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EARNED DEGREES BY FIELD OF STUDY AND LEVEL PROJECTED TO 1975

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Foreword

This report presents projections of the number of degrees that will be earned in the United States at each level in selected fields of study through 1975. The projections are basically extensions of past trends with allowance made for the tendency of such trends to level off. The demand for degree projections by subject field for use in planning and in making policy decisions related to the future supply of trained manpower has been heavy in the past and shows no signs of abating. The projections included in this report will make a substantial contribution toward meeting these needs.

The data used in making the projections were taken from the annual surveys of the Office of Education, *Earned Degrees Conferred by Institutions of Higher Education and Engineering Enrollments and Degrees*. Other Office of Education surveys used were *Junior-Year Enrollments in Science, Mathematics, and Foreign Languages*, for the years 1957-60, and 1962; and *Enrollment for Advanced Degrees*, for the years 1959-62.

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Scope And Source

This report supplies long-range projections of earned degrees to be conferred by institutions of higher education in the United States and its outlying areas.¹ Projections by level of degree are provided for total degrees and for certain selected fields of study for the years 1965, 1970, and 1975, as well as for the 5-year periods 1961-65, 1966-70, and 1971-75. The data upon which the projections are based have been taken from the Office of Education's annual circulars *Earned Degrees Conferred* for the years 1953 through 1962. These publications provide actual data on earned degrees as reported by individual institutions of higher education.

Projections of degrees by field are presented for selected areas in which there is considerable demand for data. These areas are grouped into four major categories and subdivisions as follows:

- I. Arts, humanities, and social sciences
 - a. Foreign languages.
 - b. All other arts, humanities, and social sciences.
- II. Basic and applied sciences
 - a. Life sciences:
 - 1. Health professions.
 - 2. Biological sciences.
 - 3. Agriculture and forestry.
 - b. Engineering, mathematics, and physical sciences:
 - 1. Engineering.
 - 2. Mathematics.
 - 3. Physical sciences.
- III. Other professional fields
 - a. Education.
 - b. All other professional fields.
- IV. Miscellaneous and unclassified fields

The specific fields included in each category are indicated briefly in the table footnotes and in detail in appendix A, table A.

In 1955-56, the Office of Education adopted a more detailed questionnaire for reporting degrees than was used formerly. As a result, there was a lack of comparability between certain categories of degrees reported prior to 1955-56 and those reported subsequent to that date. Since continuous, comparable series are required as bases

¹ Degree-granting institutions are located in each of the 50 States, the District of Columbia, and Puerto Rico.

for making projections, the categories used in this publication have been adjusted when necessary to produce such series. Details on the components of the categories used, together with definitions of levels of degrees, are given in appendix A.

The adjusted categories of degrees expressed as percentages of total degrees by level show definite trends in the period 1953-62. Normally, trends change gradually rather than abruptly. It has been assumed, therefore, that the trends will continue to 1975, but with some tendency to level off. Tables 1 through 5 show the projections by field of study made on the basis of this assumption. Tables 6 through 10 provide an estimate of the number of degrees that would be conferred in each field if the proportion of total degrees in each field were to remain constant at the 1960-62 level instead of following the trend. These estimates are included as a benchmark against which the trends over the past 10 years may be measured and evaluated. Tables 11 through 14 facilitate this comparison by expressing the trend projection as a percentage of the constant estimate for each level and each field of study. The basic trends which underlie the projection are shown in tables 15 through 20 which give percentage distributions of the number of degrees conferred from 1953 through 1963, by level, sex, and field.

Comparison of Trend Projections With Constant-Rate Projections

Tables 11-14 compare the number of degrees expected in the selected fields on the trend basis with the number expected in the absence of a trend. The comparison shows that the current trends extended into the future vary greatly both between fields and between levels. The differences reflect the encouragement and aid that have been given in recent years to the science and teaching professions.

Arts, Humanities, and Social Sciences

Table 11 shows that when degrees are projected on the basis of 1953-62 trends the largest increase at the first level is in the arts, humanities, and social sciences. Foreign language degrees, on the basis of the 1953-62 trends, are expected to achieve spectacular gains at both the first and second levels (table 12). This increase has not yet appeared at the doctoral level; however, the recent upsurge in foreign language degrees indicates that the gains may reach the doctoral level in the near future.

Basic and Applied Sciences

If the 1953-62 trend is followed, the number of first-level degrees in the basic and applied sciences will fall below what would be expected on the basis of the constant-rate projection (table 13). At the same time the trend data indicate a substantial rise in second-level degrees in the sciences. The trend projection of doctoral degrees in the scientific fields is somewhat higher than the constant-rate projection.

Table 13 also shows the wide differences among the science components when the trend projection is related to the constant-rate projection. At all levels the trend projection of degrees in the health professions is below the constant-rate projection. The projection of first-level engineering degrees based on enrollment trends is only about 75 percent of that based on the 1960-62 rate. The trend projection of engineering degrees at both the second and doctoral levels, however, shows significant advances over the constant-rate projection. In 1975, for example, the doctoral degrees expected if the 1953-62 trend continues will be $1\frac{1}{2}$ times the number expected on the basis of the constant rate.

