenured/tenure track staff 1991/1992 | 22 *New | 8 | 9 | See note for question 6 |
| Number of tenured staff who left between 1991-92 | 23 *New | 9 | 10 | See note for question 7 |
| Number considered for/granted tenure | 24 *New | 7 | 8 | See note for question 8 |
| Maximum number of years on tenure track | 25 *New | 10 | 11 | See note for question 9 |
| Changes in tenure policy in last 5 years | 26 *New | 12 | | See note for question 10 |
| Early or phased retirement policy (permanent staff) | 27 *New | 12 | | See note for question 11 |
| Retirement plans available to permanent staff | 28 *New | 15 | | See note for question 12 |

| Content area | NSOPF-93 institution questionnaire question | Source question from 1988 institution questionnaire | Source question from 1988 department questionnaire | How NSOPF-93 question differs from NSOPF-88 question |
|---|---|---|--|--|
| Employee benefits (permanent staff) | 29 *New | 14 | | See note for question 13 |
| Percent of salary contributed to benefits by institution | 30 *New | 17 | | See note for question 14 |
| Availability of benefits to temporary faculty | 31 *New | 14 | | See note for question 15 |
| Employee benefits (temporary faculty) | 32 *New | 14 | | See note for question 16 |
| Collective bargaining | 33,33A *New | 13 | 17 | See note for question 19, 19A |
| Section III: Part-time instructional faculty/staff | | | | |
| Availability of retirement plans | 34 New | | | |
| Retirement plans: subsidized/nonsubsidized | 35 Revised | 23 | | See note for question 12 |
| Employee benefits | 36 New | | | |
| Employee benefits available | 37 *New | 24,14 | | See note for question 13 Also added p. "other" |
| Percent of salary contributed to benefits by institution | 38 Revised | 25 | | Question wording slightly revised |
| Eligibility criteria for benefits | 39 New | | | |
| Eligibility requirements for benefits | 40 New | | | |
| Percent of undergraduate instruction by part-time staff | 41 New | | | |
| Teacher assessment | 42 Revised | | 32 | See note for question 18 |
| Collective bargaining | 43, 43A | 22 | 29 | See note for question 19, 19A |

* Not asked in 1988 for this faculty type though asked for other types

Appendix B

NSOPF-93 Derived Variables

Documentation of Derived Variable Creation for Public Users

Exhibit B-1: Discipline Crosswalk, NSOPF-93 Codes for Major Fields of Study and Academic Disciplines

1993 National Study of Postsecondary Faculty **Documentation of Derived Variable Creation for Public Users**

Public-Use Faculty File Derived Variables

X02_0

Institution strata (modified NSOPF-88 categories)

CODE:

- 1=Public research (I_AFF=1, I_CNG=11 or 12)
- 2=Private research (I_AFF=2, I_CNG=11 or 12)
- 3=Public doctoral, including medical (I_AFF=1, I_CNG=13 or 14 or 52)
- 4=Private doctoral, including medical (I_AFF=2, I_CNG=13 or 14 or 52)
- 5=Public comprehensive (I_AFF=1, I_CNG=21 or 22)
- 6=Private comprehensive (I_AFF=2, I_CNG=21 or 22)
- 7=Private liberal arts (I_AFF=2, I_CNG=31 or 32)
- 8=Public two-year (I_AFF=1, I_CNG=40)
- 9=Other, including private 2-year institutions, public liberal arts institutions and religious and other specialized institutions, except medical (I_AFF=1 and I_CNG=31 or 32, I_AFF=2 and I_CNG=40, I_CNG=51, 53-65)

Description of the Derived Variable:

This variable creates the “institution type and control” stratification used in tables in the NCES reports *Institutional Policies and Practices Regarding Faculty in Higher Education* [NCES 97-080] and *Instructional Faculty and Staff in Higher Education Institutions: Fall 1987 and Fall 1992* [NCES 97-470].

A modified 1987 Carnegie classification for the system was used to stratify institutions by control (public and private) and type (research, other Ph.D., comprehensive, liberal arts, medical, 2-year, religious, other and unknown.) For this variable, medical schools are categorized as either public doctoral or private doctoral.

Control

I_AFF=1 — Public
I_AFF=2 — Private

Type

I_CNG=11 or 12 — Research
I_CNG=13 or 14 — Other Ph.D.
I_CNG=21 or 22 — Comprehensive
I_CNG=31 or 32 — Liberal arts
I_CNG=40 — Two-year college
I_CNG=51 — Religious
I_CNG=52 — Medical
I_CNG=53 to 65 — Other

For NSOPF-93 institutions with unknown Carnegie classifications, the value of X02_0 was individually assigned based on information available from IPEDS.

X01_1

Role: Any instructional duties for credit

CODE:

1=Yes (Q1=1, Q1a=1 or 2)

2=No (Q1=1, Q1a=3 or Q1=2)

Description of the Derived Variable:

This variable was created from NSOPF-93 faculty survey data to indicate whether respondents had any instructional duties for credit during the 1992 Fall Term at the institution from which they were sampled. This included teaching one or more courses for credit, or advising or supervising academic activities for credit, e.g. individualized instruction. Questions 1 and 1A were the basis for this variable. Question 1 has a value of 1 if a respondent had any instructional duties in the 1992 Fall term, and 2 if they did not. Question 1A is 1 if all the respondent's instructional duties were related to credit courses, advising, or supervising academic activities for credit; 2 if only some duties were; and 3 if all the respondent's instructional duties were related to non-credit courses, advising, or supervising non-credit academic activities.

This variable was used to select instructional faculty for analysis in the NSOPF-93 publication *Instructional Faculty and Staff in Higher Education Institutions: Fall 1987 and Fall 1992* [NCES 97-470]. In that report, cases for which X01_1=1 identified instructional faculty.

X01A7

Tenure: Tenure status

CODE:

1=Tenured (Q7=1)

2=Not tenured (Q7=any other category)

Description of the Derived Variable:

This derived variable was created to indicate tenure status of respondents during the 1992 Fall Term.

X02A7

Tenure: Number of years tenured (1993 - Q7A)

CODE:

1=1-4 years

2=5-9 years

3=10-14 years

4=15-19 years

5=20 years or more

Description of the Derived Variable:

This derived variable was created to provide a calculation of the number of years a respondent has been tenured.

X01A9

Academic rank

CODE:

1=Full Professor (Q9=1)

2=Other rank (Q9=other than 1)

Description of the Derived Variable:

This derived variable was created to indicate if a respondent's academic rank, title or position at their sampled institution was "full professor" or some other rank. The other ranks include: Associate Professor, Assistant Professor, Instructor, Lecturer, Unspecified other rank, Visiting Faculty/Teacher/or unspecified, Professor Emeritus, Dean, Chairperson; Director, Head, Coordinator, Executive; Administration, Administrator; Management, Supervisor; Post-doctoral; Research Fellow/Scientist/Professor; President, Chancellor; Chaplain; Counselor, Mentor, Advisor; Librarian, Curator; Research Associate/Assistant; Secretary, miscellaneous clerical; Adjunct Faculty/Teacher/or unspecified; Coach

X01A10

Academic rank: Number of years since rank achieved (1993 - Q10)

CODE:

1=1 year

2=2 years

3=3 years

4=4 years

5=5-9 years

6=10-14 years

7=15-19 years

8=20 or more years

Description of the Derived Variable:

This derived variable was created to provide a calculation of years since a respondent first achieved the academic rank held in the 1992 Fall term.

