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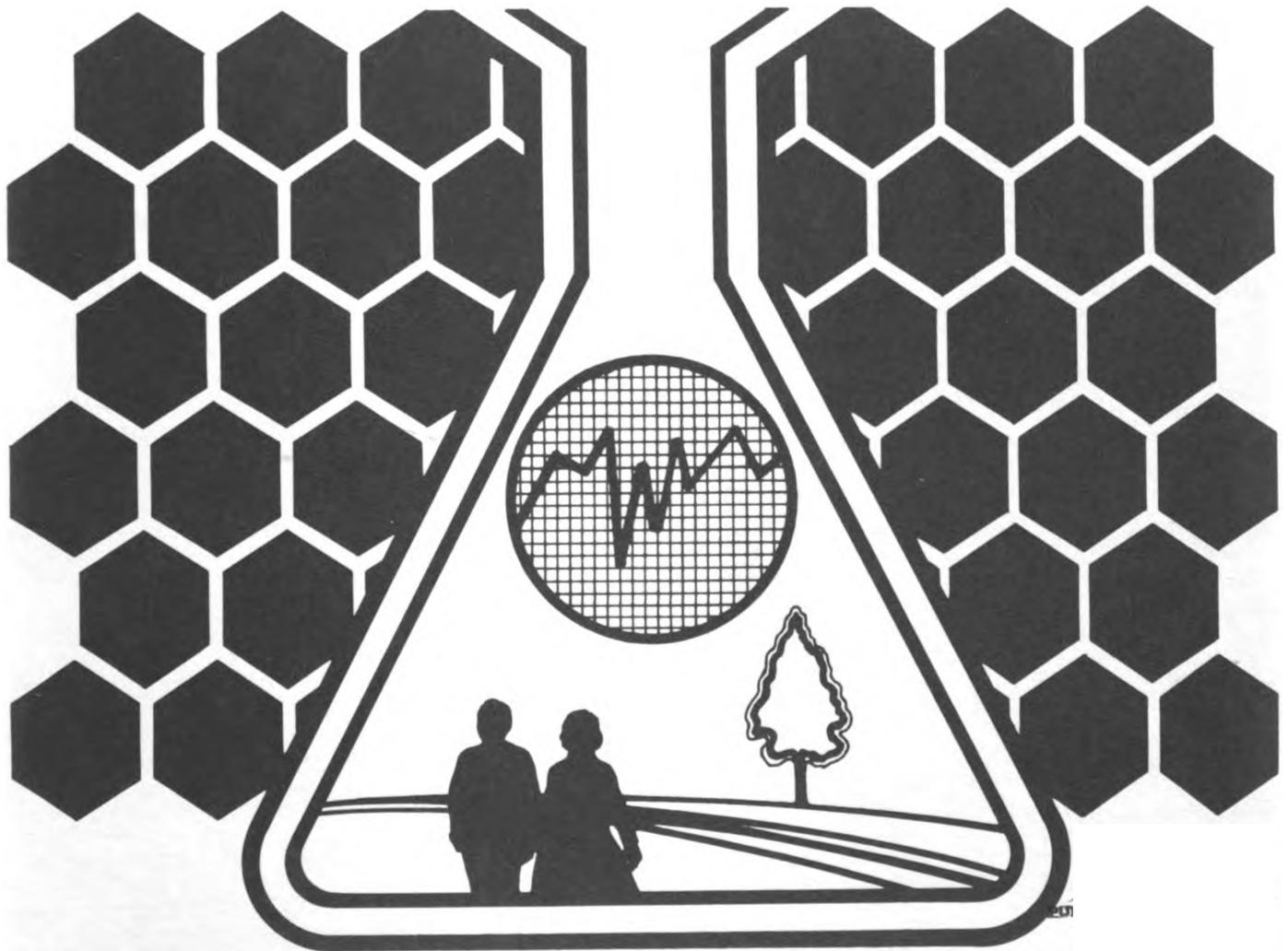
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U.S. Department
of Commerce
BUREAU OF
THE CENSUS,

Selected
Characteristics of
Persons in

Social Science and Psychology:

1978



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Selected
Characteristics of
Persons in
**Social Science
and Psychology:**
1978

by
Thomas J. Palumbo



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 SYMBOLS USED IN TABLES

- Represents zero.
 - X Not applicable.
 - Z Less than 0.05 percent.
 - * Based on fewer than 20 sample cases
 - 27+ The median fell in the category 27 weeks or more.
-

Statistics from a related survey, the 1972 Professional, Technical, and Scientific Manpower Survey, are found in U.S. Bureau of the Census, Technical Paper No. 33, *Characteristics of Persons in Engineering and Scientific Occupations: 1972*, and U.S. Bureau of the Census, Current Population Reports, Series P-23, No. 45, *Persons in Engineering, Scientific, and Technical Occupations: 1970 and 1972*.

The Census Bureau report based on the results of the 1974 National Survey of Scientists and Engineers is U.S. Bureau of the Census, Current Population Reports, Series P-23, No. 53, *Selected Characteristics of Persons in Fields of Science or Engineering: 1974*. The Census Bureau report based on the 1976 survey is U.S. Bureau of the Census, Current Population Reports, Series P-23, No. 76, *Selected Characteristics of Persons in Fields of Science or Engineering: 1976*. This is the fifth report in a series of reports based on the 1978 survey; the first report in the Series was U.S. Bureau of the Census, Current Population Reports, Series P-23, No. 108, *Selected Characteristics of Persons in Physical Science: 1978*.

For a list of the National Science Foundation reports based on the above-mentioned 1972 and 1974 surveys, see National Science Foundation, *Characteristics of the National Sample of Scientists and Engineers 1974, Part III* (NSF 76-330); and National Science Foundation, *U.S. Scientists and Engineers: 1974* (NSF 76-329). Two National Science Foundation reports based on the results of the 1976 National Survey of Natural and Social Scientists and Engineers are Science Resources Studies Highlights, *National Sample of Scientists and Engineers: Changes in Employment, 1972-1974 and 1974-1976* (NSF 77-322); and *Characteristics of Experienced Scientists and Engineers, 1976* (NSF 78-305). A National Science Foundation report containing results from the 1978 survey, along with other data from the Manpower Characteristics System, is *U.S. Scientists and Engineers 1978* (NSF 90-304).

Selected Characteristics of Persons in Social Science and Psychology: 1978

INTRODUCTION

The statistics in this report are based on the 1978 survey in a series of biennial surveys known as the National Sample of Scientists and Engineers. The series, sponsored by the National Science Foundation and conducted by the Bureau of the Census, began with the 1972 Professional, Technical, and Scientific Manpower Survey, with follow-up surveys of persons from the 1972 survey conducted in 1974, 1976, and 1978. All persons in the national sample were experienced workers who either had jobs in 1970 or were looking for jobs; new entrants into the labor force since 1970 were *not* included. Thus, almost all of the sample persons were 30 years old and over in 1978. In addition, the fields of science and engineering in the national sample were limited to persons who met strict educational, occupational, and professional qualifications. For these reasons, persons in the 1978 National Sample represented approximately 1.5 million scientists and engineers, only a part of the Nation's total scientific and engineering work force. (The Department of Labor estimated that, based on occupational qualifications alone, there were 2.4 million scientists and engineers in the United States in 1978).¹

This report is the fifth in a series of reports based on the 1978 survey. Profiled here are the 50,100 persons represented in the national sample's field of social scientists (19,312 economists, 12,206 sociologists and anthropologists, and 18,582 other social scientists) and the 38,170 persons represented in the field of psychologists.

COMPOSITION (TABLE 1)

The social scientists and psychologists represented in the national sample were predominantly male (81 percent and 73 percent, respectively). Among the various categories of social scientists, women constituted about 27 percent of the sociologists and anthropologists, about 24 percent of the other social scientists, and only about 11 percent of the economists. About 28 percent of the psychologists were female.

The median age in 1978 of these experienced social scientists was 45 years; the median age for psychologists was 44 years.

The geographic distribution of social scientists was similar to that of the general population of the United States 25 years and over, although a slightly lower proportion resided in the North Central Region than did the comparable general population. Psychologists were much more likely to live in the Northeast Region and much less likely to live in the South in 1978 than the comparable general population (figure).²

Most of the social scientists and psychologists were White (96 percent and 98 percent, respectively). Only about 2 percent of the social scientists and under 1 percent of the psychologists reported that they were of Hispanic origin.

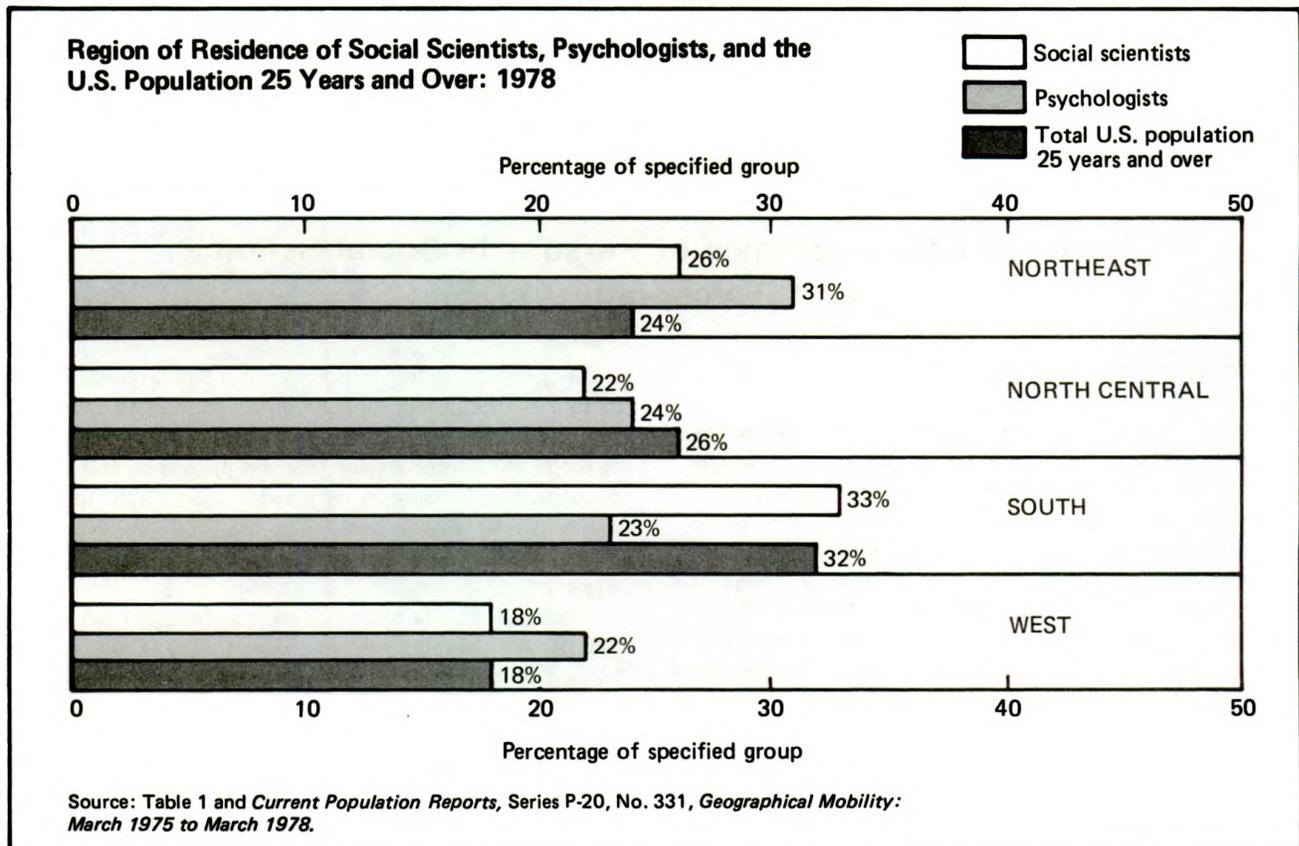
The fields of science or engineering (S/E) in the national sample are much more strictly defined categories than occupations. In general, to be classified into a specific field, a person had to have at least two of the following three characteristics: (1) employment in one of a set of specified occupations, (2) an academic degree among a set of specified academic disciplines, and (3) self-identification within a set of specified professions. Because of these criteria, it was possible for persons in each field to be distributed among a spectrum of occupations. Not surprisingly, however, a large proportion of the social scientists employed in February 1978 were in social science occupations (about 72 percent). Nearly a quarter of the employed persons in the social scientist field worked as "managers and administrators." Among the employed persons in the psychologist field, 81 percent listed "psychologists" and about 13 percent reported "managers and administrators" as their occupation.

EDUCATION AND TRAINING (TABLE 2)

As their highest academic degree, about half of the social scientists held doctorate degrees (about 51 percent), about 31 percent had master's degrees, and about 18 percent had bachelor's degrees. However, about two-thirds of the psychologists held doctorate degrees, about 28 percent held master's degrees, and only about 7 percent held bachelor's degrees. About 82 percent of the social scientists held their highest degree in economics, sociology, anthropology, or some other social science; about 93 percent of the psychologists held their highest degree in psychology.

¹ U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earnings*, Vol. 26, No. 1, January 1979.

² Current Population Reports, Series P-20, No. 331, *Geographical Mobility: March 1975 to March 1978*.



Supplementary training programs (such as on-the-job training and employer training programs) gave social scientists and psychologists the opportunity to maintain or improve their academic skills. About 33 percent of the social scientists and about 52 percent of the psychologists took advantage of these programs in 1977.³

PROFESSIONAL EXPERIENCE AND GROWTH OF THE FIELD (TABLE 3)

Most of the social scientists and psychologists have been involved in professional work, though not necessarily as social scientists or as psychologists, for a number of years. About 93 percent of the social scientists had more than 5 years of professional experience, 71 percent had over 10 years, and 31 percent had more than 20 years. The distribution of psychologists by professional experience was similar to that of social scientists. The median number of years of professional experience for persons in both fields was 16.

The figures in the lower distribution of table A show the interfield mobility between 1976 and 1978 of persons in the national sample. Among persons who were in the social science field in 1976, about 78 percent were social scientists in 1978, 4 percent were in some other S/E field, and about 18 percent were outside S/E fields. Persons in the field of psychology in 1976 had a slightly different 1976-78 mobility pattern than did social scientists. Among psychologists in

³Note that the categories of supplemental training are not mutually exclusive: the same person may have received more than one kind of supplemental training.

1976, 89 percent were psychologists in 1978; about 11 percent were outside S/E fields altogether in 1978. The upper percent distribution of table A shows the 1978 fields, particularly social scientists and psychologists, in terms of their 1976 components.

About 31 percent of the social scientists employed in February 1978 and February 1976 changed jobs⁴ during the 2-year period; for two-fifths of these job changers, the change in jobs involved a change in detailed occupation. Of social scientists employed in February 1978 and January 1974, 44 percent changed jobs during the 4-year period; of these, 45 percent changed detailed occupations. Finally, of the social scientists employed in February 1978 and January 1972, 54 percent changed jobs during the 6-year period; of these, 42 percent changed detailed occupations.

Among psychologists, the comparable job-changing pattern was as follows: 27 percent changed jobs during the 1976-78 period, 41 percent during the 1974-78 period, and 51 percent between 1972 and 1978. Job changing involved a change in detailed occupation for somewhat over 30 percent of the job changers in each period.

LABOR FORCE PARTICIPATION (TABLE 4)

In February 1978, 90 percent of the social scientists and 93 percent of the psychologists were in the labor force. Of those not in the labor force, 73 percent of the social scientists and 58 percent of the psychologists were retired.

⁴That is, changed employers or remained with the same employer, but had a significant change in their duties, level of responsibility, or occupation.

Table A. Field of Science or Engineering in 1978, by Field of Science or Engineering in 1976

(Numbers in thousands)

Field of science or engineering in 1976	Total national sample in 1978	In field of science or engineering 1978				Not in S/E field in 1978
		Total	Social scientists	Psychologists	Other S/E field	
Total national sample in 1976.....	1,350	1,138	50	38	1,050	211
In S/E field in 1976.....	1,119	1,029	41	35	953	90
Social scientists.....	50	42	40	-	2	9
Psychologists.....	38	34	-	33	-	4
Other S/E field.....	1,030	953	1	2	951	77
Not in S/E field in 1976.....	173	64	6	2	56	109
Did not report in 1976.....	57	45	2	2	41	12
PERCENT DISTRIBUTION						
Total national sample in 1976.....	100.0	100.0	100.0	100.0	100.0	100.0
In S/E field in 1976.....	83.0	90.4	82.0	92.1	90.8	42.7
Social scientists.....	3.8	3.7	80.0	(Z)	0.2	4.3
Psychologists.....	2.9	3.0	(Z)	86.8	(Z)	2.0
Other S/E field.....	76.3	83.7	2.0	5.3	90.6	36.5
Not in S/E field in 1976.....	12.8	5.6	12.0	5.3	5.3	51.6
Did not report in 1976.....	4.2	3.9	4.0	5.3	3.9	5.7
Total national sample in 1976.....	100.0	84.3	3.7	2.8	77.8	15.6
In S/E field in 1976.....	100.0	92.0	3.7	3.1	85.2	8.0
Social scientists.....	100.0	82.4	78.4	(Z)	4.0	17.6
Psychologists.....	100.0	89.5	(Z)	86.8	(Z)	10.5
Other S/E field.....	100.0	92.5	(Z)	0.2	92.3	7.5
Not in S/E field in 1976.....	100.0	36.9	3.5	1.2	32.3	63.0
Did not report in 1976.....	100.0	78.9	3.5	3.5	71.9	22.1

- Represents zero.
Z Less than 0.05 percent.