In the physical sciences the greatest gains, on the basis of the 1953-62 trend, are expected in second-level degrees (table 14). At both the first level and the doctoral level the trend projection falls below the number of degrees expected on the basis of the constant rate. Sharp increases at all levels are expected in the field of mathematics if the 1953-62 trend continues to 1975.

Other Professional Fields

The number of degrees indicated by the trend projection to be granted in other professional fields is less than the number indicated by the constant-rate projection. When the field of education is excluded from other professional fields, however, this difference disappears. In fact, the number of second-level degrees in 1975, as projected from the 1953-62 trend, is $1\frac{1}{2}$ times the number expected from the constant rate.

The increased specialization of teachers accounts for the decline in the education category. Persons who are prepared to teach academic subjects are not reported under the category of education in the basic degree survey, but under the specific field of concentration. This increases the number of degrees in the academic subjects such as English, foreign languages, mathematics, science, and social studies, while depleting the education category. The degrees reported

under this category include only general and special teaching fields (for detailed listing, see app. A, table A, sec. III). This method of reporting is intended to serve those who are interested in degree statistics from a manpower standpoint. Data on the number of teachers prepared to teach in public elementary and secondary schools are available from other sources.²

Methodology

The projection of degrees by field, with the exception of first-level degrees in engineering to be conferred upon men, utilized the percentage distributions of degrees conferred from 1953 through 1962 (tables 15 through 20).

Trend Projections

For each year from 1953 to 1962, the proportion of degrees in each of the four major categories was determined for each level of degree and sex. A straight line or a log curve was fitted to each of these sets of data. The proportions thus projected were applied to the projected total number of degrees for the corresponding level, sex, and year in order to obtain the projections shown in table 1.

When the four major categories had been projected, the fields within each category were projected in a similar manner. An exception was the projection of first-level engineering degrees for men, which was done separately from all other fields. This projection is based on engineering enrollments which are available by class level.

Details of the projection methodology may be found in appendix B.

Constant-Rate Projection

The percentage distribution of degrees by field of study was averaged for the years 1960 through 1962, for each level and sex. These average percentages were then applied to the total number of degrees for the appropriate level and sex for each year to obtain the projections shown in tables 6-10.

² See annual reports of the National Education Association, Washington, D.C. *Teacher Supply and Demand in the Public Schools*.

Table 1.—Trend projection of earned degrees by major fields of study and level: United States and outlying areas, 1950-75

Year ending June 30	Total	Arts humanities, and social sciences ¹	Basic and applied sciences			Other profes- sional fields ¹	Miscella- neous and unclassi- fied fields
			Total	Life sciences ¹	Engineer- ing, mathe- matics, and physical sciences ¹		
First-level degrees ²							
1950	433,734	115,501	138,285	59,518	78,767	163,221	16,727
1955	287,401	80,136	80,365	42,540	37,825	119,964	6,936
1960	394,889	116,169	115,261	48,863	66,378	158,839	4,620
1963	450,592	150,533	120,523	53,499	67,114	174,115	5,421
Projected:							
1965	537,000	180,000	142,000	65,000	77,000	210,000	5,000
1970	731,000	248,000	201,000	87,000	114,000	276,000	6,000
1975	815,000	279,000	229,000	93,000	135,000	301,000	7,000
1961-65	2,291,000	739,000	625,000	277,000	348,000	902,000	25,000
1966-70	3,245,000	1,065,000	880,000	390,000	491,000	1,240,000	30,000
1971-75	3,459,000	1,316,000	1,075,000	448,000	627,000	1,436,000	32,000
Second-level degrees ³							
1950	58,219	13,726	14,367	5,472	8,895	28,455	1,671
1955	58,204	12,141	12,629	4,782	7,847	33,212	222
1960	74,497	17,456	18,285	5,777	12,508	38,549	207
1963	91,418	23,016	24,117	6,760	17,357	43,942	343
Projected:							
1965	101,400	25,300	26,900	7,200	19,700	48,800	300
1970	149,500	38,800	41,900	9,400	32,000	68,600	500
1975	163,200	43,600	46,700	9,800	36,800	72,400	600
1961-65	444,900	108,700	117,000	32,500	84,500	217,600	1,500
1966-70	624,000	159,200	172,000	42,300	129,700	290,700	2,100
1971-75	777,800	204,900	220,600	48,500	172,100	349,600	2,700
Doctor's or equivalent							
1950	6,420	1,811	3,236	1,140	2,096	1,196	177
1955	8,840	2,700	4,256	1,692	2,564	1,857	27
1960	9,829	3,173	4,687	1,769	2,928	1,924	35
1963	12,822	4,039	6,326	2,076	4,250	2,501	56
Projected:							
1965	13,300	4,100	6,600	2,200	4,400	2,500	100
1970	18,300	5,700	9,200	3,000	6,100	3,400	100
1975	24,600	7,700	12,300	4,000	8,300	4,400	100
1961-65	60,800	19,000	29,800	10,200	19,600	11,700	300
1966-70	82,100	25,500	40,800	13,600	27,300	15,400	400
1971-75	114,100	35,800	57,200	18,700	38,500	20,800	500

¹ See tables 2 through 5 for fields of study included in grouping.² Includes bachelor of arts, bachelor of science, and first professional degrees such as M.D., D.D.S., LL.B., B.D., M.L.S., and M.S.W.³ Includes master's degrees, except those which are first professional degrees.

NOTE: Because of rounding, detail may not add to totals.