X01A12

Program area: Teaching categories (sorted into eight categories)

CODE:

1=**Business** (Q12=160-170; includes business (160), accounting (161), banking and finance (162), business administration and management (163), business administrative support (164), human resources development (165), organizational behavior (166), marketing and distribution (167) and other business (170))

2=**Education** (Q12=220-250; includes general education (221), basic skills (222), bilingual and cross-cultural education (223), curriculum and instruction (224), education administration (225), education evaluation and research (226), educational psychology (227) special ed. (228), student counseling and personnel services (229) other education (230), teacher education-unspecified (240), pre-elementary (241), elementary (242), secondary (243), adult and continuing (244), other general teacher ed. programs (245) and teacher ed. in specific subjects (250))

3=**Fine arts** (Q12=140-150, includes art history and appreciation (141), crafts (142), dance (143), design (144), dramatic arts (145), film arts (146), fine arts (147), music (148), music history and appreciation (149), and other visual or performing arts (150))

4=**Health sciences** (Q12=330-340; includes health sciences-unspecified (330), allied health technologies (331), dentistry (332), health services administration (333), medicine (334), nursing (335), pharmacy (336), public health (337), veterinary medicine (338), and other health sciences (340))

5=**Humanities** (Q12=290-320, 480, 548; includes general English (291), composition (292), American lit. (293), English lit. (294), linguistics (295), speech (296), English as second language (297), other English (300), foreign languages-unspecified (310), Chinese (311), French (312), German (313), Italian (314), Latin (315), Japanese (316), other Asian (317), Russian (318), Spanish (319), other foreign languages (320), philosophy and religion (480), and history (548))

6=**Natural sciences and engineering** (Q12=200-210, 260-280; 390-440; includes computer science-unspecified (200), computer and information sciences (201), computer programming (202), data processing (203), systems analysis (204), other computer science (210), general, civil, mechanical, chemical, and other engineering (261-270), engineering-related technologies (280) biological sciences-unspecified (390), biochemistry (391), biology (392), botany (393), genetics (394), immunology (395), microbiology (396), physiology (397), zoology (398), other biological sciences (400), physical sciences-unspecified (410), astronomy (411), chemistry (412), physics (413), geological sciences (414), other physical sciences (420), mathematics (430), and statistics (440))

7=**Social sciences** (Q12=510, 540-547, 549-560; includes psychology (510), social sciences-unspecified (540), general social sciences (541), anthropology (542), archeology (543), area and ethnic studies (544), demography (545), economics (546), geography (547) international relations (549), political science (550), sociology (551), and other social sciences (560))

8=**All other fields** (Q12=100-110, 120-130, 180-190, 350, 360, 370, 380, 450, 460, 470, 490, 500, 520, 530, 570-900; includes includes agribusiness (101), agricultural sciences (102), renewable resources (103), other agriculture (110) architecture (120-130), communications (180-190), home economics (350), industrial arts (360), law (370), library and archival sciences (380), military studies (450), multi-interdisciplinary studies (460), parks and recreation (470), theology (490), protective services (500), public affairs (520), science technologies (530), vocational training (570), construction trades (600-610), consumer services (620-630), mechanics and repairers (640-644), precision production (660-670), transportation (680-690), and "other" (900))

Description of the Derived Variable:

This derived variable was created in order to identify the general program area of a respondent's principal field of teaching.

X01B16

Degree: Highest degree

CODE:

1=Ph.D. (Q16A1=2)

2=First professional (Q16A1=1)

3=Master's (Q16A1=3)

4=Bachelor's or less than bachelor's (Q16A1=4, 5, 6 or 7)

Description of the Derived Variable:

This derived variable was created in order to describe the highest degree or award achieved by a respondent. If a respondent reported both a Ph.D. and a first professional degree, X01B16 was coded as "1." (Ph.D.). The other degree categories at Question 16A1 are as follows:

1=Professional degree (M.D., D.D.S., L.L.B., etc.)

2=Doctoral degree (Ph.D., Ed.D., etc.)

- 3=Master's degree or equivalent
- 4=Bachelor's degree or equivalent
- 5=Certificate, diploma, or degree for completion of undergraduate program of more than 2 years but less than 4 years in length
- 6=Associate's degree or equivalent
- 7=Certificate, diploma, or degree for completion of undergraduate program of at least 1 year but less than 2 years in length

X05B20

Productivity, non-teaching: Career output for presentations, exhibitions (Q20A11+A12).

CODE:

- 0=0 presentations
- 1=1-4 presentations
- 2=5-9 presentations
- 3=10-14 presentations
- 4=15-19 presentations
- 5=20 presentations or more

Description of the Derived Variable:

This derived variable was created to report on one aspect of a faculty respondent's non-teaching productivity over the course of their career. This variable is based on totals reported at:

B20A11=Total number of presentations at conferences, workshops, etc. during career

B20A12=Total number of exhibitions or performances in the fine or applied arts during career ***X06B20***

Productivity, non-teaching: Career output for number of publications (total of Q20A1 through A10)

CODE:

- 0=0 publications
- 1=1-4 publications
- 2=5-9 publications
- 3=10-14 publications
- 4=15-19 publications
- 5=20 publications or more

Description of the Derived Variable:

This derived variable was created to report on most aspects of a respondent's non-teaching productivity over the course of their career. This variable is based on totals reported at:

B20A1=Total number of articles published in refereed professional or trade journals during career

B20A2=Total number of articles published in non-refereed professional or trade journals during career

B20A3=Total number of creative works published in juried media during career

B20A4=Total number of creative works published in non-juried media or in-house newsletters during career

B20A5=Total number of published reviews of books, articles, or creative works during career

B20A6=Total number of chapters in edited volumes during career

B20A7=Total number of textbooks during career

B20A8=Total number of other books during career

B20A9=Total number of monographs during career

B20A10=Total number of research or technical reports disseminated internally or to clients during

career

X12B20

Productivity, non-teaching: Output past 2 years for presentations, exhibitions (Q20B11+B12)

CODE:

0=0 presentations

1=1 presentations

2=2 presentations

3=3 presentations

4=4 presentations

5=5-9 presentations

6=10 or more presentations

Description of the Derived Variable:

This derived variable was created to report on one aspect of a faculty respondent's non-teaching productivity during the past 2 years. This variable is based on totals reported at:

B20B11=Number of presentations at conferences, workshops, etc. during past 2 years

B20B12=Number of exhibitions or performances in the fine or applied arts during past 2 years **X13B20**

Productivity, non-teaching: Output past 2 years for number of publications (total of Q20B1 through B10)

CODE:

0=0 publications

1=1 publications

2=2 publications

3=3 publications

4=4 publications

5=5-9 publications

6=10 or more publications

Description of the Derived Variable:

This derived variable was created to report on most aspects of a respondent's non-teaching productivity during the past 2 years. This variable is based on totals reported at:

B20B1=Number of articles published in refereed professional or trade journals during past 2 years

B20B2=Number of articles published in non-refereed professional or trade journals during past 2 years

B20B3=Number of creative works published in juried media during past 2 years

B20B4=Number of creative works published in non-juried media or in-house newsletters during past 2 years

B20B5=Number of published reviews of books, articles, or creative works during past 2 years

B20B6=Number of chapters in edited volumes during past 2 years

B20B7=Number of textbooks during past 2 years

B20B8=Number of other books during past 2 years

B20B9=Number of monographs during past 2 years

B20B10=Number of research or technical reports disseminated internally or to clients during past 2 years

X03C21

Productivity, non-teaching: Total committees served on (Total Q21A)

CODE:

0=No committees

1=1-2 committees

2=3-5 committees

3=6 or more committees

Description of the Derived Variable:

This derived variable was created to report a respondent's non-teaching productivity based on total committees served on during the 1992 Fall Term. This variable is based on totals reported at:

B21A1=Number of undergraduate thesis or dissertation committees served on

B21A2=Number of undergraduate comprehensive exams or orals committees (other than as part of thesis/dissertation committees) served on

B21A3=Number of undergraduate examination/certification committees served on

B21A4=Number of graduate thesis or dissertation committees served on

B21A5=Number of graduate comprehensive exams or orals committees (other than as part of thesis/dissertation committees) served on

B21A6=Number of graduate examination/certification committees served on

X01C23

Productivity, teaching: Total hours spent teaching per week in 5 or fewer classes for credit (Q23A2G+B2G+C2G+D2G+E2G, or if imputed, Q23A2C+B2C+C2C+D2C+E2C) was used.