Source: Table 3 and unpublished data from the 1978 National Sample of Scientists and Engineers.

The unemployment rate (the number unemployed as a percent of those in the labor force) for social scientists was 1.4 percent in February 1978; for psychologists, it was 1.1 percent. This was similar to the national unemployment rate of male professional, technical, and kindred workers 25 years and over in February 1978 (not seasonally adjusted) of 1.5 percent (table B).^{5 6}

About 5 percent of both the social scientists and the psychologists experienced unemployment at one time or another in calendar year 1977. Social scientists and psychologists with unemployment spent a median of 15 weeks seeking employment in 1977. About a third of both the social scientists with unemployment and the psychologists

with unemployment sought employment for 27 weeks or more in 1977.

Most of the employed social scientists and employed psychologists (about 94 percent and 92 percent, respectively) had full-time jobs (table C). Of those employed full time, approximately 88 percent of the social scientists and 94 percent of the psychologists held scientific or engineering positions.

About 79 percent of the social scientists who worked part time in February 1978 and 76 percent of the part-time employed psychologists were not seeking full-time employment (table C).⁷

The majority of the employed social scientists were concentrated in three industry groups in 1978: educational

⁵ U.S. Department of Labor, Bureau of Labor Statistics, unpublished Current Population Survey data.

⁶ The apparent differences between these 3 unemployment rates are not statistically significant.

⁷ The apparent differences between the 76 percent and the 79 percent is not statistically significant.

Table B. Employment Status of Social Scientists and Psychologists in February 1978

Employment status	Social scientists								Psychologists	
	Total		Economists		Sociologists and anthropologists		Other social scientists		Number	Percent
	Number	Percent	Number	Percent	Number	Percent	Number	Percent		
Total in labor force in February 1978.....	45,269	100.0	17,329	100.0	11,239	100.0	16,701	100.0	35,560	100.0
Employed.....	14,639	98.6	17,162	99.0	11,145	99.2	16,332	97.8	35,155	98.9
Unemployed.....	630	1.4	166	1.0	94	0.8	370	2.2	405	1.1

Source: Table 4.

Table C. Full- and Part-Time Work Status of Social Scientists and Psychologists in 1978 Employed in February 1978

Full- or part-time work status	Social scientists								Psychologists	
	Total		Economists		Sociologists and anthropologists		Other social scientists			
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total employed in February 1978.....	44,639	100.0	17,162	100.0	11,145	100.0	16,332	100.0	35,155	100.0
Full time.....	42,130	94.4	16,457	95.9	10,518	94.4	15,155	92.8	32,303	91.9
Part time.....	2,358	5.3	672	3.9	600	5.4	1,087	6.7	2,803	8.0
Seeking full-time work.....	457	1.0	63	0.4	275	2.5	120	0.7	659	1.9
Not seeking full-time work...	1,857	4.2	565	3.3	325	2.9	967	5.9	2,129	6.1
Seeking not reported.....	43	0.1	43	0.3	-	-	-	-	14	(2)
Full or part time not reported.	151	0.3	34	0.2	28	0.3	90	0.6	49	0.1

- Represents zero.

Z Less than 0.05 percent.

Source: Table 4.

institutions (48 percent), with a heavy concentration in colleges and universities (43 percent); services, except education and health (13 percent); and public administration (17 percent). About half of the employed psychologists worked in educational institutions; about 24 percent were employed in health services.

The 1978 survey asked persons to describe the type of organization of their principal employment or postdoctoral appointment. Among the social scientists employed in February 1978, 47 percent specified their employer's organization as an educational institution, 21 percent as a (private) business or industry, and 22 percent as Federal, State, or local government. The business and government figures are insignificantly different. The comparable percentages for employed psychologists were educational institutions, 49 percent; (private) business or industry, 20 percent; hospital or clinics, 16 percent; and government, 9 percent.⁸

When asked to identify their primary work activity, 32 percent of the social scientists employed in February 1978 specified teaching and training, 29 percent identified management or administration,⁹ and 13 percent specified research and development. Almost 7 percent were involved in applied R & D. The largest proportions of employed psychologists were primarily involved in teaching and training (26 percent), consulting (22 percent), and management or administration (22 percent).¹⁰

The social scientists and psychologists in the national sample were asked to choose, from a list of topics of critical national interest, the problem to which they devoted the most professional time. The largest proportions of psycholo-

⁸ The differences between the employment levels of social scientists and psychologists in the areas of education and business here are not statistically significant.

⁹ The apparent difference between the 29 percent and the 32 percent is not statistically significant.

¹⁰ The apparent difference between the 22 percent for consulting and the 26 percent for teaching and training is not statistically significant; there is some evidence that the difference between the 22 percent for management and the 26 percent for teaching is significant.

gists listed education (35 percent) and health (33 percent);¹¹ only education (mainly teaching) was listed by a notable proportion of the social scientists (29 percent). Nearly one-fourth of social scientists did not report involvement with a national interest topic or indicated that the inquiry was not applicable to them, compared with 16 percent of the psychologists.

The Federal government supported or sponsored at least some of the work of 43 percent of the social scientists and 39 percent of the psychologists.¹² Among social scientists, the Department of Health, Education, and Welfare at least partially funded 13 percent, the Department of Agriculture funded 6 percent, and the Department of Defense funded a similar percentage. Among psychologists, the Department of Health, Education, and Welfare funded 26 percent.

INCOME (TABLE 5)

The median basic annual salary rate of social scientists employed full time in February 1978 was \$27,314 dollars. The median for economists was \$30,288, while that for sociologists and anthropologists was \$25,696 and that for other social scientists was \$26,345. The median for psychologists was \$26,326.¹³ Although not strictly comparable with these figures,¹⁴ the median earnings in 1977, as esti-

¹¹ The apparent difference between the 33 percent and the 35 percent is not statistically significant.

¹² There is some evidence that the 43 and 39 percent are statistically significant.

¹³ Apparent differences between the median basic annual salaries of the following groups are not statistically significant: social scientists (total) and sociologists and anthropologists; social scientists (total) and other social scientists; social scientists (total) and psychologists; sociologists and anthropologists and other social scientists; sociologists and anthropologists and psychologists; other social scientists and psychologists.

¹⁴ The CPS concept "earnings" includes more sources of remuneration than does the national sample concept of "basic annual salary"; there were also other differences between the national sample's basic annual salary concept and the CPS earnings concept, including differences in reference periods and data collection procedures. CPS figures for 1977 are cited because 1977 is the full year most nearly comparable with the reference year for the 1978 national sample question on basic annual salary.

mated from the CPS,¹⁵ for male professional, technical, and kindred workers, 14 years old and over, who worked year round full time, was \$18,224; the comparable figure for women was \$11,995. Male year-round, full-time workers 25 years old and over with 4 or more years of college (regardless of occupation) had mean earnings in 1977 of \$21,441; those with 5 or more years of college had mean earnings of \$25,782.

Results from the 1976 survey of the National Sample of Scientists and Engineers showed a median basic annual salary in February 1976 of social scientists employed full time in

February 1976 of \$24,217; the comparable median for psychologists was \$22,551. Thus, the median basic annual salary of full-time employed social scientists rose by \$3,097, while that of full-time employed psychologists rose by \$3,775 over the 2-year period. However, when the 1976 and 1978 basic annual salaries are expressed in constant 1977 dollars, the increase is approximately \$49 for social scientists and \$935 for psychologists;¹⁶ both increases are statistically insignificant.

¹⁶The 1976-78 comparisons in terms of constant 1977 dollars must be approached cautiously. Problems are introduced into the comparisons by, among other things, the way the basic annual salary data are defined and collected, the differences between the non-response adjustment procedures of the 1976 and 1978 surveys, and the difficulty of establishment appropriate time periods for the constant dollar computations.

¹⁵U.S. Department of Commerce, Bureau of the Census, Current Population Reports, *Money Income in 1977 of Families and Persons in the United States*, Series P-60, No. 118.

Table 1. Occupation, Professional Identification, and Selected Characteristics of Social Scientists and Psychologists: 1978

(Detail may not add to total because of rounding. For meaning of symbols, see text)

Occupation, professional identification, and selected characteristics	Social scientists								Psychologists	
	Total		Economists		Sociologists and anthropologists		Other social scientists		Number	Percent
	Number	Percent	Number	Percent	Number	Percent	Number	Percent		
Total	50,100	100.0	19,312	100.0	12,206	100.0	18,582	100.0	38,170	100.0
Male.....	40,360	80.6	17,260	89.4	8,938	73.2	14,162	76.2	27,687	72.5
Female.....	9,740	19.4	2,052	10.6	3,268	26.8	4,420	23.8	10,483	27.5
Under 30 years.....	267	0.5	46	0.2	-	-	221	1.2	328	0.9
30 to 34 years.....	7,624	15.2	3,056	15.8	1,916	15.7	2,652	14.3	6,902	18.1
35 to 39 years.....	9,543	19.0	3,215	16.6	2,563	21.0	3,765	20.3	8,028	21.0
40 to 44 years.....	8,222	16.4	2,907	15.1	2,234	18.3	3,081	16.6	5,444	14.3
45 to 49 years.....	7,405	14.8	2,562	13.3	1,702	13.9	3,141	16.9	5,755	15.1
50 to 54 years.....	5,237	10.5	1,964	10.2	1,324	10.8	1,949	10.5	4,740	12.4
55 to 59 years.....	5,367	10.7	2,033	10.5	1,266	10.4	2,063	11.1	3,491	9.1
60 to 64 years.....	2,754	5.5	1,386	7.2	619	5.1	750	4.0	1,715	4.5
65 to 69 years.....	1,791	3.6	992	5.1	359	2.9	439	2.4	1,073	2.8
70 years and over.....	1,895	3.8	1,151	6.0	223	1.8	521	2.8	695	1.8
Median age.....	45	(X)	46	(X)	44	(X)	44	(X)	44	(X)
RESIDENCE IN 1978										
Total	50,100	100.0	19,312	100.0	12,206	100.0	18,582	100.0	38,170	100.0
United States.....	49,264	98.3	18,994	98.4	12,048	98.7	18,221	98.1	37,852	99.2
Northeast.....	12,880	25.7	4,341	22.5	3,512	28.8	5,028	27.1	11,699	30.6
New England.....	3,302	6.6	934	4.8	1,316	10.8	1,052	5.7	3,029	7.9
Middle Atlantic.....	9,579	19.1	3,407	17.6	2,196	18.0	3,976	21.4	8,670	22.7
North Central.....	10,977	21.9	3,787	19.6	3,075	25.2	4,115	22.1	9,153	24.0
East North Central.....	7,396	14.8	2,287	11.8	2,052	16.8	3,057	16.5	6,921	18.1
West North Central.....	3,582	7.1	1,500	7.8	1,023	8.4	1,058	5.7	2,231	5.8
South.....	16,323	32.6	8,079	41.8	2,604	21.3	5,640	30.4	8,675	22.7
South Atlantic.....	11,536	23.0	5,793	30.0	1,826	15.0	3,917	21.1	5,146	13.5
East South Central.....	2,006	4.0	878	4.5	371	3.0	757	4.1	1,191	3.1
West South Central.....	2,781	5.6	1,407	7.3	407	3.3	966	5.2	2,338	6.1
West.....	9,083	18.1	2,788	14.4	2,858	23.4	3,438	18.5	8,325	21.8
Mountain.....	2,243	4.5	777	4.0	877	7.2	588	3.2	1,967	5.2
Pacific.....	6,841	13.7	2,011	10.4	1,980	16.2	2,850	15.3	6,358	16.7
Outlying areas.....	13	(2)	13	(2)	-	-	-	-	16	(2)
Foreign countries.....	824	1.6	305	1.6	158	1.3	361	1.9	302	0.8
Not reported.....	-	-	-	-	-	-	-	-	-	-
RACE										
Total	50,100	100.0	19,312	100.0	12,206	100.0	18,582	100.0	38,170	100.0
White.....	48,131	96.1	18,568	96.1	11,577	94.8	17,986	96.8	37,319	97.8
Black.....	1,049	2.1	150	0.8	473	3.9	425	2.3	703	1.8
American Indian.....	32	(2)	32	0.2	-	-	-	-	22	(2)
Chinese, Japanese, Korean.....	719	1.4	449	2.3	142	1.2	128	0.7	29	(2)
All other races.....	170	0.3	113	0.6	14	0.1	43	0.2	98	0.3
HISPANIC HERITAGE										
Total	50,100	100.0	19,312	100.0	12,206	100.0	18,582	100.0	38,170	100.0
Hispanic.....	1,102	2.2	577	3.0	106	0.9	420	2.3	246	0.6
Not Hispanic.....	46,672	93.2	17,893	92.7	11,695	95.8	17,084	91.9	36,915	96.7
Not reported.....	2,326	4.6	842	4.4	406	3.3	1,078	5.8	1,010	2.6

Table 1. Occupation, Professional Identification, and Selected Characteristics of Social Scientists and Psychologists: 1978—Continued

(Detail may not add to total because of rounding. For meaning of symbols, see text)

Occupation, professional identification, and selected characteristics	Social scientists								Psychologists	
	Total		Economists		Sociologists and anthropologists		Other social scientists		Number	Percent
	Number	Percent	Number	Percent	Number	Percent	Number	Percent		
OCCUPATION IN 1978										
Total employed in February 1978....	44,639	100.0	17,162	100.0	11,145	100.0	16,332	100.0	35,155	100.0
Computer specialists, total.....	-	-	-	-	-	-	-	-	-	-
Computer systems analysts.....	-	-	-	-	-	-	-	-	-	-
Computer scientists.....	-	-	-	-	-	-	-	-	-	-
Computer programmers.....	-	-	-	-	-	-	-	-	-	-
Other computer fields.....	-	-	-	-	-	-	-	-	-	-
Engineers, total.....	17	(Z)	-	-	17	0.2	-	-	58	0.2
Aeronautical and astronautical....	-	-	-	-	-	-	-	-	-	-
Agricultural.....	-	-	-	-	-	-	-	-	-	-
Chemical.....	-	-	-	-	-	-	-	-	-	-
Civil and architectural.....	17	(Z)	-	-	17	0.2	-	-	-	-
Electrical and electronic.....	-	-	-	-	-	-	-	-	39	0.1
Industrial.....	-	-	-	-	-	-	-	-	-	-
Mechanical.....	-	-	-	-	-	-	-	-	-	-
Metallurgical and materials.....	-	-	-	-	-	-	-	-	-	-
Mining, petroleum, and geological..	-	-	-	-	-	-	-	-	-	-
Nuclear.....	-	-	-	-	-	-	-	-	-	-
Environmental and sanitary.....	-	-	-	-	-	-	-	-	-	-
Operations research/systems.....	-	-	-	-	-	-	-	-	20	(Z)
Other engineering fields.....	-	-	-	-	-	-	-	-	-	-
Mathematicians and statisticians, total..	150	0.3	36	0.2	114	1.0	-	-	32	(Z)
Mathematicians.....	-	-	-	-	-	-	-	-	-	-
Statisticians.....	55	0.1	36	0.2	19	0.2	-	-	32	(Z)
Actuaries.....	-	-	-	-	-	-	-	-	-	-
Operations research.....	95	0.2	-	-	95	0.9	-	-	-	-
Life scientists.....	17	(Z)	-	-	17	0.2	-	-	184	0.5
Agricultural scientists.....	-	-	-	-	-	-	-	-	-	-
Biological scientists.....	-	-	-	-	-	-	-	-	33	(Z)
Biochemists.....	-	-	-	-	-	-	-	-	31	(Z)
Biophysicists.....	-	-	-	-	-	-	-	-	-	-
Medical scientists.....	17	(Z)	-	-	17	0.2	-	-	121	0.3
Other life scientists.....	-	-	-	-	-	-	-	-	-	-
Physical scientists, total.....	23	(Z)	-	-	-	-	23	0.1	-	-
Chemists.....	-	-	-	-	-	-	-	-	-	-
Physicists and astronomers.....	-	-	-	-	-	-	-	-	-	-
Other physical scientists.....	23	(Z)	-	-	-	-	23	0.1	-	-
Environmental scientists, total.....	-	-	-	-	-	-	-	-	-	-
Earth scientists.....	-	-	-	-	-	-	-	-	-	-
Atmospheric scientists.....	-	-	-	-	-	-	-	-	-	-
Oceanographers.....	-	-	-	-	-	-	-	-	-	-
Psychologists.....	17	(Z)	-	-	-	-	17	0.1	28,617	81.4
Social scientists, total.....	32,096	71.9	13,386	78.0	7,808	70.1	10,902	66.8	165	0.5
Economists.....	13,379	30.0	13,349	77.8	-	-	30	0.2	-	-
Sociologists and anthropologists.....	7,764	17.4	-	-	7,764	69.7	-	-	79	0.2
Other social scientists.....	10,953	24.5	37	0.2	44	0.4	10,872	66.6	86	0.2
Health occupations.....	65	0.1	19	0.1	-	-	47	0.3	304	0.9
Physician or surgeon.....	-	-	-	-	-	-	-	-	-	-
Dental technician.....	-	-	-	-	-	-	-	-	110	0.3
Medical technician.....	-	-	-	-	-	-	-	-	-	-
Other health occupations.....	65	0.1	19	0.1	-	-	47	0.3	194	0.6
Technicians and technologists, except medical.....	-	-	-	-	-	-	-	-	18	(Z)
Teachers ¹	999	2.2	188	1.1	502	4.5	309	1.9	973	2.8
Administrators and managers.....	10,584	23.7	3,302	19.2	2,397	21.5	4,885	29.9	4,430	12.6
Other occupations.....	670	1.5	231	1.3	291	2.6	149	0.9	358	1.0
Not reported.....	-	-	-	-	-	-	-	-	14	(Z)

See footnote at end of table.