EARNED DEGREES

Table 2.—Trend projection of earned degrees in arts, humanities, and social sciences, by level: United States and outlying areas, 1950-75

Year ending June 30	Total arts, humanities, and social sciences	Foreign languages	Other ¹
First-level degrees:²			
1950.....	115,601	5,160	110,341
1955.....	80,136	3,548	76,588
1960.....	116,169	5,518	110,651
1965.....	150,633	9,868	140,665
Projected:			
1965.....	180,000	12,000	168,000
1970.....	248,000	17,000	231,000
1975.....	279,000	21,000	258,000
1961-65.....	739,000	45,000	694,000
1966-70.....	1,086,000	73,000	1,022,000
1971-75.....	1,316,000	96,000	1,221,000
Second-level degrees:³			
1950.....	13,726	1,052	12,674
1955.....	12,141	789	11,352
1960.....	17,456	1,155	16,291
1965.....	23,016	2,035	20,981
Projected:			
1965.....	25,300	2,200	23,200
1970.....	38,600	3,300	35,200
1975.....	43,600	3,900	39,700
1961-65.....	108,700	8,900	99,800
1966-70.....	156,200	13,800	145,400
1971-75.....	204,900	18,200	186,800
Doctor's or equivalent:			
1950.....	1,811	196	1,615
1955.....	2,700	187	2,513
1960.....	3,173	232	2,941
1965.....	3,689	277	3,412
Projected:			
1965.....	4,100	300	3,800
1970.....	5,700	400	5,300
1975.....	7,700	600	7,100
1961-65.....	19,000	1,400	17,600
1966-70.....	25,500	1,900	23,600
1971-75.....	35,600	2,600	33,000

¹ Includes English and journalism, fine arts (including architecture), philosophy and religion (excluding theology), and social sciences (excluding social work).

² Includes bachelor of arts, bachelor of science, and first-professional degrees such as M.D., D.D.S., L.L.B., B.D., M.L.S., and M.S.W.

³ Includes master's degrees, except those which are first-professional degrees.

NOTE.—Because of rounding, detail may not add to totals.

Table 3.—Trend projection of earned degrees in life sciences, by level: United States and outlying areas, 1950-75

Year ending June 30	Total life sciences	Health professions ¹	Biological sciences ²	Agriculture and forestry
First-level degrees:³				
1950.....	50,518	21,998	22,521	14,999
1955.....	42,540	22,523	12,847	7,170
1960.....	48,883	24,557	16,730	7,596
1963.....	53,409	25,914	20,479	7,016
Projected:				
1965.....	65,000	31,000	26,000	8,000
1970.....	87,000	40,000	36,000	11,000
1975.....	93,000	42,000	41,000	11,000
1961-65.....	277,000	133,000	105,000	37,000
1966-70.....	390,000	181,000	160,000	49,000
1971-75.....	448,000	202,000	193,000	52,000
Second-level degrees:⁴				
1950.....	5,472	1,555	2,412	1,505
1955.....	4,782	1,750	1,668	1,364
1960.....	5,777	1,872	2,351	1,554
1963.....	6,760	2,024	3,190	1,546
Projected:				
1965.....	7,200	1,900	3,400	1,800
1970.....	9,800	2,600	4,900	2,400
1975.....	9,800	2,600	5,200	2,100
1961-65.....	32,500	8,800	15,100	8,700
1966-70.....	42,300	11,200	20,600	10,400
1971-75.....	48,500	12,700	24,900	10,800
Doctor's or equivalent:				
1950.....	1,140	128	644	268
1955.....	1,692	189	996	507
1960.....	1,799	107	1,206	456
1963.....	2,076	157	1,457	462
Projected:				
1965.....	2,200	200	1,600	500
1970.....	3,000	200	2,300	600
1975.....	4,000	200	3,200	600
1961-65.....	10,200	700	7,000	2,400
1966-70.....	13,600	900	10,000	2,700
1971-75.....	18,700	1,200	14,600	3,000

¹ Includes dentistry, medicine, nursing, optometry, osteopathy, pharmacy, public health, veterinary medicine, and health professions, all other.

² Includes anatomy, bacteriology, biochemistry, biology, botany, entomology, physiology, zoology, and biological sciences, all other.

³ Includes bachelor of arts, bachelor of science, and first-professional degrees such as M.D., D.D.S., LL.B., B.D., M.L.S., and M.S.W.

⁴ Includes master's degrees, except those which are first-professional degrees.

NOTE.—Because of rounding, detail may not add to totals.

EARNED DEGREES

Table 4.—Trend projection of earned degrees in engineering, mathematics, and physical sciences, by level: United States and outlying areas, 1950-75