CODE:

1=0-9 hours

2=10-14 hours

3=15-19 hours

4=20 or more hours

Description of the Derived Variable:

This derived variable was created to provide a calculation of the total number of hours spent teaching per week at five or fewer classes for credit, by adding together the hours spent teaching for each reported class. A maximum of five classes could be reported.

X02C23

Productivity, teaching: Total classroom student contact hours per week in 5 or fewer classes for credit [total sum of (Q23A2E × Q23A2G or Q23A2C, if G was imputed and C was not imputed)]

CODE:

1=0-49 hours

2=50-99 hours

3=100-199 hours

4=200-299 hours

5=300-399 hours

6=400 or more hours

Description of the Derived Variable:

This derived variable was created to provide a calculation of the total student contact hours per week with students in five or fewer classes for credit. For each class taught, the average number of hours per week the respondent taught the class is multiplied by the number of students enrolled in the class; the results are added

together to obtain the total student contact hours in five or fewer classes for credit.

X03C23

Productivity, teaching: Total classroom credit hours in 5 or fewer classes
(Q23A2B+B2B+C2B+D2B+E2B)

CODE:

1=0-9 hours

2=10-14 hours

3=15 or more hours

Description of the Derived Variable:

This derived variable was created to provide a calculation of the total number of classroom credit hours reported by adding together the number of credit hours for each class. A maximum of five classes could be reported.

X04C23

Productivity, teaching: Total classroom individual credit hours in 5 or fewer classes
[(C23A2B × A2E)+(C23B2B × B2E)+(C23C2B × C2E)+(C23D2B × D2E)+(C23E2B × E2E)]

CODE:

1=0-49 hours

2=50-99 hours

3=100-199 hours

4=200-299 hours

5=300-399 hours

6=400 or more hours

Description of the Derived Variable:

This derived variable was created to provide a calculation of the total student credit hours taught in the classes reported. For each class taught, the number of credit hours is multiplied by the number of students enrolled. The results are added together to obtain the total student credit hours taught in the classes reported. A maximum of five classes could be reported.

X05C23

Productivity, teaching: Level of classroom instruction

CODE:

1=Taught only undergraduate courses (Q23A3 and Q23B3 and Q23C3 and Q23D3 and Q23E3 NE 3)

2=Taught both undergraduate and graduate courses (at least one of Q23A3 or Q23B3 or Q23C3 or Q23D3 or Q23E3=3 and at least one of them=1, 2, or 4)

3=Taught only graduate courses (Q23A3 and Q23B3 and Q23C3 and Q23D3 and Q23E3=3)

Description of the Derived Variable:

This derived variable was created to report a respondent's primary level of classroom credit instruction in up to five courses taught for credit. Lower or upper division students as well as the category "all other students", are considered undergraduates. Graduate or any other post-baccalaureate students are considered graduate level students. If a respondent taught classes to primarily undergraduate level students and some to graduate level students then the classroom instruction was categorized as both.

X08C23

Productivity, teaching: Number of undergraduate classes taught for credit (5 or fewer)
(Q23A3 NE 3+B3 NE 3+C3 NE 3+D3 NE 3+E3 NE 3)

CODE:

0=No classes

1=1-2 classes

2=3 or more classes

Description of the Derived Variable:

This derived variable was created to report the total number of undergraduate classes taught for credit, by excluding those classes where the primary level of students is graduate or any other post-baccalaureate-level, and adding together those classes where the primary level of students is under-graduate level. (Student levels are defined at X05C23.)

X09C23

Productivity, teaching: Graduate classes taught for credit (Q23A3 or B3 or C3 or D3 or E3=3)

CODE:

1=Yes

2=No

Description of the Derived Variable:

This derived variable was created to indicate if any graduate classes were taught for credit.

X14C23

Productivity, teaching: Number of students taught in 5 or fewer classes for credit
(Q23A2E+B2E+C2E+D2E+E2E)

CODE:

1=0-49 students

2=50-99 students

3=100 or more students

Description of the Derived Variable:

This derived variable was created to provide a calculation of the total number of students taught for credit, by adding together the number of students reported for each class. A maximum of five classes could be reported.

X01C34

Academic environment: Overall quality of facilities or resources (index)

CODE:

1=Very poor

2=Poor

3=Good

4=Very good

Description of the Derived Variable:

This derived variable was created by averaging the responses by a faculty respondent which are concerned with the quality of various types of facilities and resources. The categories are as follows:

C34A=Basic research equipment/instruments

C34B=Laboratory space and supplies

C34C=Availability of research assistants
C34D=Personal computers
C34E=Centralized (main frame) computer facilities
C34F=Computer networks with other institutions
C34G=Audio-visual equipment
C34H=Classroom space
C34I=Office space
C34J=Studio/performance space
C34K=Secretarial support
C34L=Library holdings

X01C35

Academic environment: Adequacy of internal funds for professional development (index)

CODE:

1=Adequate (all 35C=1)

2=Somewhat adequate (more 35C=1 than 35C=2 or, if # of 2s = # of 1s)

3=Somewhat inadequate (more 35C=2 than 35C=1)

Description of the Derived Variable:

This derived variable was created to indicate whether available funding was adequate for each of six categories:

C35C1=Tuition remission at this or other institutions
C35C2=Professional association memberships and/or registration fees
C35C3=Professional travel
C35C4=Training to improve research or teaching skills
C35C5=Retraining for fields in higher demand
C35C6=Sabbatical leave

If "yes" (adequate) was coded for all six categories, *X01C35* was coded as "1" (adequate). If equal numbers of categories were coded "yes" and "no," or if more categories were coded "yes" than "no," *X01C35* was coded as "2" (somewhat adequate). If more categories were coded "no" than "yes," *X01C35* was coded as "3" (somewhat inadequate).

X01C36

Time allocation: Average total hours per week worked (Total Q36)

CODE:

1=0-9 hours

2=10-19 hours

3=20-29 hours

4=30-39 hours

5=40-49 hours

6=50-59 hours

7=60 or more hours

Description of the Derived Variable:

This derived variable is created by totalling hours spent at the following activities:

C36A=All paid activities at this institution

C36B=All unpaid activities at this institution

C36C=Any other paid activities outside this institution (e.g., consulting, working on other jobs)

C36D=Unpaid (pro bono) professional service outside this institution **X01C37**

Time allocation: Percentage of time spent teaching (Q37AA)

CODE:

1=0-24%

2=25-49%

3=50-74%

4=75-89%

5=90-100%

Description of Derived Variable:

This derived variable was created to report the actual percentage of work time respondents spent teaching during the Fall of 1992.

X02C37

Time allocation: Percentage of time spent in research (Q37AB)

CODE:

0=None

1=1-24%

2=25-49%

3=50-100%

Description of Derived Variable:

This derived variable was created to report the actual percentage of work time respondents spent in research during the Fall of 1992.

X03C37

Time allocation: Percentage of time spent in administration (Q37AD)

CODE:

0=None

1=1-24%

2=25-49%

3=50-100%

Description of Derived Variable:

This derived variable was created to report the actual percentage of work time respondents spent in administration during the Fall of 1992.