Table 1. Occupation, Professional Identification, and Selected Characteristics of Social Scientists and Psychologists: 1978—Continued

(Detail may not add to total because of rounding. For meaning of symbols, see text)

Occupation, professional identification, and selected characteristics	Social scientists								Psychologists	
	Total		Economists		Sociologists and anthropologists		Other social scientists		Number	Percent
	Number	Percent	Number	Percent	Number	Percent	Number	Percent		
PROFESSIONAL IDENTIFICATION IN 1978										
Total.....	50,100	100.0	19,312	100.0	12,206	100.0	18,582	100.0	38,170	100.0
Computer specialists.....	77	0.2	34	0.2	-	-	43	0.2	92	0.2
Engineers.....	239	0.5	48	0.2	-	-	191	1.0	138	0.4
Mathematicians and statisticians.....	129	0.3	111	0.6	-	-	19	(Z)	66	0.2
Life scientists.....	271	0.5	201	1.0	19	0.2	51	0.3	166	0.4
Physical scientists.....	54	0.1	-	-	54	0.4	-	-	29	(Z)
Environmental scientists.....	85	0.2	-	-	-	-	85	0.5	14	(Z)
Psychologists.....	18	(Z)	-	-	18	0.1	-	-	33,293	87.2
Social scientists.....	38,998	77.8	15,803	81.8	10,178	83.4	13,017	70.1	445	1.2
Health occupations.....	33	(Z)	14	(Z)	18	0.1	-	-	48	0.1
Technicians, except medical.....	-	-	-	-	-	-	-	-	-	-
Teachers.....	685	1.4	293	1.5	109	0.9	283	1.5	328	0.9
Administrators.....	8,243	16.5	2,371	12.3	1,645	13.5	4,428	22.8	3,011	7.9
All other occupations.....	189	0.4	43	0.2	13	0.1	134	0.7	195	0.5

¹College or university teachers of science or engineering are excluded from teachers and included in occupation corresponding to subject taught.

Table 2. Selected Educational Characteristics of Social Scientists and Psychologists: 1978

(Detail may not add to total because of rounding. For meaning of symbols, see text)

Selected educational characteristics	Social scientists								Psychologists	
	Total		Economists		Sociologists and anthropologists		Other social scientists		Number	Percent
	Number	Percent	Number	Percent	Number	Percent	Number	Percent		
HIGHEST DEGREE HELD										
Total.....	50,100	100.0	19,312	100.0	12,206	100.0	18,582	100.0	38,170	100.0
With a degree.....	50,100	100.0	19,312	100.0	12,206	100.0	18,582	100.0	38,170	100.0
Associate.....	-	-	-	-	-	-	-	-	-	-
Bachelor's.....	8,894	17.8	4,071	21.1	1,482	12.1	3,341	18.0	2,619	6.9
Master's.....	15,326	30.6	4,936	25.6	2,595	21.3	7,795	41.9	10,545	27.6
Doctorate.....	25,580	51.1	10,181	52.7	8,092	66.3	7,307	39.3	24,956	65.4
Professional/medical.....	299	0.6	124	0.6	36	0.3	139	0.7	50	0.1
Other.....	-	-	-	-	-	-	-	-	-	-
No degree.....	-	-	-	-	-	-	-	-	-	-
Not reported.....	-	-	-	-	-	-	-	-	-	-
MAJOR FIELD OF STUDY FOR HIGHEST DEGREE HELD										
Total.....	50,100	100.0	19,312	100.0	12,206	100.0	18,582	100.0	38,170	100.0
Computer science and systems analysis....	59	0.1	59	0.3	-	-	-	-	-	-
Engineering.....	183	0.4	52	0.3	-	-	131	0.7	84	0.2
Mathematical sciences.....	156	0.3	57	0.3	17	0.1	83	0.4	33	(Z)
Agricultural sciences.....	237	0.5	237	1.2	-	-	-	-	-	-
Biological sciences.....	149	0.3	89	0.5	18	0.1	41	0.2	88	0.2
Medical sciences.....	174	0.3	19	0.1	-	-	155	0.8	96	0.3
Chemistry.....	-	-	-	-	-	-	-	-	-	-
Physics and astronomy.....	42	(Z)	17	(Z)	-	-	25	0.1	18	(Z)
Earth, space, and marine sciences.....	22	(Z)	22	0.1	-	-	-	-	-	-
Psychology.....	963	1.9	-	-	81	0.7	882	4.7	35,333	92.6
Economics.....	17,078	34.1	16,580	85.9	12	(Z)	487	2.6	-	-
Sociology and anthropology.....	12,379	24.7	66	0.3	11,233	92.0	1,080	5.8	90	0.2
Other social sciences.....	11,539	23.0	871	4.5	239	2.0	10,428	56.1	337	0.9
Business and commerce.....	791	1.6	589	3.1	36	0.3	166	0.9	30	(Z)
All other fields.....	5,961	11.9	446	2.3	464	3.8	5,050	27.2	1,802	4.7
All fields below BA.....	22	(Z)	22	0.1	-	-	-	-	22	(Z)
Field not reported.....	347	0.7	186	1.0	106	0.9	54	0.3	237	0.6
SUPPLEMENTAL TRAINING IN 1977¹										
Total.....	50,100	100.0	19,312	100.0	12,206	100.0	18,582	100.0	38,170	100.0
With supplemental training in 1977.....	16,389	32.7	5,634	29.2	3,294	27.0	7,461	40.1	19,778	51.8
On-the-job training.....	8,745	17.5	3,196	16.6	1,798	14.7	3,751	20.2	9,553	25.0
Military training applicable to civilian occupations.....	235	0.5	59	0.3	12	(Z)	164	0.9	78	0.2
Extension or correspondence courses....	1,171	2.3	344	1.8	161	1.3	666	3.6	1,560	4.1
Employer training programs.....	5,725	11.4	2,300	11.9	904	7.4	2,521	13.6	4,220	11.1
Adult education center.....	2,635	5.3	466	2.4	562	4.6	1,608	8.7	1,803	4.7
Other training.....	5,025	10.0	1,288	6.7	934	7.7	2,803	15.1	11,314	29.6
No supplemental training in 1977.....	27,898	55.7	11,319	58.6	7,772	63.7	8,806	47.4	14,997	39.3
Not reported.....	5,814	11.6	2,359	12.2	1,140	9.3	2,315	12.5	3,395	8.9

¹Sum of types of training may exceed total with training because of multiple response.

Table 3. Years of Professional Experience, Field of Science or Engineering in 1976, and Job Mobility of Social Scientists and Psychologists: 1978

(Detail may not add to total because of rounding. For meaning of symbols, see text)

Professional experience, field in 1976, and job mobility	Social scientists								Psychologists	
	Total		Economists		Sociologists and anthropologists		Other social scientists		Number	Percent
	Number	Percent	Number	Percent	Number	Percent	Number	Percent		
YEARS OF PROFESSIONAL EXPERIENCE										
Total.....	50,100	100.0	19,312	100.0	12,206	100.0	18,582	100.0	38,170	100.0
With years of professional experience reported.....	48,474	96.8	18,736	97.0	11,747	96.2	17,991	96.8	37,536	98.3
Less than 1 year.....	121	0.2	17	(Z)	105	0.9	-	-	62	0.2
1 to 5 years.....	1,858	3.7	464	2.4	614	5.0	780	4.2	2,291	6.0
6 to 10 years.....	10,881	21.7	3,906	20.2	3,116	25.5	3,860	20.8	8,707	22.8
11 to 15 years.....	11,617	23.2	3,995	20.7	2,775	22.7	4,847	26.1	8,048	21.1
16 to 20 years.....	8,461	16.9	3,418	17.7	2,152	17.6	2,891	15.6	6,530	17.1
21 to 25 years.....	5,283	10.5	2,308	12.0	959	7.9	2,015	10.8	4,771	12.5
26 to 30 years.....	4,753	9.5	1,591	8.2	1,101	9.0	2,061	11.1	4,233	11.1
31 to 35 years.....	2,599	5.2	1,527	7.9	548	4.5	524	2.8	1,302	3.4
36 to 40 years.....	1,543	3.1	756	3.9	221	1.8	566	3.0	961	2.5
41 years or more.....	1,357	2.7	755	3.9	156	1.3	445	2.4	650	1.7
Median years of professional experience	16	(X)	18	(X)	15	(X)	16	(X)	16	(X)
Years of professional experience not reported.....	1,626	3.2	576	3.0	459	3.8	591	3.2	634	1.7
FIELD OF SCIENCE OR ENGINEERING IN 1976										
Total.....	50,100	100.0	19,312	100.0	12,206	100.0	18,582	100.0	38,170	100.0
Computer specialists.....	277	0.6	122	0.6	-	-	155	0.8	150	0.4
Engineers.....	449	0.9	133	0.7	-	-	316	1.7	219	0.6
Mathematical specialists.....	394	0.8	244	1.3	84	0.7	66	0.4	19	(Z)
Mathematicians.....	89	0.2	72	0.4	17	0.1	-	-	-	-
Statisticians.....	305	0.6	172	0.9	67	0.5	66	0.4	19	(Z)
Life scientists.....	193	0.4	110	0.6	-	-	83	0.4	281	0.7
Agricultural scientists.....	150	0.3	110	0.6	-	-	40	0.2	-	-
Biologists.....	13	(Z)	-	-	-	-	13	0.1	44	0.1
Medical scientists.....	31	0.1	-	-	-	-	31	0.2	237	0.6
Physical scientists.....	25	(Z)	-	-	-	-	25	0.1	-	-
Chemists.....	25	(Z)	-	-	-	-	25	0.1	-	-
Physicists and astronomers.....	-	-	-	-	-	-	-	-	-	-
Other physical scientists.....	-	-	-	-	-	-	-	-	-	-
Environmental scientists.....	126	0.3	-	-	-	-	126	0.7	-	-
Earth scientists.....	102	0.2	-	-	-	-	102	0.5	-	-
Atmospheric scientists.....	-	-	-	-	-	-	-	-	-	-
Oceanographers.....	24	(Z)	-	-	-	-	24	0.1	-	-
Psychologists.....	404	0.8	-	-	37	0.3	367	2.0	33,330	87.3
Social scientists.....	39,969	79.8	16,134	83.5	10,297	84.4	13,538	72.9	517	1.4
Economists.....	15,743	31.4	15,603	80.8	45	0.4	95	0.5	-	-
Sociologists and anthropologists.....	10,380	20.7	-	-	10,023	82.1	357	1.9	32	0.1
Other social scientists.....	13,846	27.6	531	2.7	229	1.9	13,086	70.4	485	1.3
Not in a field in 1976.....	6,224	12.4	1,598	8.3	1,378	11.3	3,248	17.5	2,112	5.5
Did not report in 1976.....	2,039	4.1	970	5.0	410	3.4	659	3.5	1,541	4.0
JOB MOBILITY										
Total employed in February 1978....	44,639	100.0	17,162	100.0	11,145	100.0	16,332	100.0	35,155	100.0
Employed in February 1976.....	41,496	93.0	15,849	92.3	10,328	92.7	15,320	93.8	32,602	92.7
Job change since 1976.....	12,995	29.1	5,115	29.8	3,300	29.6	4,580	28.0	8,689	24.7
Occupation change.....	5,193	11.6	1,816	10.6	1,309	11.7	2,068	12.7	2,798	8.0
No occupation change.....	7,662	17.2	3,299	19.2	1,991	17.9	2,373	14.5	5,743	16.3
Occupation change not reported.....	140	0.3	-	-	-	-	140	0.9	148	0.4
Same job in 1976 and 1978.....	26,091	58.4	9,698	56.5	6,426	57.7	9,968	61.0	22,070	62.8
Not reported.....	2,410	5.4	1,036	6.0	602	5.4	772	4.7	1,843	5.2
Not employed or employment status not reported in February 1976.....	3,143	7.0	1,314	7.7	817	7.3	1,012	6.2	2,553	7.3
Employed in January 1974.....	41,344	92.6	16,363	95.3	10,192	91.5	14,788	90.5	32,930	93.7
Job change between 1974 and 1978.....	18,348	41.1	7,309	42.6	4,858	43.6	6,181	37.8	13,436	38.2
Occupation change.....	8,261	18.5	2,586	15.1	1,929	17.3	3,746	22.9	4,086	11.6
No occupation change.....	10,086	22.6	4,722	27.5	2,928	26.3	2,436	14.9	9,350	26.6
Occupation change not reported.....	-	-	-	-	-	-	-	-	-	-
Same job in 1974 and 1978.....	20,578	46.1	7,988	46.5	4,687	42.1	7,903	48.4	17,478	49.7
Not reported.....	2,418	5.4	1,066	6.2	647	5.8	704	4.3	2,015	5.7
Not employed or employment status not reported in February 1974.....	3,295	7.4	799	4.7	953	8.5	1,544	9.5	2,225	6.3
Employed in 1972.....	42,834	96.0	16,700	97.3	10,435	93.6	15,699	96.1	33,088	94.1
Job change between 1972 and 1978.....	23,220	52.0	9,430	54.9	5,613	50.4	8,177	50.1	16,711	47.5
Occupation change.....	9,826	22.0	3,114	18.1	2,716	24.4	3,996	24.5	5,578	15.9
No occupation change.....	13,394	30.0	6,316	36.8	2,897	26.0	4,181	25.6	11,133	31.7
Occupation change not reported.....	-	-	-	-	-	-	-	-	-	-
Same job in 1972 and 1978.....	17,059	38.2	6,175	36.0	4,176	37.5	6,707	41.1	14,254	40.5
Not reported.....	2,555	5.7	1,095	6.4	645	5.8	815	5.0	2,123	6.0
Not employed or employment status not reported in 1972.....	1,805	4.0	462	2.7	710	6.4	632	3.9	2,067	5.9

Table 4. Employment Status and Selected Job-Related Characteristics of Social Scientists and Psychologists: 1978

(Detail may not add to total because of rounding. For meaning of symbols, see text)