Year Ending June 30	Total engineering, mathematics, and physical sciences	Engineering	Mathematics	Physical sciences ¹
First-level degrees:²				
1950.....	78,767	52,722	6,362	19,653
1955.....	37,825	22,580	4,034	11,202
1960.....	66,378	37,808	11,437	17,133
1965.....	67,114	33,458	16,121	17,535
Projected:				
1965.....	77,000	34,000	23,000	21,000
1970.....	114,000	46,000	39,000	29,000
1975.....	135,000	51,000	52,000	32,000
1961-65.....	348,000	171,000	86,000	91,000
1966-70.....	491,000	202,000	160,000	129,000
1971-75.....	627,000	244,000	230,000	153,000
Second-level degrees:³				
1950.....	8,895	4,616	974	3,305
1955.....	7,847	4,484	781	2,602
1960.....	12,508	7,159	1,765	3,584
1965.....	17,357	9,635	3,323	4,399
Projected:				
1965.....	19,700	11,000	3,400	5,300
1970.....	32,000	17,800	5,800	8,400
1975.....	36,800	20,300	7,000	9,500
1961-65.....	84,500	47,400	14,100	22,900
1966-70.....	129,700	72,400	23,100	34,200
1971-75.....	172,100	95,100	32,300	44,700
Doctor's or equivalent:				
1950.....	2,096	463	160	1,473
1955.....	2,564	599	280	1,715
1960.....	2,928	786	308	1,839
1965.....	4,250	1,378	490	2,382
Projected:				
1965.....	4,400	1,600	500	2,300
1970.....	6,100	2,400	700	3,100
1975.....	8,300	3,300	1,000	4,100
1961-65.....	19,600	6,900	2,100	10,600
1966-70.....	27,300	10,300	3,100	14,000
1971-75.....	38,500	15,100	4,500	19,000

¹ Includes astronomy, chemistry, geology, meteorology, physics, and physical sciences, all other.² Includes bachelor of arts, bachelor of science, and first-professional degrees such as M.D., D.D.S., LL.B., B.D., M.L.S., and M.S.W.³ Includes master's degrees, except those which are first-professional degrees.

NOTE.—Because of rounding, detail may not add to totals.

Table 5.—Trend projection of earned degrees in other professional fields, by level: United States and outlying areas, 1950-75

Year ending June 30	Total other professional fields	Education	Other ¹
First-level degrees,²			
1950	163,221	61,725	101,496
1955	119,964	53,254	66,710
1960	158,839	71,820	87,019
1963	174,115	83,165	90,950
Projected:			
1965	210,000	100,000	109,000
1970	276,000	130,000	147,000
1975	301,000	144,000	156,000
1961-65	902,000	427,000	475,000
1966-70	1,240,000	584,000	657,000
1971-75	1,436,000	683,000	753,000
Second-level degrees,³			
1950	28,455	20,069	8,386
1955	33,212	27,620	5,592
1960	38,549	30,424	8,125
1963	43,942	34,115	9,827
Projected:			
1965	48,800	37,300	11,500
1970	68,600	49,900	18,700
1975	72,400	50,200	22,200
1961-65	217,600	168,600	49,000
1966-70	280,700	215,300	65,400
1971-75	349,600	247,200	102,400
Doctor's or equivalent			
1950	1,196	953	243
1955	1,857	1,470	387
1960	1,924	1,474	450
1963	2,501	1,943	558
Projected:			
1965	2,500	1,900	600
1970	3,400	2,500	900
1975	4,400	3,200	1,200
1961-65	11,700	9,000	2,700
1966-70	15,400	11,500	3,900
1971-75	20,400	15,200	5,200

¹ Includes business and commerce, home economics, law, library science, military, naval, or air force science, social work, and theology.

² Includes bachelor of arts, bachelor of science, and first professional degrees such as M.D., D.D.S., LL.B., B.D., M.L.S., and M.S.W.

³ Includes master's degrees, except those which are first professional degrees.

NOTE.—Because of rounding, detail may not add to totals.

EARNED DEGREES

Table 8.—Constant-rate projection of earned degrees by major fields of study and level: United States and outlying areas, 1950-75

Year ending June 30	Total	Arts, humanities, and social sciences ¹	Basic and applied sciences			Other profes- sional fields ²	Miscella- neous and unclassi- fied fields
			Total	Life sciences ³	Engineer- ing, mathe- matics, and physical sciences ³		
First-level degrees: ¹							
1950.....	433,734	115,501	128,285	59,518	78,767	163,221	16,727
1955.....	287,401	80,136	80,365	42,540	37,825	119,964	6,956
1960.....	304,889	116,169	115,261	48,893	66,378	138,639	4,620
1965.....	450,592	150,533	120,523	53,409	67,114	174,115	5,421
Projected:							
1965.....	537,000	165,000	149,000	64,000	84,000	218,000	6,000
1970.....	731,000	223,000	206,000	88,000	117,000	294,000	9,000
1975.....	815,000	249,000	227,000	98,000	129,000	329,000	9,000
1961-65.....	2,291,000	704,000	639,000	275,000	364,000	922,000	27,000
1966-70.....	3,245,000	991,000	910,000	391,000	519,000	1,308,000	38,000
1971-75.....	3,859,000	1,179,000	1,079,000	465,000	614,000	1,556,000	45,000
Second-level degrees: ²							
1950.....	58,219	13,726	14,267	5,472	8,895	28,455	1,671
1955.....	58,204	12,141	12,629	4,782	7,847	23,212	222
1960.....	74,497	17,456	18,285	5,777	12,508	38,549	207
1965.....	91,418	23,016	24,117	6,760	17,357	48,942	343
Projected:							
1965.....	101,400	24,100	25,600	7,600	17,900	51,400	300
1970.....	149,500	35,500	38,600	11,400	27,200	74,900	500
1975.....	163,200	38,800	41,800	12,400	29,400	82,100	500
1961-65.....	444,900	106,100	113,800	33,500	80,300	223,500	1,400
1966-70.....	624,000	148,300	160,200	47,400	112,700	313,600	2,000
1971-75.....	777,800	184,800	199,700	59,100	140,600	390,900	2,500
Doctor's or equivalent:							
1950.....	6,420	1,811	3,236	1,140	2,096	1,196	177
1955.....	8,840	2,700	4,256	1,692	2,564	1,857	27
1960.....	9,829	3,173	4,697	1,799	2,898	1,924	35
1965.....	12,822	3,939	6,328	2,076	4,252	2,501	56
Projected:							
1965.....	13,300	4,200	6,400	2,300	4,100	2,600	100
1970.....	18,300	5,800	8,800	3,200	5,700	3,600	100
1975.....	24,600	7,800	11,900	4,200	7,600	4,800	100
1961-65.....	60,800	19,300	29,400	10,400	18,900	11,800	300
1966-70.....	82,100	26,200	39,500	14,200	25,400	16,000	400
1971-75.....	114,100	36,300	55,000	19,700	35,300	22,200	500