X04C37

Time allocation: Percentage of time spent in other activities (Q37AC+E+F)

CODE:

0=None

1=1-24%

2=25-49%

3=50-100%

Description of Derived Variable:

This derived variable was created to report the actual percentage of work time respondents spent activities

other than teaching, research or administration during the Fall of 1992, based on:

C37AC=Professional growth

C37AE=Outside consulting or free-lance work

C37AF=Service/other non-teaching work

X05C37

Time allocation: Percentage of time preferred teaching (Q37BA)

CODE:

1=0-24%

2=25-49%

3=50-74%

4=75-89%

5=90-100%

Description of the Derived Variable:

This derived variable was created to report the percentage of work time respondents would have preferred to spend teaching during the Fall of 1992.

X06C37

Time allocation: Percentage of time preferred in research (Q37BB)

CODE:

0=None

1=1-24%

2=25-49%

3=50-100%

Description of Derived Variable:

This derived variable was created to report the percentage of work time respondents would have preferred to spend in research during the Fall of 1992.

X07C37

Time allocation: Percentage of time preferred in administration (Q37BD)

CODE:

0=None

1=1-24%

2=25-49%

3=50-100%

Description of Derived Variable:

This derived variable was created to report the percentage of work time respondents would have preferred to spend in administration during the Fall of 1992.

X08C37

Time allocation: Percentage of time preferred in other activities (Q37BC+E+F)

CODE:

0=None

1=1-24%

2=25-49%

3=50-100%

Description of Derived Variable:

This derived variable was created to report the percentage of work time respondents would have preferred to spend in activities other than teaching, research or administration, during the Fall of 1992, based on:

C37BC=Professional growth

C37BE=Outside consulting or free-lance work

C37BF=Service/other non-teaching work

X01D41

Future: Very likely to retire in the next 3 years

CODE:

1=Yes (Q41E=3)

2=No

Description of Derived Variable:

This derived variable was created to indicate how likely a respondent was to retire from the labor force during the next 3 years. Respondents who reported they were very likely to retire were coded "1" at *X01D41*.

X02D41

Future: Very likely to accept part-time job in the next 3 years

CODE:

1=Yes (Q41A=3 OR C=3)

2=No

Description of Derived Variable:

This derived variable was created to indicate if a respondent was very likely to accept a part-time job at a different postsecondary institution or accept a part-time job elsewhere during the next 3 years. Respondents who reported they were very likely to accept a part-time job were coded "1" at *X02D41*.

X03D41

Future: Very likely to accept a full-time job in the next 3 years

CODE:

1=Yes (Q41B=3 OR D=3)

2=No

Description of Derived Variable:

This derived variable was created to indicate if a respondent was very likely to accept a full-time job at a different postsecondary institution or accept a full-time job elsewhere. Respondents who reported they were very likely to accept a full-time job were coded "1" at *X03D41*.

X04D41

Future: Very likely to retire or accept a part- or full-time job in the next 3 years

CODE:

1=Yes (Q41A=3 OR B=3 OR C=3 OR D=3 OR E=3)

2=No

Description of Derived Variable:

This derived variable was created to indicate if a respondent was very likely to accept a part-or full-time job at a different postsecondary institution or elsewhere, or to retire during the next 3 years. Respondents who reported they were very likely to accept a different job or to retire were coded "1" at X04D41.

X05D41

Future: Likely to retire or accept a part- or full-time job in the next 3 years

CODE:

1=Yes (Q41A=2 OR 3, OR B=2 OR 3 OR C=2 OR 3, OR D=2 OR 3, OR E2 OR 3)

2=No (Q41A=1 AND B=1 AND C=1 AND D=1 AND E=1)

Description of Derived Variable:

This derived variable was created to indicate how likely a respondent was to accept a part-or full-time job at a different postsecondary institution or elsewhere, or to retire during the next 3 years. Respondents who reported they were very likely or somewhat likely to accept a different job or retire were coded "1" at X05D41.

X01D42

Future: Age likely to stop working at a postsecondary institution

CODE:

1=Under 55

6=66 to 69

2=55 to 59

7=70

3=60

8=71 and up

4=61 to 64-2=Don't know

5=65

Description of the Derived Variable:

This derived variable was created from SAS variable D42 by recoding the age respondents have indicated as the "most likely" age when they will stop working at any postsecondary institution.

X01D46

Future: Years to retirement (Q46 minus calculated age from Q52)

CODE:

0=This year

1=1-5

2=6-10

3=11-15

4=16-25

5=Over 25

Description of Derived Variable:

This derived variable was created to provide a calculation of the years until a respondent's projected retirement by subtracting the respondent's calculated age (derived from year of birth) from the age the respondent indicated as the "most likely" retirement age.

X02D46

Future: Age likely to retire from all paid employment

CODE:

1=Under 60

5=66-69

2=60

3=61 to 64

4=65 -2=Don't know

6=70

7=71 and up

Description of Derived Variable:

This derived variable was created by recoding the age respondents indicated as "most likely" retirement age.

X06E47

Compensation: Total earned income (Q47A+C+D+E+F+G+H+I+J+K+L+M+N+O+P+Q)

CODE:

1=0-\$24,999

2=\$25,000-\$39,999

3=\$40,000-\$54,999

4=\$55,000-\$69,999

5=\$70,000 and up

Description of Derived Variable:

This derived variable was created to report the total amount of various sources of compensation the respondent had during the 1992 calendar year, based on:

E47A=Amount from non-monetary coa=Amount from basic salary

E47C=Amount from other teaching at this institution not included in basic salary

E47D=Amount from supplements not included in basic salary

E47E=Amount from non-monetary compensation, such as food, housing, car

E47F=Amount from any other income from this institution

E47G=Amount from employment at another academic institution

E47H=Amount from legal or medical services or psychological counseling

E47I=Amount from outside consulting, consulting business or freelance work

E47J=Amount from self-owned business (other than consulting)

E47K=Amount from professional performances or exhibitions

E47L=Amount from speaking fees, honoraria

E48M=Amount from royalties or commissions

E48N=Amount from any other employment

E48O=Amount from non-monetary ompensation, such as food, housing, car

E47P1=Amount from grants/fellowships (federal, state, city, NSF, Fulbright)

E47P2=Amount from retirement, pension, soc. sec., unemployment

E47P3=Amount from military pension/retirement/other military

E47P4=Amount from alimony, child support, spouse income

E47P5=Amount from dividends, annuities, insurance, investments, interest, capital gains

E47P6=Amount from government (local/state/federal)

E47P7=Amount from loans

E47P8=Amount from real estate, rental properties

E47P9=Amount from other sources

(Note: E47P1-E47P9 were recoded from Q47P and Q47Q, which were verbatim responses specifying other sources of earned income.)

X03F52

Age: Modified distribution (Q52 converted to years old and distributed)

CODE:

1=Under 45

2=45-54

3=55 and older

Description of the Derived Variable:

This derived variable was created to report a respondent's age distributed into three categories. Respondent's age was derived by subtracting the respondent's year of birth, reported at Q52, from 93 (i.e. 1993).

X01F55

SES: Family status

CODE:

- 1=Single without dependents (Q55=1 or 4 or 5 or 6 and Q50=0)
- 2=Single with dependents (Q55=1 or 4 or 5 or 6 and Q50 > 0)
- 3=Married without dependents (Q55=2 or 3 and Q50=0)
- 4=Married with dependents (Q55=2 or 3 and Q50 > 0)

Description of the Derived Variable:

This derived variable is created by combining current marital status with number of dependents.