Employment status and selected job-related characteristics	Social scientists								Psychologists	
	Total		Economists		Sociologists and anthropologists		Other social scientists		Number	Percent
	Number	Percent	Number	Percent	Number	Percent	Number	Percent		
EMPLOYMENT STATUS IN FEBRUARY 1978										
Total.....	50,100	100.0	19,312	100.0	12,206	100.0	18,582	100.0	38,170	100.0
In labor force.....	45,269	90.4	17,329	89.7	11,239	92.1	16,701	89.9	35,560	93.2
Employed.....	44,639	89.1	17,162	88.9	11,145	91.3	16,332	87.9	35,155	92.1
Full time.....	42,130	84.1	16,457	85.2	10,518	86.2	15,155	81.6	32,303	84.6
Part time.....	2,358	4.7	672	3.5	600	4.9	1,087	5.8	2,803	7.3
Seeking full-time work.....	457	0.9	63	0.3	275	2.3	120	0.6	659	1.7
Not seeking full-time work.....	1,857	3.7	565	2.9	325	2.7	967	5.2	2,129	5.6
Not reported.....	43	(Z)	43	0.2	-	-	-	-	14	(Z)
Full or part time not reported.....	151	0.3	34	0.2	28	0.2	90	0.5	49	0.1
Unemployed.....	630	1.3	166	0.9	94	0.8	370	2.0	405	1.1
Not in labor force.....	4,831	9.6	1,983	10.3	967	7.9	1,881	10.1	2,611	6.8
Retired.....	3,519	7.0	1,613	8.4	508	4.2	1,398	7.5	1,523	4.0
Student.....	351	0.7	77	0.4	124	1.0	150	0.8	352	0.9
Family responsibilities.....	740	1.5	202	1.0	273	2.2	265	1.4	390	1.0
Could not find work.....	13	(Z)	-	-	13	0.1	-	-	47	0.1
Other.....	209	0.4	92	0.5	49	0.4	68	0.4	299	0.8
FULL-TIME EMPLOYMENT IN SCIENCE OR ENGINEERING IN 1978										
Total employed full time in February 1978.....	42,130	100.0	16,457	100.0	10,518	100.0	15,155	100.0	32,303	100.0
In science or engineering.....	37,011	87.8	14,700	89.3	9,034	85.9	13,276	87.6	30,446	94.3
Not in science or engineering.....	5,070	12.0	1,741	10.6	1,483	14.1	1,846	12.2	1,769	5.5
Preferred nonscience or nonengineering.....	1,333	3.2	512	3.1	420	4.0	401	2.6	484	1.5
Promoted out of science or engineering.....	811	1.9	400	2.4	55	0.5	356	2.3	314	1.0
Pay better in nonscience or nonengineering.....	532	1.3	75	0.5	388	3.7	68	0.5	76	0.2
Locational preference.....	169	0.4	33	0.2	71	0.7	65	0.4	196	0.6
Science or engineering position not available.....	122	0.3	59	0.4	63	0.6	-	-	66	0.2
Other reason.....	1,539	3.7	433	2.6	340	3.2	766	5.1	295	0.9
Reason not reported.....	565	1.3	229	1.4	146	1.4	190	1.3	339	1.0
Not reported.....	49	0.1	16	(Z)	-	-	33	0.2	88	0.3
UNEMPLOYMENT IN CALENDAR YEAR 1977										
Total.....	50,100	100.0	19,312	100.0	12,206	100.0	18,582	100.0	38,170	100.0
Unemployed in calendar year 1977.....	2,418	4.8	591	3.1	786	6.4	1,041	5.6	1,801	4.7
1 to 4 weeks.....	694	1.4	201	1.0	66	0.5	427	2.3	327	0.9
5 to 10 weeks.....	299	0.6	55	0.3	194	1.6	49	0.3	248	0.7
11 to 14 weeks.....	141	0.3	60	0.3	55	0.4	26	0.1	319	0.8
15 to 26 weeks.....	361	0.7	92	0.5	86	0.7	183	1.0	125	0.3
27 weeks or more.....	789	1.6	165	0.9	307	2.5	317	1.7	656	1.7
Median weeks of unemployment.....	15	(X)	13	(X)	20	(X)	15	(X)	14	(X)
Weeks of unemployment not reported.....	134	0.3	17	(Z)	78	0.6	39	0.2	126	0.3
Not unemployed in calendar year 1977.....	46,468	92.7	18,313	94.8	11,231	92.0	16,923	91.1	35,869	94.0
Not reported.....	1,215	2.4	408	2.1	189	1.5	618	3.3	500	1.3
INDUSTRY IN 1978										
Total employed in 1978.....	44,639	100.0	17,162	100.0	11,145	100.0	16,332	100.0	35,155	100.0
Agriculture, forestry, and fisheries.....	585	1.3	386	2.3	133	1.2	66	0.4	-	-
Mining and petroleum extraction.....	78	0.2	49	0.3	11	(Z)	18	0.1	-	-
Construction.....	131	0.3	113	0.7	18	0.2	-	-	185	0.5
Manufacturing, total.....	3,011	6.7	1,824	10.6	204	1.8	983	6.0	1,220	3.5
Primary metal industries.....	170	0.4	151	0.9	-	-	20	0.1	-	-
Fabricated metal industries.....	186	0.4	186	1.1	-	-	-	-	16	(Z)
Machinery, except electrical.....	95	0.2	-	-	-	-	95	0.6	-	-
Electrical machinery, equipment, and supplies.....	78	0.2	56	0.3	22	0.2	-	-	27	(Z)
Electronic machinery and computing equipment.....	367	0.8	161	0.9	-	-	206	1.3	295	0.8
Aircraft and aircraft parts.....	300	0.7	184	1.1	-	-	116	0.7	107	0.3
Motor vehicles and motor vehicle equipment.....	86	0.2	70	0.4	-	-	16	0.1	17	(Z)
Ordnance.....	-	-	-	-	-	-	-	-	17	(Z)
Chemicals and allied products.....	356	0.8	130	0.8	18	0.2	208	1.3	72	0.2
Petroleum refining and related industries.....	442	1.0	369	2.1	-	-	73	0.4	13	(Z)
Other manufacturing.....	932	2.1	518	3.0	164	1.5	249	1.5	657	1.9

Table 4. Employment Status and Selected Job-Related Characteristics of Social Scientists and Psychologists: 1978—Continued

(Detail may not add to total because of rounding. For meaning of symbols, see text)

Employment status and selected job-related characteristics	Social scientists								Psychologists	
	Total		Economists		Sociologists and anthropologists		Other social scientists		Number	Percent
	Number	Percent	Number	Percent	Number	Percent	Number	Percent		
INDUSTRY IN 1978--Continued										
Transportation, communications, and other public utilities.....	469	1.1	364	2.1	18	0.2	87	0.5	178	0.5
Wholesale and retail trade.....	418	0.9	303	1.8	115	1.0	-	-	294	0.8
Finance, insurance, and real estate.....	1,791	4.0	1,250	7.3	256	2.3	285	1.7	374	1.1
Educational institutions, total.....	21,462	48.1	6,259	36.5	7,660	68.7	7,543	46.2	17,733	50.4
College or university.....	19,097	42.8	5,910	34.4	6,686	60.0	6,500	39.8	10,339	29.4
Other.....	2,365	5.3	349	2.0	974	8.7	1,043	6.4	7,393	21.0
Health services.....	1,081	2.4	19	0.1	113	1.0	950	5.8	8,579	24.4
Services, except education and health, total.....	5,806	13.0	1,867	10.9	1,237	11.1	2,702	16.5	3,733	10.6
Engineering and architectural services.....	261	0.6	61	0.4	-	-	200	1.2	75	0.2
Research institutions.....	2,190	4.9	769	4.5	228	2.0	1,193	7.3	1,324	3.8
Other.....	3,355	7.5	1,038	6.0	1,009	9.1	1,308	8.0	2,334	6.6
Public administration.....	7,665	17.2	4,039	23.5	889	8.0	2,737	16.8	1,568	4.5
Federal.....	4,319	9.7	2,664	15.5	552	5.0	1,103	6.8	358	1.0
Other.....	3,317	7.4	1,360	7.9	337	3.0	1,619	9.9	1,150	3.3
Military.....	30	(Z)	15	(Z)	-	-	14	(Z)	60	0.2
Other industries.....	1,715	3.8	659	3.8	358	3.2	698	4.3	909	2.6
Not reported.....	426	1.0	30	0.2	133	1.2	263	1.6	381	1.1
TYPE OF EMPLOYER IN 1978										
Total employed in February 1978....	44,639	100.0	17,162	100.0	11,145	100.0	16,332	100.0	35,155	100.0
Business or industry.....	9,548	21.4	4,950	28.8	1,699	15.2	2,899	17.7	6,918	19.7
Educational institutions, total.....	21,175	47.4	6,176	36.0	7,605	68.2	7,394	45.3	17,299	49.2
Junior or 2-year college, technical institute.....	1,125	2.5	312	1.8	567	5.1	246	1.5	876	2.5
Medical school.....	380	0.9	16	(Z)	229	2.1	134	0.8	1,132	3.2
4-year college or university, except medical school.....	19,150	42.9	5,848	34.1	6,809	61.4	6,494	39.8	10,346	29.4
Elementary or secondary school system.....	520	1.2	-	-	-	-	520	3.2	4,945	14.1
Hospital or clinic.....	751	1.7	19	0.1	17	0.2	716	4.4	5,633	16.0
Nonprofit organization.....	2,218	5.0	408	2.4	692	6.2	1,118	6.8	1,541	4.4
U.S. military service/commissioned groups.....	51	0.1	15	(Z)	-	-	36	0.2	60	0.2
Government, total.....	9,952	22.3	4,965	28.9	1,042	9.3	3,944	24.2	3,218	9.2
Federal.....	6,173	13.8	3,667	21.4	626	5.6	1,880	11.5	964	2.7
State.....	2,052	4.6	820	4.8	252	2.3	980	6.0	1,312	3.7
Local or other.....	1,727	3.9	479	2.8	163	1.5	1,085	6.6	942	2.7
International agency.....	539	1.2	522	3.0	-	-	17	0.1	15	(Z)
Other.....	250	0.6	40	0.2	90	0.8	121	0.7	222	0.6
Not reported.....	154	0.3	68	0.4	-	-	86	0.5	249	0.7
PRIMARY WORK ACTIVITY IN 1978										
Total employed in February 1978....	44,639	100.0	17,162	100.0	11,145	100.0	16,332	100.0	35,155	100.0
Research and development.....	5,621	12.6	2,699	15.7	1,218	10.9	1,705	10.4	3,414	9.7
Basic research.....	1,727	3.9	259	1.5	781	7.0	688	4.2	1,073	3.1
Applied research.....	3,051	6.8	2,148	12.5	307	2.8	596	3.7	1,727	4.9
Development.....	695	1.6	158	0.9	130	1.2	407	2.5	508	1.4
Design.....	148	0.3	134	0.8	-	-	13	(Z)	106	0.3
Management or administration, total.....	12,931	29.0	4,739	27.6	3,113	27.9	5,079	31.1	7,746	22.0
Research and development.....	4,966	11.1	2,406	14.0	833	7.5	1,728	10.6	2,770	7.9
Other.....	7,965	17.8	2,333	13.6	2,280	20.5	3,352	20.5	4,976	14.2
Teaching and training.....	14,463	32.4	4,308	25.1	5,202	46.7	4,953	30.3	9,000	25.6
Production and inspection.....	2,523	5.7	1,253	7.3	383	3.4	887	5.4	1,189	3.4
Quality control.....	346	0.8	19	0.1	73	0.7	254	1.6	178	0.5
Operations.....	1,482	3.3	636	3.7	251	2.3	596	3.6	550	1.6
Distribution-sales.....	695	1.6	598	3.5	59	0.5	38	0.2	462	1.3
Consulting.....	1,953	4.4	773	4.5	42	0.4	1,138	7.0	7,832	22.3
Clinical diagnosis.....	617	1.4	-	-	28	0.2	590	3.6	5,355	15.2
Consulting.....	1,336	3.0	773	4.5	14	0.1	549	3.4	2,477	7.0
Report writing, statistical work, and computer applications.....	4,073	9.1	2,540	14.8	452	4.1	1,080	6.6	915	2.6
Report writing.....	2,389	5.4	1,226	7.1	349	3.1	814	5.0	583	1.7
Statistical work.....	1,603	3.6	1,274	7.4	85	0.8	244	1.5	302	0.9
Computer applications.....	80	0.2	41	0.2	18	0.2	22	0.1	30	(Z)
Other activities.....	2,488	5.6	746	4.3	580	5.2	1,163	7.1	4,637	13.2
Not reported.....	586	1.3	103	0.6	155	1.4	327	2.0	421	1.2

Table 4. Employment Status and Selected Job-Related Characteristics of Social Scientists and Psychologists: 1978—Continued

(Detail may not add to total because of rounding. For meaning of symbols, see text)

Employment status and selected job-related characteristics	Social scientists								Psychologists	
	Total		Economists		Sociologists and anthropologists		Other social scientists			
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
NATIONAL INTEREST TOPICS¹										
Total.....	50,100	100.0	19,312	100.0	12,206	100.0	18,582	100.0	38,170	100.0
Health.....	4,297	8.6	570	3.0	1,659	13.6	2,068	11.1	12,685	33.2
Education, total.....	14,444	28.8	4,262	22.1	5,127	42.0	5,054	27.2	13,433	35.2
Teaching.....	11,462	22.9	3,682	19.1	4,416	36.2	3,365	18.1	7,409	19.4
Other.....	2,981	6.0	580	3.0	711	5.8	1,690	9.1	6,024	15.8
Environmental protection, pollution control.....	1,875	3.7	814	4.2	403	3.3	658	3.5	109	0.3
Space.....	17	(Z)	-	-	-	-	17	(Z)	29	(Z)
National defense.....	2,132	4.3	566	2.9	41	0.3	1,525	8.2	1,048	2.7
Crime prevention and control.....	948	1.9	19	(Z)	359	2.9	570	3.1	752	2.0
Food production and technology.....	1,915	3.8	1,287	6.7	161	1.3	466	2.5	151	0.4
Energy and fuel.....	2,278	4.5	1,701	8.8	101	0.8	476	2.6	142	0.4
Other mineral resources.....	219	0.4	91	0.5	-	-	127	0.7	-	-
Community development and services.....	3,542	7.1	599	3.1	801	6.6	2,142	11.5	685	1.8
Housing.....	405	0.8	262	1.4	84	0.7	59	0.3	163	0.4
Other.....	6,085	12.1	2,972	15.4	809	6.6	2,304	12.4	2,692	7.1
Not applicable.....	8,749	17.5	4,807	24.9	2,129	17.4	1,812	9.8	4,215	11.0
Not reported.....	3,195	6.4	1,360	7.0	531	4.4	1,303	7.0	2,067	5.4
FEDERAL SUPPORT IN 1978²										
Total employed in February 1978....	44,639	100.0	17,162	100.0	11,145	100.0	16,332	100.0	35,155	100.0
With Federal support.....	19,049	42.7	6,877	40.1	4,081	36.6	8,092	49.5	13,637	38.8
Department of Agriculture.....	2,657	6.0	1,736	10.1	611	5.5	310	1.9	58	0.2
Department of Commerce.....	1,109	2.5	649	3.8	49	0.4	410	2.5	153	0.4
Department of Defense.....	2,313	5.2	641	3.7	189	1.7	1,483	9.1	1,445	4.1
Department of Energy.....	967	2.2	645	3.8	105	0.9	217	1.3	247	0.7
Department of Health, Education, and Welfare.....	5,944	13.3	662	3.9	2,205	19.8	3,077	18.8	9,252	26.3
Department of Housing and Urban Development.....	962	2.2	306	1.8	112	1.0	544	3.3	65	0.2
Department of the Interior.....	774	1.7	247	1.4	359	3.2	167	1.0	78	0.2
Department of Justice.....	610	1.4	76	0.4	155	1.4	379	2.3	426	1.2
Department of Labor.....	1,295	2.9	713	4.2	57	0.5	525	3.2	428	1.2
Department of Transportation.....	885	2.0	322	1.9	50	0.4	513	3.1	231	0.7
Agency for International Development....	630	1.4	222	1.3	140	1.3	268	1.6	30	(Z)
Environmental Protection Agency.....	627	1.4	374	2.2	71	0.6	182	1.1	47	0.1
NASA.....	130	0.3	43	0.2	17	0.1	71	0.4	77	0.2
National Science Foundation.....	1,465	3.3	323	1.9	668	6.0	474	2.9	1,202	3.4
Nuclear Regulatory Commission.....	156	0.3	136	0.8	-	-	20	0.1	16	(Z)
Other department or agency.....	2,920	6.5	1,346	7.8	366	3.3	1,207	7.4	1,352	3.8
Agency not known.....	403	0.9	122	0.7	18	0.2	263	1.6	506	1.4
Agency not reported.....	351	0.8	211	1.2	122	1.1	17	0.1	298	0.8
No Federal support.....	23,217	52.0	9,515	55.4	6,343	56.9	7,359	45.1	18,269	52.0
Federal support not known.....	1,928	4.3	573	3.3	655	5.9	700	4.3	2,668	7.6
Not reported.....	444	1.0	198	1.2	66	0.6	180	1.1	581	1.7

¹Area of national concern in which persons devoted the largest proportion of professional time.

²Sum of individual agencies support may exceed total with Federal support because of multiple response.