¹ See tables 7 through 10 for fields of study included in grouping.² Includes bachelor of arts, bachelor of sciences, and first-professional degrees such as M.D., D.D.S., LL.B., B.D., M.L.S., and M.S.W.³ Includes master's degrees, except those which are first-professional degrees.

NOTE.—Because of rounding, detail may not add to totals.

Table 7.—Constant-rate projection of earned degrees in arts, humanities, and social sciences, by level: United States and outlying areas, 1950-75

Year ending June 30	Total arts, humanities, and social sciences	Foreign languages	Other ¹
First-level degrees: ²			
1960.....	115,501	5,160	110,341
1965.....	80,126	3,548	76,588
1969.....	116,169	5,518	110,651
1963.....	150,533	9,868	140,665
Projected:			
1965.....	165,000	9,000	155,000
1970.....	223,000	12,000	211,000
1975.....	249,000	14,000	235,000
1961-65.....	704,000	39,000	664,000
1966-70.....	991,000	54,000	936,000
1971-75.....	1,179,000	65,000	1,114,000
Second-level degree: ³			
1960.....	13,728	1,052	12,674
1965.....	12,141	789	11,352
1969.....	17,456	1,165	16,291
1963.....	23,016	2,035	20,981
Projected:			
1965.....	24,100	1,800	22,300
1970.....	35,500	2,600	32,900
1975.....	38,800	2,900	35,900
1961-65.....	106,100	8,100	98,000
1966-70.....	148,300	11,000	137,300
1971-75.....	184,800	13,700	171,100
Doctor's or equivalent:			
1960.....	1,811	196	1,615
1965.....	2,700	187	2,513
1969.....	3,173	232	2,941
1963.....	3,989	277	3,662
Projected:			
1965.....	4,200	300	3,900
1970.....	5,800	400	5,400
1975.....	7,800	600	7,200
1961-65.....	19,300	1,400	17,900
1966-70.....	26,200	2,000	24,200
1971-75.....	36,300	2,700	33,600

¹ Includes English and journalism, fine arts (including architecture), philosophy and religion (excluding theology), and social sciences (excluding social work).

² Includes bachelor of arts, bachelor of science, and first-professional degrees such as M.D., D.D.S., LL.B., B.D., M.L.S., and M.S.W.

³ Includes master's degrees, except those which are first-professional degrees.

NOTE.—Because of rounding, detail may not add to totals.

Table 8.—Constant-rate projection of earned degrees in life sciences, by level: United States and outlying areas, 1950-75

Year ending June 30	Total life sciences	Health professions ¹	Biological sciences ²	Agriculture and forestry
First-level degrees:³				
1950.....	59,518	21,998	22,521	14,999
1955.....	42,540	22,528	12,847	7,170
1960.....	48,883	24,557	16,780	7,546
1965.....	53,409	28,914	20,479	7,016
Projected:				
1965.....	64,000	33,000	23,000	9,000
1970.....	88,000	45,000	31,000	13,000
1975.....	98,000	50,000	34,000	14,000
1961-65.....	275,000	128,000	97,000	50,000
1966-70.....	391,000	198,000	139,000	55,000
1971-75.....	465,000	226,000	164,000	66,000
Second-level degrees:⁴				
1950.....	5,472	1,555	2,412	1,506
1955.....	4,782	1,750	1,668	1,364
1960.....	5,777	1,872	2,351	1,554
1965.....	6,760	2,024	3,190	1,546
Projected:				
1965.....	7,600	2,200	3,400	2,100
1970.....	11,400	3,300	5,000	3,100
1975.....	12,400	3,600	5,400	3,400
1961-65.....	33,600	9,500	14,900	9,200
1966-70.....	47,400	13,600	20,800	13,000
1971-75.....	59,100	17,000	25,900	16,200
Doctor's or equivalent:				
1950.....	1,140	128	644	368
1955.....	1,602	189	998	507
1960.....	1,789	107	1,206	476
1965.....	2,076	157	1,457	462
Projected:				
1965.....	2,300	200	1,600	500
1970.....	3,200	300	2,100	800
1975.....	4,200	300	2,900	1,100
1961-65.....	10,400	700	7,000	2,700
1966-70.....	14,200	1,000	9,600	3,700
1971-75.....	19,700	1,400	13,300	5,000

¹ Includes dentistry, medicine, nursing, optometry, osteopathy, pharmacy, public health, veterinary medicine, and health professions, all other.