Public-Use Institution File Derived Variables

X01_0

Institution strata (matches NSOPF-88 categories)

CODE:

- 1=Public research (I_AFF=1, I_CNG=11 or 12)
- 2=Private research (I_AFF=2, I_CNG=11 or 12)
- 3=Public doctoral, including medical (I_AFF=1, I_CNG=13 or 14 or 52)
- 4=Private doctoral, including medical (I_AFF=2, I_CNG=13 or 14 or 52)
- 5=Public comprehensive (I_AFF=1, I_CNG=21 or 22)
- 6=Private comprehensive (I_AFF=2, I_CNG=21 or 22)
- 7=Liberal arts (I_CNG=31 or 32)
- 8=Public two-year (I_AFF=1, I_CNG=40)
- 9=Other, includes religious and other specialized institutions, except medical; private 2-year institutions not included (I_CNG=51, 53-65)

Description of the Derived Variable:

This derived variable was created to indicate the modified 1987 Carnegie classification for the institutions sampled for NSOPF-93. The *X01_0* categories match the NSOPF-88 categories used in some NCES publications. A modified Carnegie system was used to stratify institutions by control (public and private) and type (research, other Ph.D., comprehensive, liberal arts, medical, 2-year, religious, other and unknown.) Specific Carnegie Classifications are defined at *X05_0*. Note: Private 2-year schools are not included in any of the individual categories).

Control

I_AFF=1 — Public
I_AFF=2 — Private

Type

I_CNG=11 or 12 — Research
I_CNG=13 or 14 — Other Ph.D.
I_CNG=21 or 22 — Comprehensive
I_CNG=31 or 32 — Liberal arts
I_CNG=40 — Two-year college
I_CNG=51 — Religious
I_CNG=52 — Medical
I_CNG=53 to 65 — Other

For NSOPF-93 institutions with unknown Carnegie classifications, the value of *X01_0* was individually assigned based on information available from IPEDS.

X02_0

Institution strata (modified NSOPF-88 categories)

CODE:

- 1=Public research (I_AFF=1, I_CNG=11 or 12)
- 2=Private research (I_AFF=2, I_CNG=11 or 12)
- 3=Public doctoral, including medical (I_AFF=1, I_CNG=13 or 14 or 52)
- 4=Private doctoral, including medical (I_AFF=2, I_CNG=13 or 14 or 52)
- 5=Public comprehensive (I_AFF=1, I_CNG=21 or 22)
- 6=Private comprehensive (I_AFF=2, I_CNG=21 or 22)
- 7=Private liberal arts (I_AFF=2, I_CNG=31 or 32)
- 8=Public two-year (I_AFF=1, I_CNG=40)
- 9=Other, including private 2-year institutions, public liberal arts institutions and religious and other specialized institutions, except medical (I_AFF=1 and I_CNG=31 or 32, I_AFF=2 and I_CNG=40, I_CNG=51, 53-65)

Description of the Derived Variable:

This variable is a modification of *X01_0*. The categories for Codes 1-6 and 8 correspond to categories used in NSOPF-88 (as in *X01_0*). Code 7, previously labeled "liberal arts", has been modified to include only private liberal arts institutions. Code 9, "other", now includes public liberal arts, private 2-year institutions, and religious and other specialized institutions. (Specific Carnegie classifications are defined at *X05_0*.) This variable creates the "institution type and control" stratification used in NCES reports *Institutional Policies and Practices Regarding Faculty in Higher Education* [NCES 97-080] and *Instructional Faculty and Staff in Higher Education Institutions: Fall 1987 and Fall 1992* [NCES 97-470]

For NSOPF-93 institutions with unknown Carnegie classifications, the value of *X02_0* was individually assigned based on information available from IPEDS.

X04_0

Institution strata (modified NSOPF-93 sampling strata; unknown private and unknown public eliminated; stratum 15 split into 3 strata: public research, private research, public other Ph.D.)

CODE:

- 1=Private other Ph.D.
- 2=Public comprehensive
- 3=Private comprehensive
- 4=Public liberal arts
- 5=Private liberal arts
- 6=Public medical
- 7=Private medical
- 8=Private religious
- 9=Public two-year
- 10=Private two-year
- 11=Public other
- 12=Private other
- 13=Public research
- 14=Private research
- 15=Public other Ph.D.

Description of the Derived Variable:

This variable is a modification of the sampling strata of the NSOPF-93 institutions. A modified 1987 Carnegie classification system was used to stratify institutions by type and control. (Specific Carnegie Classifications are defined at X05_0.) There were two levels of control, public and private, and nine types: research, other Ph.D., comprehensive, liberal arts, medical, religious, two-year schools, other, and unknown. The unknown sampling strata (stratum 13 and stratum 14 in the ISTRATUM sampling variable on the data file) for institutions for which a Carnegie classification was not available have been eliminated for this derived variable. There are no public religious institutions. Three of the cells, public research, private research, and public "other Ph.D.", were sampled at 100%, and grouped together in the "certainty" stratum (stratum 15 in the ISTRATUM sampling variable on the data file). Because this stratum does not contain a grouping of analytic interest, the sampling strata for this derived variable have been modified so that institutions previously contained in the "certainty" stratum are split into 3 separate strata:

- Public research
- Private research
- Public other Ph.D.

X05_0

Institution by Carnegie classification I or II (1987) (public or private sort eliminated)

CODE:

- 1=Research I
- 2=Research II
- 3=Doctoral I
- 4=Doctoral II
- 5=Comprehensive I
- 6=Comprehensive II
- 7=Liberal arts I
- 8=Liberal arts II
- 9=Two-year
- 10=Other

Description of the Derived Variable:

This variable sorts institutions sampled for NSOPF-93 according to their specific Carnegie classification (rather than the modified 1987 Carnegie classification system utilized in X01_0, which sorted institutions according to their public or private designation). The classifications are as follows:

- Research I: offer a full range of baccalaureate through doctoral programs, award 50 or more doctoral degrees each year, give high priority to research and receive \$40 million or more in federal support annually
- Research II: offer a full range of baccalaureate through doctoral programs, award 50 or more doctoral degrees each year, give high priority to research and receive between \$15.5 and \$40 million in federal support annually
- Doctoral I: offer a full range of baccalaureate through doctoral programs and award at least 40 doctoral degrees annually in five or more disciplines

Doctoral II: offer a full range of baccalaureate through doctoral programs and award at least 10 doctoral degrees annually in three or more disciplines, or 20 or more doctoral degrees in one or more disciplines

Comprehensive I: offer a full range of baccalaureate through master's degree programs and award 40 or more master's degrees annually in three or more disciplines

Comprehensive II: offer a full range of baccalaureate through master's degree programs and award 20 or more master's degrees annually in one or more disciplines

Liberal arts (or baccalaureate colleges) I:
offer primarily undergraduate degrees, award 40% or more of their baccalaureate degrees in liberal arts fields and are restrictive in admissions

Liberal arts (or baccalaureate colleges) II:
offer primarily undergraduate degrees, award less than 40% of their baccalaureate degrees in liberal arts fields and are less restrictive in admissions

Two-year (associate of arts colleges):
offer primarily associate of arts certificate or degree programs, and with few exceptions, do not offer baccalaureate degrees (this group includes community, junior and technical colleges)

Other: offer degrees ranging from the bachelor's to the doctoral, with at least 50% of the degrees awarded in a single discipline (including institutions whose primary purpose is to offer religious instruction or train members of the clergy; medical schools and medical centers who award most of their professional degrees in medicine and in some instances, in other health professional programs; other separate health professional schools that award most of their degrees in fields such as chiropractic, nursing, pharmacy or podiatry; schools of engineering and technology; schools of business and management; schools of art, music and design; schools of law; teachers colleges; other specialized institutions such as graduate centers, maritime academies, military institutions and institutions that do not fit other classifications; tribal colleges and universities, primarily tribally contracted and located on reservations).

For NSOPF-93 institutions with unknown Carnegie classifications, the value of X05_0 was individually assigned based on information available from IPEDS.

X06_0

Institution type (1991-92 IPEDS and modified Carnegie)

CODE:

1=Four year (I_TYP=4)

2=Two-year (I_TYP=2)

Description of the Derived Variable:

This derived variable was created to reflect the type of institution (2- or 4-year) sampled for NSOPF-93.