Table 5. Basic Annual Salary Rate of Full-Time Employed Social Scientists and Psychologists: 1978

(Detail may not add to total because of rounding. For meaning of symbols, see text)

Salary	Social scientists								Psychologists	
	Total		Economists		Sociologists and anthropologists		Other social scientists		Number	Percent
	Number	Percent	Number	Percent	Number	Percent	Number	Percent		
Total employed full time in February 1978.....	42,130	100.0	16,457	100.0	10,518	100.0	15,155	100.0	32,303	100.0
With salary ¹ reported.....	41,134	97.6	16,011	97.3	10,325	98.2	14,798	97.6	30,692	95.0
Less than \$8,000.....	452	1.1	19	0.1	153	1.5	281	1.9	23	(2)
\$8,000 to \$9,999.....	54	0.1	-	-	-	-	54	0.4	202	0.6
\$10,000 to \$14,999.....	1,415	3.4	298	1.8	604	5.7	513	3.4	775	2.4
\$15,000 to \$19,999.....	4,863	11.5	1,249	7.6	1,759	16.7	1,854	12.2	3,600	11.1
\$20,000 to \$24,999.....	8,710	20.7	2,930	17.8	2,152	20.5	3,628	23.9	8,357	25.9
\$25,000 to \$29,999.....	8,932	21.2	3,247	19.7	2,664	25.3	3,021	19.9	6,755	20.9
\$30,000 to \$39,999.....	10,873	25.8	5,082	30.9	2,335	22.2	3,456	22.8	7,642	23.7
\$40,000 to \$49,999.....	4,225	10.0	2,011	12.2	513	4.9	1,701	11.2	2,134	6.6
\$50,000 and over.....	1,610	3.8	1,175	7.1	145	1.4	290	1.9	1,204	3.7
Median salary (dollars).....	\$27,314	(X)	\$30,288	(X)	\$25,696	(X)	\$26,345	(X)	\$26,326	(X)
Salary not reported.....	996	2.4	446	2.7	193	1.8	358	2.4	1,611	5.0

¹Refers to salary for job held during the week of February 12-18, 1978.

Appendix A. Definitions and Explanations

The 1978 National Survey of Natural and Social Scientists and Engineers was the fourth survey based on the 1970 population of scientists and engineers. It was conducted by the Bureau of the Census for the National Science Foundation. The first survey, the 1972 Professional, Technical, and Scientific Manpower Survey,¹ was conducted among a nationwide sample of approximately 150,000 persons who were recorded in the 1970 Census of Population as being in the experienced civilian labor force in 1 of 63 engineering, scientific, or related occupations. The survey also included a small sample of persons who had completed 4 or more years of college, but were not in any of the specified occupations. Based on responses in the 1972 survey and on criteria established by the National Science Foundation, approximately 50,000 persons from the 1972 survey sample (excluding the small sample of college graduates) were chosen as the sample for the series of longitudinal surveys known as the National Sample of Scientists and Engineers. The 1978 National Survey of Natural and Social Scientists and Engineers was the third survey in this longitudinal series; it was preceded by surveys in 1976 and 1974.²

Questionnaires for the 1978 survey were mailed in February 1978. After all data collection activities, 81 percent of the sample (approximately 40,800 persons) completed their questionnaires. The 19 percent who did not complete their questionnaires included persons who refused to participate, the deceased, and persons who returned questionnaires with insufficient information to permit processing. For an analysis of response, see appendix E.

The estimates derived for this survey were prepared by using a ratio estimation procedure and an adjustment for nonresponse in 1978. For each sample case for which a completed questionnaire was obtained, the information from the 1978 survey was matched with the 1972 survey data and the 1970 census data for the same person. Weights applied to samples cases in the 1972 survey were then used to weight the resultant matched data file. The weighting procedure for the 1972 survey involved first the preparation of a preliminary estimate by weighting the results for each sample person by the reciprocal of the probability of selection. As a second

step, these weights were adjusted by applying a factor for certain age-sex-race cells within each occupation category. Within each of the cells, the factor was computed as the ratio of the 1970 census count to the preliminary estimate. The final 1972 weight was this factor multiplied by the inverse of the probability of selection for each person. To the extent that the data being tabulated and the estimated count of persons in the cells are positively correlated, the ratio estimate procedure will improve the reliability of the estimate. A discussion of the reliability of the estimates, including a description of the standard errors of totals and percentages, is presented in appendix B.

A nonresponse adjustment was done in 1978 to reduce the bias in the survey estimates due to the high nonresponse rate in 1978. This adjustment was done separately for in-scope³ and out-of-scope⁴ persons, and included an adjustment for the mortality in the longitudinal sample from 1972 to 1978. The first step in the nonresponse adjustment was to adjust the nonrespondents for mortality from 1972 to 1978 by means of mortality tables for age-race-sex groups. The second step was to determine the estimated proportion of nonrespondents that were in-scope and out-of-scope. To estimate these proportions, an intensive follow-up was conducted to obtain interviews for a subsample of the 1978 nonrespondents. This follow-up showed that approximately 80 percent of the nonrespondents were in-scope and the remaining 20 percent were out-of-scope. The final step was to determine a nonresponse adjustment factor for different age-race-sex cells. Within each of the cells, the factor was computed as the ratio of the weighted count, using the 1972 weights, of the estimated total (i.e., respondent and nonrespondent) in-scope or out-of-scope persons, divided by the weighted count of the respondent in-scope or out-of-scope persons.

The final weight for the 1978 survey was the product of the 1972 weight and the appropriate 1978 nonresponse adjustment factor.

The definitions for many of the characteristics shown in this report are self-explanatory or can best be understood by referring to the appropriate 1978 questionnaire items or reference lists (appendixes C and D). An explanation of the other subjects is provided below.

Age in 1978. The reference period for age in 1978 was April 1978. The age classification is based on the age of the person at his or her last birthday. The median age is that age that

¹ For a description of the 1972 survey and related matters, see U.S. Bureau of the Census, *Characteristics of Persons in Engineering and Scientific Occupations: 1972*, Technical Paper No. 33, U.S. Government Printing Office, Washington, D.C., 1974.

² Results from the 1974 survey were published in U.S. Bureau of the Census, *Current Population Reports, Series P-23, No. 53, Selected Characteristics of Persons in Fields of Science or Engineering: 1974*, U.S. Government Printing Office, Washington, D.C., 1975; results from the 1978 survey were published in U.S. Bureau of the Census, *Current Population Reports, Series P-23, No. 76, Selected Characteristics of Persons in Fields of Science or Engineering: 1978*, U.S. Government Printing Office, Washington, D.C., 1978.

³ "In-scope" means "in a field of science or engineering."

⁴ "Out-of-scope" refers to the category "not in a field of science or engineering."

divides the distribution into two equal parts, one-half being older than the median age and one-half younger. Median ages were divided from an estimation process that distributed the subject populations into 5-year age groups.

Race. The data on race are based on responses in the 1970 Census of Population. The "other races" category includes all races not included in the specific categories listed.

Divisions of the United States. The divisions of the United States comprise the following States:

New England: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont

Middle Atlantic: New York, New Jersey, Pennsylvania

East North Central: Illinois, Indiana, Michigan, Ohio, Wisconsin.

West North Central: Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota.

South Atlantic: Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia.

East South Central: Alabama, Kentucky, Mississippi, Tennessee.

West South Central: Arkansas, Louisiana, Oklahoma, Texas.

Mountain: Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming.

Pacific: Alaska, California, Hawaii, Oregon, Washington.

Outlying areas of the United States include Puerto Rico, Guam, Virgin Islands, American Samoa, and Canal Zone.

Fields of science and engineering. Science or engineering (S/E) fields are categories established by the survey sponsor, the National Science Foundation, to identify persons who could be classified as engineers or scientists under most definitions. In general, to be classified into one of the fields, a person had to have at least two of the following three characteristics: (1) employment in the field, (2) attainment of a specified educational level in an academic discipline related to the field, or (3) self-identification, based upon total education and experience, as being in the field. More detailed information on the criteria for membership in a scientific and technical field is given in U.S. Bureau of the Census, Current Population Reports, Series P-23, No. 76, *Selected Characteristics of Persons in Fields of Science or Engineering: 1976*, U.S. Government Printing Office, Washington, D.C., 1978.

Highest degree held. Highest degree held in 1978 refers to the highest academic degree awarded to the respondent in 1978

or earlier. Data on highest degree held were derived as follows: The level and the year of award of the highest degree received by the respondent between January 1972 and 1978 surveys (this degree will be referred to as degree "A") were compared with the level and year of award, determined from the 1976, 1974, and 1972 surveys, of the previously-designated highest degree held by the respondent (this is referred to as degree "B"). If degree A was at the same level or at a higher level than degree B, and if its date of award was later than that of degree B, degree A was designated as the highest degree held in 1978; otherwise, degree B was designated as the highest degree held in 1978.

The "other degree" category includes persons whose highest academic degree was one of the following: RN, LLB, MD, and academic degrees other than those shown in the tables.

Major field of study for highest degree held. The data on major field of study refer to the major subject associated with the highest degree held in 1978 determined by the method described above. For persons who received their highest degree held in 1978 after January 1972, the data are derived from question 3 of the 1978 questionnaire (see appendix C), or question 1, part b of the 1976 questionnaire or from question 2, part b5 of the 1974 questionnaire. For persons who received their highest degree in 1971 or earlier, the data on major subject are based on the 1972 survey.

Employment status. Employed persons are those who reported that they were employed, either full time or part time, on vacation, or otherwise temporarily absent from a job for health or personal reasons during the reference week (February 12-18, 1978). The unemployed are persons who marked the "unemployed and seeking work" category (box 3) of item 5a of the 1978 questionnaire (see appendix C), or who indicated in item 7 that they were on layoff from a job. All other persons were classified as "not in the labor force."

Unemployment in 1977. The data on unemployment in 1977 relate to the occurrence of unemployment during the entire calendar year rather than just during a reference week. Medians are based on the intervals shown in the tables.

Primary work activity in 1978. The data on primary work activity in 1978 were derived, in general, from answers to question 11b of the 1978 questionnaire. In certain instances of nonresponse to question 11b, however, the data were derived from an imputation procedure that used responses to question 11a.

Type of employer. The data on type of employer in 1978 are based entirely on responses to question 12 of the 1978 questionnaire.

Basic annual salary rate. The statistics on salary refer to the basic annual salary associated with the job held in February 1978. The figures relate to salary before deductions for income tax, Social Security, retirement, etc., but do not include bonuses, overtime pay, or earnings from secondary

jobs. For employees of educational institutions whose salary was for 9 or 10 months, the salary rate was adjusted to a 12-month basis. Median salaries were derived by an estimation process that distributed the subject population into \$1,000 intervals.

Job and occupational mobility in 1976 and 1978. The data on mobility between 1976 and 1978 were derived from answers on both the 1976 and 1978 questionnaires. Persons were classified as with a "job change between 1976 and 1978" if they were employed in both 1976 and 1978 and reported in the 1978 survey that their current job began in 1976 or later. Persons were classified as "same job in 1976 and 1978" if the beginning date of their most recent job was in 1975 or earlier, and as "not reported" if they did not report the beginning date of the most recent job. For persons with a job change, the detailed occupation of the 1978 job was compared with that of the 1976 job, and persons were

classified as with the same or a different occupation or as "occupation change not reported."

Job and occupational mobility in 1974 and 1978 and in 1972 and 1978. The data on mobility between 1974 and 1978 and between 1972 and 1978 were derived from answers on the 1974 and 1978 questionnaires and 1972 and 1978 questionnaires, respectively. The procedure was analogous to that described for the data on job and occupational mobility in 1976 and 1978.

Years of professional experience. Median years of professional experience are based on 1-year intervals.

Symbols. A dash (-) represents zero, and "X" means "not applicable." The symbol "Z" means less than 0.05 percent. The symbol "*" means based on fewer than 20 sample cases. For the characteristic "Unemployment in Calendar Year 1977," the symbol "27+" means that the median fell in the category "27 weeks or more."

Appendix B. Reliability of the Estimates and Standard Errors of Totals and Percentages

There are two types of possible errors associated with estimates based on data from a sample survey: sampling and nonsampling. The following is a description of the sampling and nonsampling errors associated with the 1978 Survey of Scientists and Engineers.

SAMPLING ERRORS

The particular sample used for this survey is one of a large number of possible samples of the same size that could have been selected using the same sample design. Even if the same schedules and instructions were used, estimates from each of the different samples would differ from each other. The deviation of a sample estimate from the average of all possible samples is defined as the sampling error. The standard error of a survey estimate attempts to provide a measure of this variation among the estimates from the possible samples, and thus, is a measure of the precision with which an estimate from the sample approximates the average result of all possible samples.

As calculated for this survey, the standard error also partially measures the variation in the estimates because of response errors (nonsampling errors), but it does not measure, as such, any systematic biases in the data. Therefore, the accuracy of the estimates depends on both the sampling and nonsampling errors, measured by the standard error, and biases and some additional nonsampling errors not measured by the standard error.

The figures presented in the tables B-1 to B-6 below are approximations to the standard errors of the various estimates for this survey. A number of approximations and generalizations have been used so that the standard errors would be applicable to a wide variety of characteristics and still be prepared at a moderate cost. Thus, the standard errors in the following tables provide an indication of the order of magnitude, rather than precise measurements of the standard errors.

Standard errors on totals. Table B-1 presents the standard errors applicable to estimated totals for characteristics of social scientists and psychologists. Linear interpolation can be used to determine standard errors for estimated totals not specifically shown in table B-1. In addition, standard errors for estimated numbers not shown in these tables may

also be computed directly from the following standard error formula:

$$\text{standard error of } x = \sqrt{ax^2 + bx}$$

The "a" and "b" parameters for each social scientist group and psychologists are:

Field	"a" parameter	"b" parameter
Social scientists, total000111	57.4
Economists	-.000753	41.0
Sociologists and anthropologists	-.00367	77.5
Other social scientists	-.000327	71.8
Psychologists	-.000391	35.0

For example, there are an estimated 3,519 social scientists, total, who were retired in 1978. The above table shows that a = .000111 and b = 57.4 for social scientists, total. Thus, the estimated standard error of 3,519 is

$$\sqrt{(.000111) (3519)^2 + (57.4) (3519)} = 451$$

Standard errors on percentages. The reliability of an estimated percentage, computed by using sample data for both the numerator and the denominator, depends upon both the size of the percentage and the size of the total upon which the percentage is based. Estimated percentages are relatively more reliable than the corresponding estimates of the numerators of the percentage, particularly if the percentages are 50 percent or more.

Tables B-2 through B-6 present the standard errors of estimated percentages for social scientists and psychologists. Two-way linear interpolation can be used to determine standard errors for estimated percentages not specifically shown in tables B-2 through B-6. In addition, the standard errors for percentages not shown in these tables can also be computed directly from the following formula:¹

standard error of the percentage p on a base of y =

$$\sqrt{(p) (100-p) \frac{b}{y}}$$

¹ The tables for the standard errors of percentages for most scientific and engineering fields (SEF's) were combined. The tables of standard errors given for such collapsed groups are always conservative, i.e., the table for the SEF with the largest standard errors was chosen to represent all the SEF's in the group. Because of this, the standard errors calculated directly from the formula may differ slightly from those found in the tables.

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Table B-1. Standard Errors of Totals

Size of estimate	Psychologists	Social scientists, total	Economists	Sociologists and anthropologists	Other social scientists
100.....	60	80	60	90	80
200.....	80	110	90	120	120
500.....	130	170	140	190	190
700.....	160	200	170	230	220
1,000.....	190	240	200	270	270
2,500.....	290	380	310	410	420
5,000.....	410	540	430	540	590
10,000.....	560	770	580	640	830
25,000.....	790	1,230	750	(*)	1,260
50,000.....	890	1,770	-	-	-
75,000.....	-	2,220	-	-	-

- Represents zero.

*For an estimate of 12,000, the estimated standard error is 630.

For example, an estimated 7.3 percent of the 38,170 psychologists worked part time in 1978. The above table shows that b = 35.0 for psychologists. Thus, the standard error for the 7.3 percent on a base of 38,170 is

$$\frac{\sqrt{(7.3)(100-7.3)(35.0)}}{38,170} = .79 \text{ percent}$$

Standard error intervals. The sample estimate and its estimated standard error enable one to construct interval estimates that include the average result of all possible samples with a known probability. For example, if all possible samples were selected, each of these surveyed under identical conditions and an estimate and its estimated standard error were calculated from each sample, then:

1. Approximately 68 percent of the intervals from one standard error below the estimate to one standard error above the estimate would include the average result of all possible samples;
2. Approximately 90 percent of the intervals from 1.6 standard errors below the estimate to 1.6 standard errors above the estimate would include the average result of all possible samples:

3. Approximately 95 percent of the intervals from two standard errors below the estimate to two standard errors above the estimate would include the average result of all possible samples.

The average result of all possible samples either is or is not contained in any particular computed interval. However, for a particular sample one can say with specified confidence that the average result of all possible samples is included within the constructed interval.