² Includes anatomy, bacteriology, biochemistry, biology, botany, entomology, physiology, zoology, and biological sciences, all other.

³ Includes bachelor of arts, bachelor of science, and first-professional degrees such as M.D., D.D.S., LL.B., B.D., M.L.S., and M.S.W.

⁴ Includes master's degrees, except those which are first-professional degrees.

NOTE.—Because of rounding, detail may not add to totals.

Table 9.—Constant-rate projection of earned degrees in engineering, mathematics, and physical sciences, by level: United States and outlying areas, 1950-75

Year ending June 30	Total engineering, mathematics, and physical sciences	Engineering	Mathematics	Physical sciences ¹
First-level degrees:²				
1950.....	78,767	52,722	6,392	19,653
1955.....	87,825	52,589	4,034	11,202
1960.....	96,378	57,808	11,437	17,133
1965.....	67,114	33,468	16,121	17,525
Projected:				
1965.....	84,000	45,000	17,000	22,000
1970.....	117,000	64,000	23,000	30,000
1975.....	129,000	70,000	26,000	33,000
1961-65.....	364,000	196,000	74,000	93,000
1966-70.....	519,000	282,000	104,000	133,000
1971-75.....	614,000	333,000	123,000	158,000
Second-level degrees:³				
1950.....	8,895	4,616	974	3,305
1955.....	7,847	4,494	761	2,602
1960.....	12,508	7,159	1,765	3,584
1965.....	17,357	9,635	3,323	4,399
Projected:				
1965.....	17,900	10,100	2,800	5,000
1970.....	27,200	15,400	4,200	7,600
1975.....	29,400	16,600	4,600	8,200
1961-65.....	80,300	45,300	12,700	22,300
1966-70.....	112,700	63,900	17,600	31,200
1971-75.....	140,600	79,700	21,800	39,100
Doctor's or equivalent:				
1950.....	2,096	463	160	1,473
1955.....	2,564	599	250	1,715
1960.....	2,928	786	303	1,839
1965.....	4,250	1,375	490	2,382
Projected:				
1965.....	4,100	1,200	400	2,500
1970.....	5,700	1,700	600	3,400
1975.....	7,600	2,200	800	4,600
1961-65.....	18,900	5,700	2,000	11,200
1966-70.....	25,400	7,500	2,700	15,200
1971-75.....	35,300	10,400	3,700	21,200

¹ Includes astronomy, chemistry, geology, meteorology, physics, and physical sciences, all other.

² Includes bachelor of arts, bachelor of science, and first-professional degrees such as M.D., D.D.S., LL.B., B.D., M.L.S., and M.S.W.

³ Includes master's degrees, except those which are first-professional degrees.

NOTE.—Because of rounding, detail may not add to totals.

EARNED DEGREES

Table 10.—Constant-rate projection of earned degrees in other professional fields, by level: United States and outlying areas, 1950-75

Year ending June 30	Total other professional fields	Education	Other ¹
First-level degrees: ²			
1950	163,221	81,725	101,496
1955	119,964	53,254	66,710
1960	158,839	71,820	87,019
1963	174,115	83,165	90,950
Projected:			
1965	218,000	104,000	113,000
1970	294,000	138,000	156,000
1975	329,000	157,000	173,000
1961-65	922,000	437,000	485,000
1966-70	1,306,000	618,000	690,000
1971-75	1,556,000	736,000	819,000
Second-level degrees: ³			
1950	28,455	20,069	8,386
1955	33,212	27,630	5,582
1960	38,549	30,424	8,125
1963	43,942	34,115	9,827
Projected:			
1965	51,400	40,800	10,600
1970	74,900	58,800	16,200
1975	82,100	64,500	17,600
1961-65	223,500	175,800	47,800
1966-70	313,000	246,200	67,400
1971-75	390,800	306,800	84,000
Doctor's or equivalent:			
1950	1,106	983	243
1955	1,837	1,470	397
1960	1,924	1,474	450
1963	2,501	1,943	558
Projected:			
1965	2,600	2,000	600
1970	3,600	2,700	900
1975	4,800	3,700	1,100
1961-65	11,800	9,100	2,700
1966-70	16,000	12,300	3,700
1971-75	22,200	17,100	5,100

¹ Includes business and commerce; home economics; law; library science; military, naval, or air force science; social work; and theology.

² Includes bachelor of arts, bachelor of science, and first-professional degrees such as M.D., D.D.S., LL.B., B.D., M.L.S., and M.S.W.

³ Includes master's degrees, except those which are first-professional degrees.

Note.—Because of rounding, detail may not add to totals.

Table 11.—Trend projection of degrees in major fields of study by level as percent of constant-rate projection: United States and outlying areas, 1965-75

Year ending June 30	Total arts, humanities, and social sciences ¹	Total basic and applied sciences ¹	Total other professional fields ¹	Miscellaneous and unclassified fields
First-level degrees:				
1965	109	96	96	89
1970	111	98	94	72
1975	112	101	91	71
Second-level degrees:				
1965	105	105	95	107
1970	109	109	91	107
1975	112	112	88	107
Doctor's level degrees:				
1965	97	103	98	102
1970	97	104	95	98
1975	98	104	93	93

¹ See tables 2 through 5 for fields of study included in grouping.