X07_0

Institution control (1991-92 IPEDS and modified Carnegie)

CODE:

1=Public (I_AFF=1)

2=Private (I_AFF=2)

Description of the Derived Variable:

This derived variable was created to reflect the public or private status of the NSOPF-93 institution.

X08_0

Institution strata (NSOPF-88 categories modified further)

CODE:

1=4-year public doctoral (medical schools and research institutions)

2=4-year private doctoral (medical schools and research institutions)

3=4-year public non-doctoral (comprehensive, liberal arts, and other specialized institutions)

4=4-year private non-doctoral (comprehensive, liberal arts, and other specialized institutions)

5=2-year public

6=2-year private

Description of the Derived Variable:

This derived variable is a modification of *X01_0*. For this derived variable, institutions are grouped by four-year and two-year designations, by control (public and private), and by types of degrees offered (doctoral and non-doctoral).

For NSOPF-93 institutions with unknown Carnegie classifications, the value of *X08_0* was individually assigned based on information available from IPEDS.

X09_0

Institution strata (NSOPF-88 and modified 1994 Carnegie)

CODE:

1=Public research

2=Private research

3=Public doctoral-including medical

4=Private doctoral-including medical

5=Public comprehensive

6=Private comprehensive

7=Private liberal arts

8=Public 2 year

9=Other

Description of the Derived Variable:

This variable was created to reflect the 1994 Carnegie classification and public or private status of each NSOPF-93 institution. The categories correspond to the modified 1988 NSOPF categories at *X02_0*.

For NSOPF-93 institutions with unknown Carnegie classifications, the value of *X09_0* was individually assigned based on information available from IPEDS.

X10_0

Ratio of FTE enrollment/FTE faculty

CODE:
(open-ended)

Description of the Derived Variable:

This variable was created by NCES from 1991-92 IPEDS data to show the ratio of FTE enrollment to FTE faculty at NSOPF-93 institutions. These terms are defined as follows:

Full-time equivalent (FTE) enrollment: The sum of the number of full-time students and the full-time equivalency of part-time students.

Full-time equivalent (FTE) of part-time enrollment: A numeric conversion through which a student attending part-time is considered some fraction of a full-time student. The actual fractions used were:

.38 for part-time undergraduates and graduate students
.50 for first-professional students

Full-time equivalent (FTE) faculty: The sum of the number of full-time faculty and the full-time equivalency of part-time faculty.

Full-time equivalent (FTE) of part-time faculty: A numeric conversion through which a faculty member employed part-time is considered some fraction of a faculty member employed full-time. The actual fraction used was .56.

X11_0

Institution size: Number of full- and part-time undergraduate students enrolled

CODE:
(open-ended)

Description of the Derived Variable:

This derived variable was created by NCES from 1991-92 IPEDS data to show the number of undergraduate students enrolled in courses for credit at NSOPF-93 institutions.

Undergraduate: A student enrolled in a 4-year or 5-year bachelor's degree program, in an associate's degree program, or in a vocational or technical program below the baccalaureate, or any other student that is not seeking a degree but is enrolled in courses for credit.

X12_0

Institution size collapsed: Number of full- and part-time undergraduate students enrolled

CODE:
(ranges)

Description of the Derived Variable:

This derived variable was created by NCES to recode the continuous categories at *X11_0* into 5 ranges.

X13_0

Institution size: FTE undergraduate enrollment

CODE:
(open-ended)

Description of the Derived Variable:

This variable was created by NCES from 1991-92 IPEDS data to show FTE undergraduate enrollment at NSOPF-93 institutions.

FTE: Full-time equivalency of undergraduate students as defined at *X10_0*.

Undergraduate: A student enrolled in a 4-year or 5-year bachelor's degree program, in an associate's degree program, or in a vocational or technical program below the baccalaureate, or any other student that is not seeking a degree but is enrolled in courses for credit.

X14_0

Institution size collapsed: FTE undergraduate enrollment

CODE:
(ranges)

Description of the Derived Variable:

This variable was created by NCES to recode the continuous categories at *X13_0* into five ranges.

X15_0

Institution size: Number of first-professional students enrolled

CODE:
(open-ended)

Description of the Derived Variable:

This derived variable was created by NCES from 1991-92 IPEDS data to show the number of first-professional students enrolled at NSOPF-93 institutions.

First-professional student: A student enrolled in any of the following degree programs:

| | |
|-------------------------------|-------------------------------------|
| Chiropractic (D.C. or D.C.M.) | Pharmacy (D.Pharm.) |
| Dentistry (D.D.S. or D.M.D.) | Podiatry (Pod.D. or D.P.) |
| Medicine (M.D.) | Veterinary Medicine (D.V.M.) |
| Optometry (O.D.) | Law (L.L.B., J.D.) |
| Osteopathic Medicine (D.O.) | Theology (M.Div. or M.H.L. or B.D.) |

X16_0

Institution size collapsed: Number of first-professional students enrolled

CODE:
(ranges)

Description of the Derived Variable:

This derived variable was created by NCES to recode the continuous categories at *X15_0* into five ranges.

X17_0

Institution size: FTE first-professional enrollment

CODE:
(open-ended)

Description of the Derived Variable:

This derived variable was created by NCES from 1991-92 IPEDS data to show the number of FTE first-professional students enrolled at NSOPF-93 institutions.

FTE: Full-time equivalency of first-professional students as defined at *X10_0*.

First-professional student: A student enrolled in any of the following degree programs:

| | |
|-------------------------------|-------------------------------------|
| Chiropractic (D.C. or D.C.M.) | Pharmacy (D.Pharm.) |
| Dentistry (D.D.S. or D.M.D.) | Podiatry (Pod.D. or D.P.) |
| Medicine (M.D.) | Veterinary Medicine (D.V.M.) |
| Optometry (O.D.) | Law (L.L.B., J.D.) |
| Osteopathic Medicine (D.O.) | Theology (M.Div. or M.H.L. or B.D.) |

X18_0

Institution size collapsed: FTE first-professional enrollment

CODE:
(ranges)

Description of the Derived Variable:

This derived variable was created by NCES to recode the continuous categories at *X17_0* into five ranges.

X19_0

Institution size: Number of graduate students enrolled

CODE:
(open-ended)

Description of the Derived Variable:

This variable was created by NCES from 1991-92 IPEDS data to show the total enrollment of graduate students at NSOPF-93 institutions.

Graduate student: A student who holds a bachelor's or first-professional degree, or equivalent, and is taking courses for credit at the post-baccalaureate level. These students may or may not be enrolled in a graduate degree program.

X20_0

Institution size collapsed: Number of graduate students enrolled

CODE:
(ranges)

Description of the Derived Variable:

This derived variable was created by NCES to recode the continuous categories at *X19_0* into five ranges.

X21_0

Institution size: FTE graduate enrollment
CODE:
(open-ended)

Description of the Derived Variable:

This derived variable was created by NCES from 1991-92 IPEDS data to show the number of FTE graduate students at NSOPF-93 institutions.

FTE: Full-time equivalency of graduate students as defined at X10_0.

Graduate student: A student who holds a bachelor's or first-professional degree, or equivalent, and is taking courses for credit at the post-baccalaureate level. These students may or may not be enrolled in a graduate degree program.

X22_0

Institution size collapsed: FTE graduate enrollment
CODE:
(ranges)

Description of the Derived Variable:

This derived variable was created by NCES to recode the continuous categories at X21_0 into five ranges.

X23_0

Institution size: Total enrollment
CODE:
(open-ended)

Description of the Derived Variable:

This derived variable was created by NCES from 1991-92 IPEDS data to show the size of the total student enrollment at NSOPF-93 institutions.