For example, of the 50,100 social scientists, total, in 1978, 51.1 percent have a doctorate degree as the highest degree held in 1978. The standard error of this percent as computed from table B-2 is 1.7 percentage points. Based on these data, we may conclude that the percentage of social scientists, total with a doctorate degree as the highest degree held in 1978 lies between 47.7 percent and 54.5 percent with 95-percent confidence, i.e., within 2 standard errors.

Standard errors of differences between estimates. The figures in these tables are not directly applicable to standard errors of differences between two sample estimates. The standard error of the estimated difference between two figures may be approximated by the square root of the sum of the

Table B-2. Standard Errors of Percentages for Social Scientists, Total

(68 chances out of 100)

Base of percentage	1 or 99	2 or 98	5 or 95	10 or 90	15 or 85	25 or 75	50
100.....	7.5	10.6	16.5	22.7	27.1	32.8	37.9
200.....	5.3	7.5	11.7	16.1	19.1	23.2	26.8
500.....	3.4	4.7	7.4	10.2	12.1	14.7	16.9
700.....	2.9	4.0	6.2	8.6	10.2	12.4	14.3
1,000.....	2.4	3.4	5.2	7.2	8.6	10.4	12.0
2,500.....	1.5	2.1	3.3	4.5	5.4	6.6	7.6
5,000.....	1.1	1.5	2.3	3.2	3.8	4.6	5.4
10,000.....	0.8	1.1	1.7	2.3	2.7	3.3	3.8
25,000.....	0.5	0.7	1.0	1.4	1.7	2.1	2.4
50,000.....	0.3	0.5	0.7	1.0	1.2	1.5	1.7
75,000.....	0.3	0.4	0.6	0.8	1.0	1.2	1.4
100,000.....	0.2	0.3	0.5	0.7	0.9	1.0	1.2

squares of the standard error of each estimate. This approximation will yield an exact result when the two characteristics are uncorrelated. If the two characteristics are positively (negatively) correlated, the approximation will overestimate (underestimate) the standard error of the difference. For a difference between two sample estimates, one of which represents a subclass of the other, the table can be used with the difference considered as the sample estimate.

For example, of the 50,100 social scientists, total, in 1978, 30.6 percent have a master's degree as the highest degree held in 1978. The standard error of this percent as computed from table B-2 is 1.5 percentage points. The standard error of the difference between the percentage of those with doctorates and the percentage of those with master's degrees (i.e., 51.1-30.6 = 20.5 percent) is then approximately

$$\sqrt{(1.7)^2 + (1.5)^2} = 2.3 \text{ percentage points}$$

Based on these data, we may conclude with 95 percent confidence that the average estimate of the difference of the percentages derived from all possible sample lies within the interval 15.9 percentage points to 25.1 percentage points.

Standard errors of medians. The figures in these tables are not directly applicable to standard errors of estimated medians. The sampling variability of an estimated median depends upon the size of the base as well as on the distribution from which the median is determined. An approximate method for measuring the reliability of a median is to determine an interval about the estimated median, such that there is a stated degree of confidence that the median based on all possible samples lies with the interval. The following procedure may be used to estimate confidence limits of a median based on sample data:

1. Determine the standard error of a 50 percent characteristic from the appropriate standard error table (tables B-2 through B-6) using the appropriate base;
2. Add this standard error to 50 percent to obtain an upper boundary percentage and subtract this standard error from 50 percent to obtain a lower boundary percentage;
3. Using the cumulative distribution from which the median is derived, read off the numbers corresponding to the boundary percentages. The interval between these two

numbers (i.e., the confidence limits) will be the 68-percent confidence interval. A 95-percent confidence interval may be determined by finding the values corresponding to 50 percent plus or minus twice the standard error in step (1).

For example, the data for 1978 indicate that the estimate of the median age for economists is 46.0 years. The distribution of economists by age is shown in the table below:

Age (years)	Percentage	Cumulative distribution
Under 30	0.2	0.2
30 to 34	15.8	16.0
35 to 39	16.6	32.6
40 to 44	15.1	47.7
45 to 49	13.3	61.0
50 to 54	10.2	71.2
55 to 59	10.5	81.7
60 to 64	7.2	88.9
65 to 69	5.1	94.0
70 and over	6.0	100.0

From standard error table B-3 the standard error of a 50 percent characteristic with a base of 19,312 is 2.5 percentage points. From the table of cumulative age distribution, the percentage point that corresponds to 45 years is 47.7 percent and to 50 years is 61.0 percent. The lower confidence limit corresponding to 47.5 percent (50 percent minus 2.5 percent) is found by linear interpolation between 40 years and 45 years to be 44.9 years i.e.,

$$40 + \left[(45-40) \left(\frac{47.5 - 32.6}{47.7 - 32.6} \right) \right] = 44.9$$

Similarly, the upper confidence limit corresponding to 52.5 percent (50 percent plus 2.5 percent) is found to be 46.8 years:

$$45 + \left[(50-45) \left(\frac{52.5 - 47.7}{61.0 - 47.7} \right) \right] = 46.8$$

Consequently the 68-percent confidence interval, as shown by the data, is from 44.9 years to 46.8 years. Likewise, we could conclude that the 95-percent confidence interval is from 44.0 years (the distribution point corresponding to 45.0 percent) to 47.7 years (corresponding to 55.0 percent).

Table B-3. Standard Errors of Percentages for Economists

(68 chances out of 100)

Base of percentage	1 or 99	2 or 98	5 or 95	10 or 90	15 or 85	25 or 75	50
100	6.4	9.1	14.1	19.4	23.1	28.0	32.4
200	4.6	6.4	10.0	13.7	16.3	19.8	22.9
500	2.9	4.1	6.3	8.7	10.3	12.5	14.5
700	2.4	3.4	5.3	7.3	8.7	10.6	12.2
1,000	2.0	2.9	4.5	6.1	7.3	8.9	10.2
2,500	1.3	1.8	2.8	3.9	4.6	5.6	6.5
5,000	0.9	1.3	2.0	2.7	3.3	4.0	4.6
10,000	0.6	0.9	1.4	1.9	2.3	2.8	3.2
25,000	0.4	0.6	0.9	1.2	1.5	1.8	2.0

NONSAMPLING ERRORS

In general, nonsampling errors can be attributed to many sources: inability to obtain information about all cases, definitional difficulties, differences in the interpretation of questions, inability or unwillingness to provide correct information on the part of the respondents, mistakes in recording or coding the data, and other errors of collection, response, processing, coverage, and estimation for missing data. As the above list indicates, nonsampling errors are not unique to sample surveys, since they can, and do, occur in complete censuses as well.

The primary source of nonsampling error in the 1978 national sample survey is probably the high nonresponse rate. An adjustment in the estimation procedure for the

23 percent noninterview rate in the 1972 survey and the additional 19 percent nonresponse rate in 1978 was made, but there still remains some unknown bias in the estimates because of differences in the characteristics of those who were interviewed in 1978 and those who were not.

It should also be pointed out that estimates for this survey do not represent those who have entered the labor force in scientific and engineering fields since 1970. In particular, this survey does not include the large numbers of graduates produced since 1970. This causes significant biases for such items as the relative distributions of sex, age, and race and the unemployment figures if the results are assumed to be indicative of the current scientific and engineering fields including new entrants since 1970.

Table B-4. Standard Errors of Percentages for Sociologists and Anthropologists

(68 chances out of 100)

Base of percentage	1 or 99	2 or 98	5 or 95	10 or 90	15 or 85	25 or 75	50
100.....	8.8	12.3	19.2	26.4	31.4	38.1	44.0
200.....	6.2	8.7	13.6	18.7	22.2	27.0	31.1
500.....	3.9	5.5	8.6	11.8	14.1	17.0	19.7
700.....	3.3	4.7	7.3	10.0	11.9	14.4	16.6
1,000.....	2.8	3.9	6.1	8.4	9.9	12.1	13.9
2,500.....	1.8	2.5	3.8	5.3	6.3	7.6	8.8
5,000.....	1.2	1.7	2.7	3.7	4.4	5.4	6.2
10,000.....	0.9	1.2	1.9	2.6	3.1	3.8	4.4
25,000.....	0.6	0.8	1.2	1.7	2.0	2.4	2.8

Table B-5. Standard Errors of Percentages for Other Social Scientists

(68 chances out of 100)

Base of percentage	1 or 99	2 or 98	5 or 95	10 or 90	15 or 85	25 or 75	50
100.....	8.4	11.9	18.5	25.4	30.3	36.7	42.4
200.....	6.0	8.4	13.1	18.0	21.4	25.9	30.0
500.....	3.8	5.3	8.3	11.4	13.5	16.4	18.9
700.....	3.2	4.5	7.0	9.6	11.4	13.9	16.0
1,000.....	2.7	3.8	5.8	8.0	9.6	11.6	13.4
2,500.....	1.7	2.4	3.7	5.1	6.1	7.3	8.5
5,000.....	1.2	1.7	2.6	3.6	4.3	5.2	6.0
10,000.....	0.8	1.2	1.8	2.5	3.0	3.7	4.2
25,000.....	0.5	0.8	1.2	1.6	1.9	2.3	2.7

Table B-6. Standard Errors of Percentages for Psychologists

(68 chances out of 100)

Base of percentage	1 or 99	2 or 98	5 or 95	10 or 90	15 or 85	25 or 75	50
100.....	5.9	8.3	12.9	17.7	21.1	25.6	29.6
200.....	4.2	5.9	9.1	12.5	14.9	18.1	20.9
500.....	2.6	3.7	5.8	7.9	9.4	11.4	13.2
700.....	2.2	3.1	4.9	6.7	8.0	9.7	11.2
1,000.....	1.9	2.6	4.1	5.6	6.7	8.1	9.3
2,500.....	1.2	1.7	2.6	3.5	4.2	5.1	5.9
5,000.....	0.8	1.2	1.8	2.5	3.0	3.6	4.2
10,000.....	0.6	0.8	1.3	1.8	2.1	2.6	3.0
25,000.....	0.4	0.5	0.8	1.1	1.3	1.6	1.9
50,000.....	0.3	0.4	0.6	0.8	0.9	1.1	1.3

Appendix C. Questionnaire and Reference Lists

O.M.B. No. 99-577003; Approval Expires December 31, 1978

FORM PMS-26D <small>(9-26-77)</small>	U.S. DEPARTMENT OF COMMERCE BUREAU OF THE CENSUS 1978 NATIONAL SURVEY OF NATURAL AND SOCIAL SCIENTISTS AND ENGINEERS	NOTICE - Your report to the Census Bureau is confidential. It may be seen only by sworn Census employees and may be used only for statistical purposes.		
		<p><i>Please read</i> instructions carefully before answering questions.</p> <p>Answer as accurately as you can by printing your reply clearly or by entering an "X" in the box next to the appropriate reply.</p> <p>When the instructions for a question direct you to enter a code and description from a list, please refer to the reference list attached to this questionnaire.</p>		
		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; padding: 5px;"> PLEASE COMPLETE AND RETURN TO </td> <td style="width: 40%; padding: 5px;"> Bureau of the Census 1201 East Tenth Street Jeffersonville, Indiana 47132 </td> </tr> </table>	PLEASE COMPLETE AND RETURN TO	Bureau of the Census 1201 East Tenth Street Jeffersonville, Indiana 47132
PLEASE COMPLETE AND RETURN TO	Bureau of the Census 1201 East Tenth Street Jeffersonville, Indiana 47132			
<p>A. Do you currently live in the State (or foreign country) printed in the above mailing label?</p> <p>1 <input type="checkbox"/> Yes, same State (or foreign country)</p> <p>2 <input type="checkbox"/> No, different State (or foreign country) - Please enter your current State (or foreign country) of residence _____ 3</p>				
<p style="text-align: center;">FROM THE DIRECTOR BUREAU OF THE CENSUS</p> <p>This is the final questionnaire for the series of surveys known as the National Sample of Scientists and Engineers. The National Science Foundation, the project sponsor, and the Bureau of the Census wish to thank you for your invaluable contribution to this program. Each of the biennial surveys has given policymakers and planners an increasingly clearer view of the dynamics of the educational system and the job market for one of the Nation's central resources—highly trained persons. The goal of this final survey is to complete the picture for the decade of the 1970's.</p> <p>Thus, we are asking you to provide one final report on your employment and related topics. The questionnaire is much shorter than previous ones. Please note that the sample includes many kinds of highly trained persons in addition to scientists and engineers. For the survey to be successful and yield truly representative information, it is important that each person fill out and return the questionnaire.</p> <p>Please complete the questions which follow on pages 2 through 4 and return your questionnaire in the enclosed preaddressed envelope. For some questions you are instructed to enter a code and description from Reference List A, B, or C. These lists are attached to the questionnaire.</p> <p>This information is being collected under the authority of the National Science Foundation Act of 1950, as amended. The information you provide is confidential and may be seen only by sworn employees of the Bureau of the Census. The information cannot be used for anything but statistical purposes and cannot be given to any other Government agency, private concern, or individual. The data will be released only in the form of statistical summaries from which it will be impossible to identify information about any particular person. Your response is entirely voluntary, and your failure to provide some or all of the requested information will in no way adversely affect you.</p> <p>Thank you for your cooperation.</p> <p>Sincerely,</p> <p style="text-align: center;"> MANUEL D. PLOTKIN</p> <p>Enclosure</p>				

<p>1. Since January 1972 have you attended any college, university, or other post high school institution?</p>	<p>1 <input type="checkbox"/> Yes - Continue with question 2a 2 <input type="checkbox"/> No - Skip to question 4</p>																								
<p>2a. What is the highest degree you have RECEIVED since January 1972? Mark only one box</p>	<p>1 <input type="checkbox"/> Associate 2 <input type="checkbox"/> Registered Nurse (R.N.) 3 <input type="checkbox"/> Bachelor's 4 <input type="checkbox"/> Master's 5 <input type="checkbox"/> First Professional Non-Medical (J.D., LL.B., Th.B.) 6 <input type="checkbox"/> First Professional Medical (D.D.M., D.D.S., D.O., D.V.M., M.D.) 7 <input type="checkbox"/> Doctorate 8 <input type="checkbox"/> Other - Specify _____ 9 <input type="checkbox"/> None - Skip to question 4</p>																								
<p>b. When was this degree awarded? If you received more than one degree at the same level (e.g., two master's degrees), enter the year of award of the most recent one.</p>	<p>19 ____</p>																								
<p>3. What was the major field of study of the degree you described in question 2? Enter code and description from Reference List A.</p>	<table border="1"> <thead> <tr> <th>Code</th> <th>Description from Reference List A</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/></td> <td>_____</td> </tr> <tr> <td><input type="checkbox"/></td> <td>_____</td> </tr> </tbody> </table>	Code	Description from Reference List A	<input type="checkbox"/>	_____	<input type="checkbox"/>	_____																		
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<p>4. Aside from formal education, which of the following types of training did you receive in 1976 or 1977? Mark the appropriate year for each type of training you have received.</p>	<table border="1"> <thead> <tr> <th></th> <th>a. 1976</th> <th>b. 1977</th> </tr> </thead> <tbody> <tr> <td>(1) On-the-job training</td> <td>1 <input type="checkbox"/></td> <td>1 <input type="checkbox"/></td> </tr> <tr> <td>(2) Military training applicable to civilian occupations</td> <td>2 <input type="checkbox"/></td> <td>2 <input type="checkbox"/></td> </tr> <tr> <td>(3) Extension or correspondence courses</td> <td>3 <input type="checkbox"/></td> <td>3 <input type="checkbox"/></td> </tr> <tr> <td>(4) Courses at employer's training facility</td> <td>4 <input type="checkbox"/></td> <td>4 <input type="checkbox"/></td> </tr> <tr> <td>(5) Courses at adult education center</td> <td>5 <input type="checkbox"/></td> <td>5 <input type="checkbox"/></td> </tr> <tr> <td>(6) Other training</td> <td>6 <input type="checkbox"/></td> <td>6 <input type="checkbox"/></td> </tr> <tr> <td>(7) None</td> <td>7 <input type="checkbox"/></td> <td>7 <input type="checkbox"/></td> </tr> </tbody> </table>		a. 1976	b. 1977	(1) On-the-job training	1 <input type="checkbox"/>	1 <input type="checkbox"/>	(2) Military training applicable to civilian occupations	2 <input type="checkbox"/>	2 <input type="checkbox"/>	(3) Extension or correspondence courses	3 <input type="checkbox"/>	3 <input type="checkbox"/>	(4) Courses at employer's training facility	4 <input type="checkbox"/>	4 <input type="checkbox"/>	(5) Courses at adult education center	5 <input type="checkbox"/>	5 <input type="checkbox"/>	(6) Other training	6 <input type="checkbox"/>	6 <input type="checkbox"/>	(7) None	7 <input type="checkbox"/>	7 <input type="checkbox"/>
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(7) None	7 <input type="checkbox"/>	7 <input type="checkbox"/>																							
<p>Part II - Employment Status</p>																									
<p>5a. What was your employment status during the week of February 12-18, 1978?</p>	<p>1 <input type="checkbox"/> Employed full time (including self-employed full time) - Skip to 6a 2 <input type="checkbox"/> Employed part time (including self-employed part time) - Answer 6b 3 <input type="checkbox"/> Unemployed and seeking work - Go to Part III 4 <input type="checkbox"/> Not employed and not seeking work - Skip to 7</p>																								
<p>b. If you worked part time, were you seeking full-time work?</p>	<p>1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No</p>																								
<p>6a. Were you working in a position related to science or engineering during the week of February 12-18, 1978?</p>	<p>1 <input type="checkbox"/> Yes - Go to Part III 2 <input type="checkbox"/> No - Answer 6b</p>																								
<p>b. What was the most important reason for taking this position? Mark only one box</p>	<p>1 <input type="checkbox"/> Preferred nonscience or nonengineering position 2 <input type="checkbox"/> Promoted out of science or engineering position 3 <input type="checkbox"/> Pay was better in nonscience or nonengineering position 4 <input type="checkbox"/> Locational preference 5 <input type="checkbox"/> Science or engineering position not available 6 <input type="checkbox"/> Other - Specify _____ (Go to Part III)</p>																								
<p>7. If you were not employed and not seeking work during the week of February 12-18, 1978, what was your most important reason for not seeking work? Mark only one box</p>	<p>1 <input type="checkbox"/> On vacation or otherwise temporarily absent from a job for health or personal reasons 2 <input type="checkbox"/> On layoff from a job 3 <input type="checkbox"/> Retired 4 <input type="checkbox"/> Student 5 <input type="checkbox"/> Tending to family responsibilities 6 <input type="checkbox"/> Could not find work or believed no jobs available in my particular field 7 <input type="checkbox"/> Other - Specify _____ (Go to Part III)</p>																								