Table 12.—Trend projection of degrees in arts, humanities, and social sciences, by level as percent of constant-rate projection: United States and outlying areas, 1965-75

Year ending June 30	Total arts, humanities, and social sciences	Foreign languages	Other ¹
First-level degrees			
1965	109	127	108
1970	111	130	109
1975	112	131	110
Second-level degrees			
1965	105	121	104
1970	109	128	107
1975	112	136	110
Doctor's level degrees:			
1965	97	97	97
1970	97	97	98
1975	98	97	99

¹ See table 2 for fields of study included in grouping.

Table 13.—Trend projection of degrees in life sciences, engineering, mathematics, and physical sciences, by level as percent of constant-rate projection: United States and outlying areas, 1965-75

Year ending June 30	Total basic and applied sciences	Health professions ¹	Biological sciences ¹	Agriculture and forestry	Engineering	Mathematics	Physical sciences ¹
First-level degrees							
1965	96	95	114	89	74	133	96
1970	98	89	117	85	72	167	97
1975	101	84	119	79	73	199	97
Second-level degrees							
1965	105	87	101	86	109	122	106
1970	109	80	98	77	115	138	111
1975	112	72	95	62	122	151	117
Doctor's level degrees							
1965	103	99	100	83	130	112	93
1970	104	90	106	75	141	117	91
1975	104	81	112	55	147	122	89

¹ See tables 3 and 4 for fields of study included in grouping.

Table 14.—Trend projection of degrees in other professional fields, by level as percent of constant-rate projection: United States and outlying areas, 1965-75

Year ending June 30	Total other professional fields	Education	Other ¹
First-level degrees			
1965	98	90	97
1970	94	94	94
1975	91	92	91
Second-level degrees			
1965	95	92	106
1970	91	85	115
1975	88	77	126
Doctor's level degrees			
1965	98	96	103
1970	95	92	107
1975	93	87	112

¹ See table 5 for fields of study included in grouping.

EARNED DEGREES

Table 15.—Percentage distribution of total first-level degrees,¹ by major fields of study: United States and outlying areas, 1953-63

Year ending June 30	Number of first- level degrees, all fields	Arts, humanities, and social sciences		Basic and applied sciences			Other profes- sional fields		Miscel- laneous and un- classified fields (percent)
		Total (per- cent)	Foreign languages (percent)	Total (per- cent)	Life sciences (percent)	Engi- neering, mathe- matics, and physical sciences (percent)	Total (per- cent)	Educa- tion (percent)	
Men and Women:									
1953.....	304,857	26.9	1.3	27.9	14.7	13.2	42.2	20.2	3.0
1954.....	292,890	27.0	1.3	27.8	15.1	12.8	42.5	19.4	2.6
1955.....	287,401	27.9	1.2	28.0	14.8	13.2	41.7	18.5	2.4
1956.....	311,298	29.0	1.3	27.7	13.8	13.9	41.3	18.2	2.0
1957.....	340,347	28.7	1.3	28.2	13.4	14.8	41.2	18.2	1.9
1958.....	365,748	28.9	1.2	28.7	13.0	15.7	41.0	17.9	1.8
1959.....	385,161	28.6	1.2	29.1	12.6	16.5	41.0	18.2	1.8
1960.....	304,889	29.4	1.4	29.2	12.4	16.8	40.2	18.2	1.2
1961.....	401,783	30.2	1.6	28.5	12.1	16.3	40.1	18.6	1.2
1962.....	420,485	31.6	1.9	27.6	11.9	15.6	39.6	18.7	1.1
1963 ²	450,592	33.4	2.2	26.7	11.9	14.9	38.6	18.5	1.2
Men:									
1953.....	200,820	24.1	.8	26.2	17.6	18.6	36.8	10.5	3.0
1954.....	187,500	24.2	.8	26.3	17.9	18.4	36.5	9.0	3.0
1955.....	183,602	25.0	.8	26.5	17.5	19.0	35.7	8.1	2.8
1956.....	199,571	26.6	.8	26.1	16.0	20.0	34.9	7.5	2.5
1957.....	222,738	26.2	.8	26.2	15.2	21.0	35.2	7.8	2.3
1958.....	242,948	26.5	.7	26.6	14.5	22.0	35.3	7.9	1.7
1959.....	254,868	26.3	.7	27.2	14.0	23.1	35.1	7.8	1.5
1960.....	255,504	26.6	.8	27.6	13.8	23.8	34.4	7.8	1.4
1961.....	255,900	27.5	.9	26.9	13.6	23.2	34.1	7.8	1.6
1962.....	262,015	28.6	1.1	26.2	13.5	22.7	33.7	7.8	1.4
1963 ²	274,760	30.2	1.2	25.3	13.7	21.6	32.9	7.4	1.6
Women:									
1953.....	104,037	32.5	2.4	11.8	9.1	2.7	52.8	26.9	2.9
1954.....	105,380	32.0	2.2	12.7	9.9	2.8	53.2	27.9	2.1
1955.....	103,799	32.9	2.1	12.8	10.0	2.8	52.5	27.0	1.8
1956.....	111,727	33.5	2.2	12.6	9.7	2.9	52.7	27.3	1.2
1957.....	117,609	33.3	2.2	13.0	9.9	3.0	52.6	27.8	1.1
1958.....	122,800	33.5	2.2	13.2	10.0	3.2	52.4	27.8	.8
1959.....	130,283	33.1	2.2	13.4	9.9	3.5	52.7	28.5	.8
1960.....	139,385	34.6	2.4	13.8	9.8	3.9	51.0	27.2	.7
1961.....	145,883	34.9	2.8	13.7	9.6	4.1	50.7	27.5	.7
1962.....	158,470	36.6	3.3	13.5	9.2	4.3	49.4	26.8	.6
1963 ²	175,842	38.5	3.8	13.3	9.0	4.4	47.6	25.7	.6