Total enrollment: All students taking courses for credit.

X24_0

Institution size collapsed: Total enrollment
CODE:
(open-ended)

Description of the Derived Variable:

This derived variable was created by NCES to recode the continuous categories at X23_0 into five ranges.

X25_0

Institution size: Total FTE enrollment
CODE:
(open-ended)

Description of the Derived Variable:

This derived variable was created by NCES from 1991-92 IPEDS data to provide the total FTE student enrollment at NSOPF-93 institutions.

Full-time equivalent (FTE) enrollment: The sum of the number of full-time students and the full-time equivalency of part-time students.

Full-time equivalent (FTE) of part-time enrollment: A numeric conversion through which a student attending part-time is considered some fraction of a full-time student. The actual fractions used were:

- .38 for part-time undergraduates and graduate students
- .50 for part-time first-professional students

X26_0

Institution size collapsed: Total FTE enrollment

CODE:
(ranges)

Description of the Derived Variable:

This derived variable was created by NCES to recode the continuous categories at X25_0 into five ranges.

X27_0

Minority enrollment: Percent American Indian/Alaskan Native

CODE:
(PERCENTAGE, open-ended)

Description of the Derived Variable:

This derived variable was created by NCES from 1991-92 IPEDS data to provide the percentage of American Indian/Alaskan Native enrollment at each NSOPF-93 institution.

American Indian or Alaskan Native: A person having origins in any of the original peoples of North America and who maintains cultural identification through tribal affiliation or community recognition.

X28_0

Minority enrollment: Percent Asian/Pacific Islander

CODE:
(PERCENTAGE, open-ended)

Description of the Derived Variable:

This derived variable was created from 1991-92 IPEDS data to provide the percentage of Asian/Pacific Islander enrollment at each NSOPF-93 institution.

Asian or Pacific Islander: A person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or Pacific Islands. This includes people from China, Japan, Korea, the Philippines, American Samoa, India, and Vietnam.

X29_0

Minority enrollment: Percent Black Non-Hispanic

CODE:

(PERCENTAGE, open-ended)

Description of the Derived Variable:

This derived variable was created from 1991-92 IPEDS data to provide the percentage of Black Non-Hispanic enrollment at each NSOPF-93 institution.

Black, Non-Hispanic: A person having origins in any of the Black racial groups of Africa (except those of Hispanic origins).

X30_0

Minority enrollment: Percent Hispanic

CODE:

(PERCENTAGE, open-ended)

Description of the Derived Variable:

This derived variable was created from 1991-92 IPEDS data to provide the percentage of Hispanic enrollment at each NSOPF-93 institution.

Hispanic: A person of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish culture or origin, regardless of race.

X31_0

Institution expenditures: Instruction

CODE:

(open-ended)

Description of the Derived Variable:

This derived variable was created by NCES from the 1991-92 IPEDS data to show the level of instructional expenditures at NSOPF-93 institutions.

Instruction (expenditures): Expenditures of the colleges, schools, departments, and other instructional divisions of the institution, and expenditures for departmental research and public service that are not separately budgeted. Includes expenditures for credit and non-credit activities. Excludes expenditures for academic administration where the primary function is administration (e.g., academic deans). This category also includes general academic instruction, occupational and vocational instruction, special session instruction, community education, preparatory and adult basic education, and remedial and tutorial instruction conducted by the teaching faculty for the institution's students.

X32_0

Institution expenditures collapsed: Instruction

CODE:

(ranges)

Description of the Derived Variable:

This derived variable was created by NCES to recode the continuous categories at X31_0 into five ranges.

X33_0

Institution expenditures: Research

CODE:
(open-ended)

Description of the Derived Variable:

This variable was created by NCES from 1991-92 IPEDS data to show the funds expended for research by NSOPF-93 institutions.

Research (expenditures): Funds expended for activities specifically organized to produce research outcomes and commissioned by an agency either external to the institution or separately budgeted by an organizational unit within the institution.

X34_0

Institution expenditures collapsed: Research

CODE:
(ranges)

Description of the Derived Variable:

This variable was created by NCES to recode the continuous categories at X33_0 into five ranges.

X35_0

Institution expenditures: Educational and general

CODE:
(open-ended)

Description of the Derived Variable:

This variable was created by NCES from 1991-92 IPEDS data to show the level of educational and general expenditures at NSOPF-93 institutions.

Educational and general (E&G) expenditures: Educational and general expenditures include current fund expenditures for instruction, research, public service, academic support, student services, institutional support, operation and maintenance of plant, scholar-ships and fellowships, and educational and general mandatory transfers. Educational and general expenditures exclude expenditures on auxiliary enterprises, hospitals, and independent operations. Pell Grants are excluded.

X36_0

Institution expenditures collapsed: Educational and general

CODE:
(ranges)

Description of the Derived Variable:

This derived variable was created by NCES to recode the continuous categories at X35_0 into 5 ranges.

X37_0

Bureau of Economic Analysis region code

CODE:

- 0=U.S. service school
- 1=New England
- 2=Mid East
- 3=Great Lakes
- 4=Plains
- 5=Southeast
- 6=Southwest
- 7=Rocky Mountain
- 8=Far West
- 9=Outlying areas

Description of the Derived Variable:

This derived variable was created by NCES from 1991-92 IPEDS data to classify NSOPF-93 institutions according to geographic region, using the nine BEA (Bureau of Economic Analysis) region codes.

| EXHIBIT B-1: DISCIPLINE CROSSWALK, NSOPF-93 CODES FOR MAJOR FIELDS OF STUDY AND ACADEMIC DISCIPLINES | |
|--|---|
| 1993 CODES | |
| 100 | AGRICULTURE--UNSPECIFIED |
| 101 | Agribusiness & Agricultural Production |
| 102 | Agricultural Animal, Food, & Plant Sciences |
| 103 | Renewable Natural Resources, including Conservation, Fishing, & Forestry |
| 110 | Other Agriculture |
| 120 | ARCHITECTURE & ENVIRONMENTAL DESIGN--UNSPECIFIED |
| 121 | Architecture & Environmental Design |
| 122 | City, Community, & Regional Planning |
| 123 | Interior Design |
| 124 | Land Use Management & Reclamation Design |
| 130 | Other Arch. & Environmental Design |
| 140 | ART--UNSPECIFIED |
| 141 | Art History & Appreciation |
| 142 | Crafts |
| 143 | Dance |

| EXHIBIT B-1: DISCIPLINE CROSSWALK, NSOPF-93 CODES FOR MAJOR FIELDS OF STUDY AND ACADEMIC DISCIPLINES | |
|---|---|
| 1993 CODES | |
| 144 | Design (other than Arch. or Interior) |
| 145 | Dramatic Arts |
| 146 | Film Arts |
| 147 | Fine Arts |
| 148 | Music |
| 149 | Music History & Appreciation |
| 150 | Other Visual & Performing Arts |
| 160 | BUSINESS--UNSPECIFIED |
| 161 | Accounting |
| 162 | Banking & Finance |
| 163 | Business Administration & Management |
| 164 | Business Administrative Support (e.g., Bookkeeping, Office Management, Secretarial) |
| 165 | Human Resources |
| 166 | Organizational Behavior |
| 167 | Marketing & Distribution |
| 170 | Other Business |
| 180 | COMMUNICATIONS--UNSPECIFIED |
| 181 | Advertising |
| 182 | Broadcasting & Journalism |
| 183 | Communications Research |
| 184 | Communication Technologies |
| 190 | Other Communications |
| 200 | COMPUTER SCIENCE--UNSPECIFIED |
| 201 | Computer & Information Sciences |
| 202 | Computer Programming |
| 203 | Data Processing |