PART III - JOB ACTIVITIES	
INSTRUCTIONS	
<p>a. Complete questions 8-15 for the job held during the week of February 12-18, 1978, or, if you did not hold a job during that week, complete these questions for your most recent job prior to that week.</p> <p>b. If you held more than one job, please report only the job at which you worked the greatest number of hours.</p>	
<p>8. Where did you work? <i>Write in city and State or foreign country of company, business, agency, or other employer.</i></p>	<p style="text-align: center;">Job held during the week of February 12-18, 1978, or most recent prior job.</p> <p>City _____</p> <p><input type="checkbox"/> <input type="checkbox"/> State or foreign country _____</p>
<p>9. What kind of business was this? <i>Enter code and description from Reference List B.</i></p>	<p>Code <input type="checkbox"/> <input type="checkbox"/> Description from Reference List B _____</p>
<p>10. What was your occupation? <i>Enter code and description from Reference List C.</i></p>	<p>Code <input type="checkbox"/> <input type="checkbox"/> Description from Reference List C _____</p>
<p>11a. What percent of working time did you devote to each of the following activities? Entries should sum to 100%.</p> <p>PLEASE NOTE Basic research is study directed toward gaining scientific knowledge primarily for its own sake. Applied research is study directed toward gaining scientific knowledge in an effort to meet a recognized need. Development is direction of the knowledge gained from research toward production of useful materials, devices, systems, and methods.</p>	<p>01 _____ % Management or administration of research and development</p> <p>02 _____ % Management or administration of other than research and development</p> <p>03 _____ % Teaching and training - preparing and teaching courses, guiding and counseling students or trainees</p> <p>04 _____ % Basic research</p> <p>05 _____ % Applied research</p> <p>06 _____ % Development - product, process, and technical development</p> <p>07 _____ % Report and technical writing, editing, information retrieval</p> <p>08 _____ % Clinical diagnosis</p> <p>09 _____ % Design of equipment, processes, models</p> <p>10 _____ % Quality control, testing, evaluation, or inspection</p> <p>11 _____ % Operations - production, maintenance, construction, installation</p> <p>12 _____ % Distribution - sales, traffic, purchasing, customer and public relations</p> <p>13 _____ % Statistical work - survey work, forecasting, statistical analysis</p> <p>14 _____ % Consulting</p> <p>15 _____ % Computer applications</p> <p>16 _____ % Other activities - <i>Specify</i> _____</p> <p>TOTAL=100%</p>
<p>b. Among all these activities, which was your primary and which was your major secondary work activity? <i>Fill in the appropriate code numbers (01-16) from question 11a.</i></p>	<p>Code (01-16 from Question 11a).</p> <p><input type="checkbox"/> <input type="checkbox"/> Primary work activity</p> <p><input type="checkbox"/> <input type="checkbox"/> Secondary work activity</p>
<p>12. Which category best describes the type of organization of your principal employment or postdoctoral appointment? <i>Mark only one box</i></p>	<p>01 <input type="checkbox"/> Business or industry, including self-employed</p> <p>02 <input type="checkbox"/> Junior college, 2-year college, technical institute</p> <p>03 <input type="checkbox"/> Medical school</p> <p>04 <input type="checkbox"/> 4-year college or university, other than medical school</p> <p>05 <input type="checkbox"/> Elementary or secondary school system</p> <p>06 <input type="checkbox"/> Hospital or clinic</p> <p>07 <input type="checkbox"/> Non-profit organization, other than hospital, clinic, or educational institution</p> <p>08 <input type="checkbox"/> U.S. military service, active duty, or Commissioned Corps, e.g., USPHS, NOAA</p> <p>09 <input type="checkbox"/> U.S. Government, civilian employee</p> <p>10 <input type="checkbox"/> State government</p> <p>11 <input type="checkbox"/> Local or other government - <i>Specify</i> _____</p> <p>12 <input type="checkbox"/> International agency</p> <p>13 <input type="checkbox"/> Other - <i>Specify</i> _____</p>

PART III - JOB ACTIVITIES - Continued							
13. What was the basic salary associated with this position? (If not working during February 12-18, report ending salary of most recent prior job.) If you were on a postdoctoral appointment, include stipend plus allowances. (Basic salary refers to salary before deductions for income tax, social security, retirement, etc. but does not include bonuses, overtime, summer teaching, or other payment for secondary jobs.)	Job held during week of February 12-18, 1978, or most recent prior job						
a. \$ _____ .00 b. <input type="checkbox"/> Per year <input type="checkbox"/> Per month <input type="checkbox"/> Per week c. If academically employed, mark whether salary is for - <input type="checkbox"/> 9-10 months <input type="checkbox"/> 11-12 months							
14. Between what dates did you hold this position? <i>Enter month and year</i> Consider a change in positions to have occurred if there were significant changes in your duties, level of responsibility, or occupation, even if you continued to work for the same employer.	a. Beginning month and year: _____	b. Ending month and year: _____ OR <input type="checkbox"/> Present					
15a. Was ANY of your work supported or sponsored by U.S. Government funds?	1 <input type="checkbox"/> Yes - Continue with 15b 2 <input type="checkbox"/> No 3 <input type="checkbox"/> Don't know } Skip to 16a						
b. Which of the following agencies or departments were supporting the work? <i>Mark as many as apply</i>	<table style="width:100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> 01 <input type="checkbox"/> AID (Agency for International Development) 02 <input type="checkbox"/> Department of Agriculture 03 <input type="checkbox"/> Department of Commerce 04 <input type="checkbox"/> Department of Defense 05 <input type="checkbox"/> Department of Energy Department of Health, Education, and Welfare 06 <input type="checkbox"/> Alcohol and Drug Abuse Mental Health Administration 07 <input type="checkbox"/> NIH (National Institutes of Health) 08 <input type="checkbox"/> Office of Education 09 <input type="checkbox"/> Other HEW - Specify _____ </td> <td style="width: 50%; vertical-align: top;"> 11 <input type="checkbox"/> Department of the Interior 12 <input type="checkbox"/> Department of Justice 13 <input type="checkbox"/> Department of Labor 14 <input type="checkbox"/> Department of Transportation 15 <input type="checkbox"/> EPA (Environmental Protection Agency) 16 <input type="checkbox"/> NASA (National Aeronautics and Space Administration) 17 <input type="checkbox"/> NSF (National Science Foundation) 18 <input type="checkbox"/> Nuclear Regulatory Commission 19 <input type="checkbox"/> Other agency or department - Specify _____ </td> </tr> <tr> <td style="vertical-align: top;"> 10 <input type="checkbox"/> Department of Housing and Urban Development </td> <td style="vertical-align: top;"> 20 <input type="checkbox"/> Don't know source agency or department </td> </tr> </table>			01 <input type="checkbox"/> AID (Agency for International Development) 02 <input type="checkbox"/> Department of Agriculture 03 <input type="checkbox"/> Department of Commerce 04 <input type="checkbox"/> Department of Defense 05 <input type="checkbox"/> Department of Energy Department of Health, Education, and Welfare 06 <input type="checkbox"/> Alcohol and Drug Abuse Mental Health Administration 07 <input type="checkbox"/> NIH (National Institutes of Health) 08 <input type="checkbox"/> Office of Education 09 <input type="checkbox"/> Other HEW - Specify _____	11 <input type="checkbox"/> Department of the Interior 12 <input type="checkbox"/> Department of Justice 13 <input type="checkbox"/> Department of Labor 14 <input type="checkbox"/> Department of Transportation 15 <input type="checkbox"/> EPA (Environmental Protection Agency) 16 <input type="checkbox"/> NASA (National Aeronautics and Space Administration) 17 <input type="checkbox"/> NSF (National Science Foundation) 18 <input type="checkbox"/> Nuclear Regulatory Commission 19 <input type="checkbox"/> Other agency or department - Specify _____	10 <input type="checkbox"/> Department of Housing and Urban Development	20 <input type="checkbox"/> Don't know source agency or department
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10 <input type="checkbox"/> Department of Housing and Urban Development	20 <input type="checkbox"/> Don't know source agency or department						
PART IV - OTHER INFORMATION							
16a. At anytime during calendar year 1977 were you without a job AND actively seeking employment?	1 <input type="checkbox"/> Yes - Continue with 16b 2 <input type="checkbox"/> No - Skip to question 17						
b. For how many weeks were you seeking employment?	<table style="width:100%; border: none;"> <tr> <td style="width: 50%;"> 1 <input type="checkbox"/> 1 to 4 weeks 2 <input type="checkbox"/> 5 to 10 weeks 3 <input type="checkbox"/> 11 to 14 weeks </td> <td style="width: 50%;"> 4 <input type="checkbox"/> 15 to 26 weeks 5 <input type="checkbox"/> 27 weeks or more </td> </tr> </table>			1 <input type="checkbox"/> 1 to 4 weeks 2 <input type="checkbox"/> 5 to 10 weeks 3 <input type="checkbox"/> 11 to 14 weeks	4 <input type="checkbox"/> 15 to 26 weeks 5 <input type="checkbox"/> 27 weeks or more		
1 <input type="checkbox"/> 1 to 4 weeks 2 <input type="checkbox"/> 5 to 10 weeks 3 <input type="checkbox"/> 11 to 14 weeks	4 <input type="checkbox"/> 15 to 26 weeks 5 <input type="checkbox"/> 27 weeks or more						
17. How many years of professional experience, including teaching, have you had? <i>Enter number of years</i>	_____ Years						
18. Based on your total education and experience, what do you regard yourself as professionally? <i>Enter code and description from Reference List C.</i>	<table border="1" style="width: 100px; height: 20px; border-collapse: collapse;"> <tr> <td style="width: 20px;">Code</td> <td style="width: 80px;">Description from Reference List C</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> </tr> </table>	Code	Description from Reference List C				
Code	Description from Reference List C						
19. Listed at the right are selected topics of critical national interest. If you devote a significant proportion of your professional time to any of these problem areas, please mark the box for the one on which you spend the MOST time. <i>Mark only one box</i>	<table style="width:100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> 01 <input type="checkbox"/> Health 02 <input type="checkbox"/> Environment protection, pollution control Education: 03 <input type="checkbox"/> Teaching 04 <input type="checkbox"/> Other 05 <input type="checkbox"/> Space 06 <input type="checkbox"/> National defense 07 <input type="checkbox"/> Crime prevention and control </td> <td style="width: 50%; vertical-align: top;"> 08 <input type="checkbox"/> Food production and technology 09 <input type="checkbox"/> Energy and fuel 10 <input type="checkbox"/> Other mineral resources 11 <input type="checkbox"/> Community development and services 12 <input type="checkbox"/> Housing (planning, design, construction) 13 <input type="checkbox"/> Other - Specify _____ 14 <input type="checkbox"/> Does not apply </td> </tr> </table>			01 <input type="checkbox"/> Health 02 <input type="checkbox"/> Environment protection, pollution control Education: 03 <input type="checkbox"/> Teaching 04 <input type="checkbox"/> Other 05 <input type="checkbox"/> Space 06 <input type="checkbox"/> National defense 07 <input type="checkbox"/> Crime prevention and control	08 <input type="checkbox"/> Food production and technology 09 <input type="checkbox"/> Energy and fuel 10 <input type="checkbox"/> Other mineral resources 11 <input type="checkbox"/> Community development and services 12 <input type="checkbox"/> Housing (planning, design, construction) 13 <input type="checkbox"/> Other - Specify _____ 14 <input type="checkbox"/> Does not apply		
01 <input type="checkbox"/> Health 02 <input type="checkbox"/> Environment protection, pollution control Education: 03 <input type="checkbox"/> Teaching 04 <input type="checkbox"/> Other 05 <input type="checkbox"/> Space 06 <input type="checkbox"/> National defense 07 <input type="checkbox"/> Crime prevention and control	08 <input type="checkbox"/> Food production and technology 09 <input type="checkbox"/> Energy and fuel 10 <input type="checkbox"/> Other mineral resources 11 <input type="checkbox"/> Community development and services 12 <input type="checkbox"/> Housing (planning, design, construction) 13 <input type="checkbox"/> Other - Specify _____ 14 <input type="checkbox"/> Does not apply						
20a. Are you physically handicapped?	1 <input type="checkbox"/> Yes - Continue with 20b 2 <input type="checkbox"/> No - Skip to question 21						
b. What is the nature of your handicap(s)? <i>Mark as many as apply</i>	<table style="width:100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> 1 <input type="checkbox"/> Visual 2 <input type="checkbox"/> Auditory </td> <td style="width: 50%; vertical-align: top;"> 3 <input type="checkbox"/> Orthopedic 4 <input type="checkbox"/> Other - Specify _____ </td> </tr> </table>			1 <input type="checkbox"/> Visual 2 <input type="checkbox"/> Auditory	3 <input type="checkbox"/> Orthopedic 4 <input type="checkbox"/> Other - Specify _____		
1 <input type="checkbox"/> Visual 2 <input type="checkbox"/> Auditory	3 <input type="checkbox"/> Orthopedic 4 <input type="checkbox"/> Other - Specify _____						
21. Is your ethnic heritage Hispanic? (Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture)	1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No						
22. In the event that it is necessary to contact you to clarify some of the information you provided, may we contact you by telephone?	<input type="checkbox"/> Yes - Enter number(s) on which you can be reached → <input type="checkbox"/> No		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Area code</td> <td style="width: 50%;">Telephone number</td> </tr> <tr> <td> </td> <td> </td> </tr> </table>	Area code	Telephone number		
Area code	Telephone number						
23. Please print your name here	Date prepared _____						

REFERENCE LIST B - KINDS OF BUSINESSES

This list is to be used in answering question 9 about the kind of business or industry for which you worked. Please scan the entire list, choose the appropriate answer for the question and enter the code and description from this list. If none of the categories listed below adequately describes the kind of business for which you worked, use the "Other" category (code 731).