| EXHIBIT B-1: DISCIPLINE CROSSWALK, NSOPF-93 CODES FOR MAJOR FIELDS OF STUDY AND ACADEMIC DISCIPLINES | |
|--|--|
| 1993 CODES | |
| 204 | Systems Analysis |
| 210 | Other Computer Science |
| 220 | EDUCATION--UNSPECIFIED |
| 221 | Education, General |
| 222 | Basic Skills |
| 223 | Bilingual/Cross-cultural Education |
| 224 | Curriculum & Instruction |
| 225 | Education Administration |
| 226 | Education Evaluation & Research |
| 227 | Educational Psychology |
| | EDUCATION--UNSPECIFIED (CONT'D) |
| 228 | Special Education |
| 229 | Student Counseling & Personnel Svcs. |
| 230 | Other Education |
| 240 | TEACHER EDUCATION--UNSPECIFIED |
| 241 | Pre-Elementary |
| 242 | Elementary |
| 243 | Secondary |
| 244 | Adult & Continuing |
| 245 | Other General Teacher Ed. Programs |
| 250 | Teacher Education in Specific Subjects |
| 260 | ENGINEERING--UNSPECIFIED |
| 261 | Engineering, General |
| 262 | Civil Engineering |
| 263 | Electrical, Electronics, & Communication Engineering |
| 264 | Mechanical Engineering |

| EXHIBIT B-1: DISCIPLINE CROSSWALK, NSOPF-93 CODES FOR MAJOR FIELDS OF STUDY AND ACADEMIC DISCIPLINES | |
|---|---|
| 1993 CODES | |
| 265 | Chemical Engineering |
| 270 | Other Engineering |
| 280 | Engineering-Related Technologies |
| 290 | ENGLISH AND LITERATURE--UNSPECIFIED |
| 291 | English, General |
| 292 | Composition & Creative Writing |
| 293 | American Literature |
| 294 | English Literature |
| 295 | Linguistics |
| 296 | Speech, Debate, & Forensics |
| | ENGLISH AND LITERATURE--UNSPEC (CONT'D) |
| 297 | English as a Second Language |
| 300 | English, Other |
| 310 | FOREIGN LANGUAGES--UNSPECIFIED |
| 311 | Chinese (Mandarin, Cantonese, or Other Chinese) |
| 312 | French |
| 313 | German |
| 314 | Italian |
| 315 | Latin |
| 316 | Japanese |
| 317 | Other Asian |
| 318 | Russian or Other Slavic |
| 319 | Spanish |
| 320 | Other Foreign Languages |
| 330 | HEALTH SCIENCES--UNSPECIFIED |
| 331 | Allied Health Technologies & Services |

| EXHIBIT B-1: DISCIPLINE CROSSWALK, NSOPF-93 CODES FOR MAJOR FIELDS OF STUDY AND ACADEMIC DISCIPLINES | |
|--|---|
| 1993 CODES | |
| 332 | Dentistry |
| 333 | Health Services Administration |
| 334 | Medicine, including Psychiatry |
| 335 | Nursing |
| 336 | Pharmacy |
| 337 | Public Health |
| 338 | Veterinary Medicine |
| 340 | Other Health Sciences |
| 350 | HOME ECONOMICS |
| 360 | INDUSTRIAL ARTS |
| 370 | LAW |
| 380 | LIBRARY & ARCHIVAL SCIENCES |
| 390 | LIFE OR PHYSICAL SCIENCES, GENERAL NATURAL SCIENCES: BIOLOGICAL SCIENCES--UNSPECIFIED |
| 391 | Biochemistry |
| 392 | Biology |
| 393 | Botany |
| 394 | Genetics |
| 395 | Immunology |
| 396 | Microbiology |
| 397 | Physiology |
| 398 | Zoology |
| 400 | Biological Sciences, Other |
| 410 | NATURAL SCIENCES: PHYSICAL SCIENCES--UNSPECIFIED |
| 411 | Astronomy |
| 412 | Chemistry |

| EXHIBIT B-1: DISCIPLINE CROSSWALK, NSOPF-93 CODES FOR MAJOR FIELDS OF STUDY AND ACADEMIC DISCIPLINES | |
|---|--|
| 1993 CODES | |
| 413 | Physics |
| 414 | Earth, Atmosphere, and Oceanographic (Geological Sciences) |
| 420 | Physical Sciences |
| 430 | MATHEMATICS |
| 440 | STATISTICS |
| 450 | MILITARY STUDIES |
| 460 | MULTI/INTERDISCIPLINARY STUDIES |
| 470 | PARKS & RECREATION |
| 480 | PHILOSOPHY AND RELIGION |
| 490 | THEOLOGY |
| 500 | PROTECTIVE SERVICES (e.g., Criminal Justice, Fire Protection) |
| 510 | PSYCHOLOGY |
| 520 | PUBLIC AFFAIRS (e.g., Community Services, Public Administration, Public Works, Social Work) |
| 530 | SCIENCE TECHNOLOGIES |
| 540 | SOCIAL SCIENCES AND HISTORY--UNSPECIFIED |
| 541 | Social Sciences, General |
| 542 | Anthropology |
| 543 | Archeology |
| 544 | Area & Ethnic Studies |
| 545 | Demography |
| 546 | Economics |
| 547 | Geography |
| 548 | History |
| 549 | International Relations |
| 550 | Political Science |

| EXHIBIT B-1: DISCIPLINE CROSSWALK, NSOPF-93 CODES FOR MAJOR FIELDS OF STUDY AND ACADEMIC DISCIPLINES | |
|---|---|
| 1993 CODES | |
| 551 | Sociology |
| 560 | Other Social Sciences |
| 570 | VOCATIONAL TRAINING--UNSPECIFIED |
| 600 | CONSTRUCTION TRADES--UNSPECIFIED |
| 601 | Carpentry |
| 602 | Electrician |
| 603 | Plumbing |
| 610 | Other Construction Trades |

| EXHIBIT B-1: DISCIPLINE CROSSWALK, NSOPF-93 CODES FOR MAJOR FIELDS OF STUDY AND ACADEMIC DISCIPLINES | |
|---|--|
| 1993 CODES | |
| 620 | CONSUMER, PERSONAL, & MISC. SERVICES--UNSPECIFIED |
| 621 | Personal Services (e.g., Barbering, Cosmetology) |
| | CONSUMER, PERSONAL, & MISC. SERVICES--UNSPECIFIED (CONT'D) |
| | Other Consumer Services |
| 630 | |
| 640 | MECHANICS AND REPAIRERS--UNSPECIFIED |
| 641 | Electrical & Electronics Equipment Repair |
| 642 | Heating, Air Conditioning, & Refrigeration Mechanics |
| 643 | Vehicle & Mobile Equipment Mechanics & Repairers |
| 644 | Other Mechanics & Repairers |
| 660 | PRECISION PRODUCTION--UNSPECIFIED |
| 661 | Drafting |
| 662 | Graphic & Print Communications |
| 663 | Leatherworking & Upholstering |
| 664 | Precision Metal Work |
| 665 | Woodworking |
| 670 | Other Precision Production Work |
| 680 | TRANSPORTATION AND MATERIAL MOVING--UNSPECIFIED |
| 681 | Air Transportation (e.g., Piloting, Traffic Control, Flight Attendance, Aviation Management) |
| 682 | Land Vehicle & Equipment Operation |
| 683 | Water Transportation (e.g., Boat & Fishing Operations, Deep Water Diving, Marina Operations, Sailors & Deckhands) |
| 690 | Other Transportation & Material Moving |
| 900 | OTHER (IF YOU USE THIS CODE, BE SURE TO WRITE IN A COMPLETE DESCRIPTION AT QUESTIONS 12-13, AND 16) |

Appendix C

NSOPF-93 National Technical Review Panel (NTRP)

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NATIONAL TECHNICAL REVIEW PANEL**

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