Code	Description	Code	Description
	Manufacturing		Other Kinds of Business
701	Aircraft, aircraft engines, aircraft parts	720	Agriculture, forestry, and fisheries
702	Chemicals and allied products	721	Business, personal, and professional services
703	Electrical machinery, equipment and supplies for the generation, storage, transformation, transmission, and utilization of electrical energy	722	Construction
704	Electronic apparatus, radio, television and communication equipment and parts	723	Engineering or architectural services
705	Electronic computers, accounting, calculating and office machinery and equipment	724	Finance, insurance, or real estate
706	Fabricated metal products (except ordnance, machinery and transportation equipment)	725	Mining and petroleum extraction
707	Machinery (except electrical) including engines and turbines, farming and construction machinery, mining, metalworking and other manufacturing and service industry machines	726	Private, nonprofit organizations other than educational institutions and hospitals
708	Motor vehicles and motor vehicle equipment including trucks, buses, automobiles, railroad engines and cars	727	Professional and technical societies
709	Ordnance, including manufacture of arms, ammunition, tanks, and complete guided missiles, space vehicles and equipment	728	Research institutions
710	Petroleum refining and related industries	729	Retail and wholesale trade
711	Primary metal industries, including smelting, refining, rolling, drawing, alloying, and manufacture of castings, forgings and other basic metal products	730	Transportation, communication, or other public utilities
712	Professional and scientific equipment and supplies	731	Other (Describe briefly under the applicable item on the questionnaire.)
713	Other manufacturing including printing and publishing		
	Educational Institutions		Public Administration (Include only uniquely governmental activities, such as the U.S. Postal Service, U.S. Air Force, State court, Department of Motor Vehicles, city building inspection, or city public welfare. For example, if you work for the U.S. Postal Service use code 733, Federal public administration; on the other hand, if you work at a Veterans' Administration Hospital, use code 718, Hospital or clinic; if you work at a State university, use code 714, College or university; if you work for a county road building agency, use code 722, Construction; if you work in a Defense Department research laboratory, use code 728, Research institution.)
714	College or university (offering at least a bachelor's degree)	732	Uniformed military service
715	Junior college or technical institute	733	Federal public administration
716	Medical school	734	State public administration
717	Other educational institutions	735	Local public administration (city, county, etc.)
	Health Services	737	Regional government
718	Hospital or clinic	736	Other government
719	Other medical and health services		

REFERENCE LIST C - OCCUPATIONS

This list is to be used in answering questions 10 and 18 about your occupational classification. Please scan the entire list, choose the appropriate entry and enter the code and description from this list. If you cannot find exactly the right entry, please choose the one that comes nearest to it. If none of the entries is at all appropriate, use the "Other" category (code 475) and enter a brief description in the space provided on the questionnaire.

Code	Description	Code	Description
	Engineers, including college professors and instructors		Health Occupations, including persons who are primarily practitioners. Persons engaged primarily in medical research, teaching, and similar activities use code 432, Medical scientist.
401	Engineer, aeronautical and astronautical	438	Physician or surgeon
402	Engineer, agricultural	439	Technician, dental
403	Engineer, chemical	440	Technician, medical
404	Engineer, civil and architectural	441	Other health occupation (Describe briefly under the applicable item on the questionnaire.)
405	Engineer, electrical and electronic		Technicians and Technologists, except medical
406	Engineer, industrial	442	Designer, electronic parts and machine tools
407	Engineer, mechanical	443	Designer, industrial
408	Engineer, metallurgical and materials	444	Designer, other
409	Engineer, mining, petroleum, and geological	445	Draftsman
410	Engineer, nuclear	446	Surveyor
411	Engineer, environmental and sanitary	447	Technician, biological and agricultural
412	Engineer, operations research systems	448	Technician, electrical and electronic
413	Engineer, other fields (Describe briefly under the applicable item on the questionnaire.)	449	Technician, construction, highways, and architectural
	Computer Specialist, including college professors and instructors	450	Technician, mechanical
414	Computer programmer	451	Technician, other engineering
415	Computer systems analyst	452	Technician, physical science
416	Computer scientist	453	Technician, other fields (Describe briefly under the applicable item on the questionnaire.)
417	Other computer specialist (Describe briefly under the applicable item on the questionnaire.)		Teachers
	Mathematicians and Statisticians, including college professors and instructors	454	Teacher, elementary school
418	Actuary	455	Teacher, secondary school
419	Mathematician	456	Teacher, college and university, excluding engineering and science (Engineering and science teachers see codes 401-437 above.)
420	Statistician		Administrators, Managers, and Officials, excluding farm
421	Operations research analyst	476	Urban and regional planner
	Physical Scientists, including college professors and instructors	487	College president or dean
422	Chemist	456	Administrator or manager, scientific and technical research and development
423	Earth scientists including geologists, geophysicists, etc.	459	Administrator or manager, production and operations
424	Physicist, astronomer	460	Administrator, manager, or official, all other, excluding self-employed
425	Atmospheric scientist, meteorologist	461	Self-employed proprietor
426	Oceanographer		All Other Occupations
427	Other physical scientist (Describe)	462	Accountant
	Biological Scientists, including college professors and instructors	463	Attorney or judge
428	Agricultural scientists, including foresters and conservationists	464	Sales worker
429	Biological scientist	465	Clerical worker (such as bookkeeper, secretary, etc.)
430	Biochemist	466	Clergy
431	Biophysicist	467	Craft worker (such as baker, carpenter, electrician, mechanic, repair worker)
432	Medical scientist, excluding persons who are primarily medical practitioners; see Health Occupations	466	Farmer (owner, manager, tenant, or farm laborer)
433	Other biological scientist (Describe)	469	Fire fighter or police
	Social scientists, including college professors and instructors	470	Laborer, except farm
434	Economist	471	Librarian
435	Psychologist	472	Merchant or shopkeeper, self-employed
436	Sociologist or anthropologist	473	Operative (such as assembler, factory worker, miner, welder, truck driver, etc.)
437	Other social scientist (Describe briefly under the applicable item on the questionnaire.)	474	Postal worker
		475	Other occupations, not specified above (Describe briefly under the applicable item on the questionnaire.)

Appendix D. Source of Data

Characteristic	Table number	Item number on 1978 questionnaire
Age in 1978*.....	1	(From the 1970 census response)
Sex.....	1	(From the 1972 survey response, if available; otherwise from the 1970 census response)
Race*.....	1	(From the 1970 census response)
Residence in 1978.....	1	A, page 1
Professional identification.....	1	Part IV, 18
Hispanic heritage.....	1	Part IV, 21
Occupation in 1978.....	1	Part III, 10
Highest degree held*.....	2	2a; otherwise from 1976, 1974, or 1972 survey response
Major field of study for highest degree held*.....	2	3; otherwise from 1976, 1974, or 1972 survey response
Type of supplementary training: 1977.....	2	Part I, 4b
Job and occupational mobility: 1976, 1978*.....	3	1976 survey response and Part III, 10, 14
Job and occupational mobility: 1974, 1978*.....	3	1974 survey response and Part III, 10, 14
Job and occupational mobility: 1972, 1978*.....	3	1972 survey response and Part III, 10, 14
Years of professional experience*.....	3	Part IV, 17
Type of employer.....	4	Part III, 12
Federal support.....	4	Part III, 15a, 15b
Unemployment status: 1977.....	4	Part IV, 16a, 16b
Employment status: February 1978*.....	4	Part II, 5a, 5b, 7
Full-time employment in science or engineering: February 1978.....	4	Part II, 6a, 6b
National interest topics.....	4	Part IV, 19
Industry in 1978.....	4	Part III, 9
Primary work activity*.....	4	Part III, 11b
Annual salary rate: 1978.....	5	Part III, 13

*For more information, see appropriate subject in appendix A.

Appendix E. Response Rates

Table E-1 presents response rates of various components of the sample for the 1978 National Survey of Natural and Social Scientists and Engineers. The characteristics presented here are based on the 1970 census or on the 1978, 1976, 1974, or 1972 surveys. Since the percentages in table E-1 are based on a complete count of the sample cases, no reference to the standard error tables is necessary.

Table E-2 presents distributions of respondents and nonrespondents by the set of characteristics shown in table E-1.

Table E-1 is the counterpart of table E-1 of appendix E of the first report in this series *Selected Characteristics of Persons in Physical Science: 1978*. Table E-1 of that report, however, contained data for 362 respondents whose data were not represented in the tables and text of the report. Table E-1 of this report for social scientists and psychologists excludes data for these 362 respondents.

Table E-1. National Sample, by Field of Science or Engineering in 1976, 1974, and 1972, Age in 1978, and Sex, by Response in the 1978 Survey (Unweighted)

Sex, age in 1978 and field of science or engineering 1976	Response in 1978			
	Total		Respondents	Nonrespondents
	Number	Percent		
Total.....	50,093	100.0	81.4	18.6
SEX				
Male.....	46,877	100.0	81.6	18.4
Female.....	3,216	100.0	78.5	21.5
AGE IN 1978				
Under 30 years.....	287	100.0	76.0	24.0
30 to 34 years.....	6,264	100.0	75.7	24.3
35 to 39 years.....	9,226	100.0	78.1	21.9
40 to 44 years.....	8,075	100.0	81.3	18.7
45 to 49 years.....	7,644	100.0	83.1	16.9
50 to 54 years.....	6,994	100.0	84.9	15.1
55 to 59 years.....	5,183	100.0	85.8	14.2
60 to 64 years.....	3,193	100.0	85.5	14.5
65 to 69 years.....	1,930	100.0	82.2	17.8
70 years and over.....	1,297	100.0	76.2	23.8
FIELD OF SCIENCE OR ENGINEERING IN 1976				
Respondents in 1976.....	42,644	100.0	91.8	8.2
Total in scope in 1976.....	37,602	100.0	92.0	8.0
Computer specialists.....	2,064	100.0	90.8	9.2
Engineers.....	19,922	100.0	91.4	8.6
Mathematical specialists.....	1,486	100.0	92.6	7.4
Life scientists.....	3,800	100.0	93.9	6.1
Physical scientists.....	4,695	100.0	93.4	6.6
Environmental scientists.....	1,749	100.0	92.3	7.7
Psychologists.....	1,936	100.0	92.1	7.9
Social scientists.....	1,950	100.0	92.4	7.6
Total out-of-scope in 1976.....	5,042	100.0	89.8	10.2
Nonrespondents in 1976.....	7,449	100.0	21.9	78.1
FIELD OF SCIENCE OR ENGINEERING IN 1974				
Respondents in 1974.....	44,158	100.0	88.9	11.1
Total in scope in 1974.....	39,473	100.0	89.2	10.8
Computer specialists.....	2,291	100.0	87.4	12.6
Engineers.....	20,814	100.0	88.6	11.4
Mathematical specialists.....	1,612	100.0	89.3	10.7
Life scientists.....	4,026	100.0	91.0	9.0
Physical scientists.....	4,824	100.0	91.3	8.7
Environmental scientists.....	1,867	100.0	88.6	11.4
Psychologists.....	1,989	100.0	89.0	11.0
Social scientists.....	2,050	100.0	89.2	10.8
Total out-of-scope in 1974.....	4,685	100.0	86.2	13.8
Nonrespondents in 1974.....	5,935	100.0	25.6	74.4
FIELD OF SCIENCE OR ENGINEERING IN 1972				
Respondents in 1972.....	50,093	100.0	81.4	18.6
Total in scope in 1972.....	50,093	100.0	81.4	18.6
Computer specialists.....	3,391	100.0	76.7	23.3
Engineers.....	25,797	100.0	81.1	18.9
Mathematical specialists.....	2,185	100.0	81.9	18.1
Life scientists.....	4,891	100.0	84.1	15.9
Physical scientists.....	6,248	100.0	84.0	16.0
Environmental scientists.....	2,095	100.0	82.2	17.8
Psychologists.....	2,488	100.0	79.9	20.1
Social scientists.....	2,998	100.0	79.4	20.6

Table E-2. Respondents and Nonrespondents in the 1978 National Survey, by Field of Science or Engineering in 1976, 1974, and 1972, by Age in 1978, and Sex (Unweighted)

Sex, age in 1978, and field of science or engineering in 1976, 1974, 1972	Responded in 1978		Did not respond in 1978	
	Number	Percent	Number	Percent
Total.....	40,771	100.0	9,322	100.0
SEX				
Male.....	38,245	93.8	8,632	92.6
Female.....	2,526	6.2	690	7.4
AGE IN 1978				
Under 30 years.....	218	0.5	69	0.7
30 to 34 years.....	4,739	11.6	1,525	16.4
35 to 39 years.....	7,208	17.7	2,018	21.6
40 to 44 years.....	6,565	16.1	1,510	16.2
45 to 49 years.....	6,354	15.6	1,290	13.8
50 to 54 years.....	5,939	14.6	1,055	11.3
55 to 59 years.....	4,445	10.9	738	7.9
60 to 64 years.....	2,729	6.7	464	5.0
65 to 69 years.....	1,586	3.9	344	3.7
70 years and over.....	988	2.4	309	3.3
Median age.....	45	(X)	43	(X)
FIELD OF SCIENCE OR ENGINEERING IN 1976				
Responded in 1976.....	39,137	96.0	3,507	37.6
In scope in 1976.....	34,609	84.9	2,993	32.1
Computer specialists.....	1,875	4.6	189	2.0
Engineers.....	18,206	44.7	1,716	18.4
Mathematical specialists.....	1,376	3.4	110	1.2
Mathematicians.....	992	2.4	89	1.0
Statisticians.....	384	0.9	21	0.2
Life scientists.....	3,568	8.8	232	2.5
Agricultural scientists.....	1,446	3.5	94	1.0
Biologists.....	1,720	4.2	112	1.2
Medical scientists.....	402	1.0	26	0.3
Physical scientists.....	4,384	10.8	311	3.3
Chemists.....	2,692	6.6	171	1.8
Physicists and astronomers.....	1,443	3.5	124	1.3
Other physical scientists.....	249	0.6	16	0.2
Environmental scientists.....	1,615	4.0	134	1.4
Earth scientists.....	1,357	3.3	114	1.2
Atmospheric scientists.....	187	0.5	13	0.1
Oceanographers.....	71	0.2	7	0.1
Psychologists.....	1,784	4.4	152	1.6
Social scientists.....	1,801	4.4	149	1.6
Economists.....	750	1.8	70	0.8
Sociologists and anthropologists.....	484	1.2	38	0.4
Other social scientists.....	567	1.4	41	0.4
Out of scope.....	4,528	11.1	514	5.5
Did not respond in 1976.....	1,634	4.0	5,815	62.4

Table E-2. Respondents and Nonrespondents in the 1978 National Survey, by Field of Science or Engineering in 1976, 1974, and 1972, by Age in 1978, and Sex (Unweighted)—Continued

Sex, age in 1978, and field in science or engineering in 1976, 1974, 1972	Responded in 1978		Did not respond in 1978	
	Number	Percent	Number	Percent
FIELD OF SCIENCE OR ENGINEERING IN 1974				
Responded in 1974.....	39,252	96.3	4,906	52.6
In scope in 1974.....	35,212	86.4	4,261	45.7
Computer specialists.....	2,003	4.9	288	3.1
Engineers.....	18,450	45.3	2,364	25.4
Mathematical specialists.....	1,440	3.5	172	1.8
Mathematicians.....	1,041	2.6	131	1.4
Statisticians.....	399	1.0	41	0.4
Life scientists.....	3,663	9.0	363	3.9
Agricultural scientists.....	1,491	3.7	159	1.7
Biologists.....	1,755	4.3	160	1.7
Medical scientists.....	417	1.0	44	0.5
Physical scientists.....	4,402	10.8	422	4.5
Chemists.....	2,713	6.7	251	2.7
Physicists and astronomers.....	1,409	3.5	145	1.6
Other physical scientists.....	280	0.7	26	0.3
Environmental scientists.....	1,655	4.1	212	2.3
Earth scientists.....	1,399	3.4	176	1.9
Atmospheric scientists.....	186	0.5	22	0.2
Oceanographers.....	70	0.2	14	0.2
Psychologists.....	1,771	4.3	218	2.3
Social scientists.....	1,828	4.5	222	2.4
Economists.....	787	1.9	109	1.2
Sociologists and anthropologists.....	490	1.2	54	0.6
Other social scientists.....	551	1.4	59	0.6
Out of scope.....	4,040	9.9	645	6.9
Did not respond in 1974.....	1,519	3.7	4,416	47.4
Responded in 1972.....	40,771	100.0	9,322	100.0
In scope in 1972.....	40,771	100.0	9,322	100.0
Computer specialists.....	2,600	6.4	791	8.5
Engineers.....	20,927	51.3	4,870	52.2
Mathematical specialists.....	1,790	4.4	395	4.2
Mathematicians.....	1,315	3.2	289	3.1
Statisticians.....	475	1.2	106	1.1
Life scientists.....	4,113	10.1	778	8.3
Agricultural scientists.....	1,720	4.2	305	3.3
Biologists.....	1,798	4.4	341	3.7
Medical scientists.....	595	1.5	132	1.4
Physical scientists.....	5,249	12.9	999	10.7
Chemists.....	3,061	7.5	583	6.3
Physicists and astronomers.....	1,791	4.4	337	3.6
Other physical scientists.....	397	1.0	79	0.8
Environmental scientists.....	1,723	4.2	372	4.0
Earth scientists.....	1,553	3.8	345	3.7
Atmospheric scientists.....	132	0.3	18	0.2
Oceanographers.....	38	0.1	9	0.1
Psychologists.....	1,988	4.9	500	5.4
Social scientists.....	2,381	5.8	617	6.6
Economists.....	954	2.3	262	2.8
Sociologists and anthropologists.....	554	1.4	142	1.5
Other social scientists.....	873	2.1	213	2.3
Out of scope in 1972.....	-	-	-	-
Did not respond in 1972.....	-	-	-	-

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