¹ Includes bachelor of arts, bachelor of science, and first-professional degrees such as M.D., D.D.S., LL.B., B.D., M.L.S., and M.S.W.² 1963 data were not available at the time the projections were made.

Table 12.—Percentage distribution of total first-level degrees,¹ in life sciences, engineering, mathematics, and physical sciences: United States and outlying areas, 1953-63

Year ending June 30	Number of first- level degrees, all fields	Basic and applied sciences							
		Total (per- cent)	Life sciences			Engineering, mathematics, and physical sciences			
			Total (per- cent)	Health profes- sions (percent)	Biolog- ical sciences (percent)	Total (per- cent)	Engi- neering (percent)	Mathe- matics (percent)	Physical sciences (percent)
Men and Women:									
1953.....	304,857	27.9	14.7	7.2	4.7	13.2	8.0	1.4	3.7
1954.....	292,880	27.8	15.1	7.7	4.6	12.8	7.6	1.4	3.8
1955.....	287,401	28.0	14.8	7.8	4.5	13.2	7.9	1.4	3.9
1956.....	311,296	27.7	13.8	7.2	4.2	13.9	8.5	1.5	3.9
1957.....	340,347	28.2	13.4	6.8	4.3	14.8	9.2	1.6	4.0
1958.....	365,748	28.7	13.0	6.5	4.2	15.7	9.7	1.9	4.2
1959.....	385,151	29.1	12.6	6.3	4.2	16.5	9.9	2.3	4.2
1960.....	394,989	29.2	12.4	6.2	4.2	16.8	9.6	2.9	4.3
1961.....	401,789	28.5	12.1	6.2	4.3	16.3	8.9	3.3	4.1
1962.....	420,485	27.6	11.9	5.9	4.4	15.8	8.3	3.5	4.1
1963 ¹	450,592	26.7	11.9	5.8	4.5	14.9	7.4	3.6	3.9
Men:									
1953.....	200,820	36.2	17.6	7.8	5.5	18.6	12.1	1.6	4.9
1954.....	187,500	36.3	17.9	8.3	5.5	18.4	11.9	1.5	5.1
1955.....	183,602	36.5	17.5	8.3	5.3	19.0	12.3	1.5	5.3
1956.....	199,571	36.1	16.0	7.4	5.0	20.0	13.1	1.6	5.3
1957.....	222,738	36.2	15.2	6.7	5.1	21.0	14.0	1.7	5.3
1958.....	242,948	36.6	14.5	6.2	4.9	22.0	14.5	2.0	5.5
1959.....	254,898	37.2	14.0	6.0	4.8	23.1	14.9	2.6	5.7
1960.....	255,804	37.6	13.8	5.9	4.9	23.8	14.7	3.3	5.8
1961.....	255,900	36.9	13.6	6.0	5.0	23.2	14.0	3.7	5.6
1962.....	262,015	36.2	13.5	5.9	5.0	22.7	13.2	4.0	5.6
1963 ¹	274,780	35.3	13.7	5.8	5.4	21.6	12.1	4.1	5.4
Women:									
1953.....	104,037	11.8	9.1	6.0	3.0	2.7	.....	1.2	1.4
1954.....	105,380	12.7	9.9	6.8	3.0	2.8	.....	1.3	1.4
1955.....	108,799	12.8	10.0	7.0	2.9	2.8	.....	1.3	1.5
1956.....	111,727	12.6	9.7	6.8	2.8	2.9	.....	1.4	1.5
1957.....	117,609	13.0	9.9	7.0	2.8	3.0	.....	1.5	1.5
1958.....	122,800	13.2	10.0	7.1	2.8	3.2	.....	1.6	1.5
1959.....	130,283	13.4	9.9	6.9	3.0	3.5	.....	1.9	1.5
1960.....	139,285	13.8	9.8	6.7	3.0	3.9	.....	2.2	1.6
1961.....	145,883	13.7	9.6	6.4	3.1	4.1	.....	2.5	1.5
1962.....	158,470	13.5	9.2	5.9	3.2	4.3	.....	2.7	1.5
1963 ¹	175,842	13.8	9.0	5.6	3.3	4.4	.....	2.8	1.5

¹ Includes bachelor of arts, bachelor of science, and first-professional degrees such as M.D., D.D.S., LL.B., B.D., M.L.S., and M.S.W.² 1963 data were not available at the time the projections were made.

EARNED DEGREES

Table 17.—Percentage distribution of total second-level degrees,¹ by major fields of study: United States and outlying areas, 1953-63

Year ending June 30	Number of second- level degrees, all fields	Arts, humanities, and social sciences		Basic and applied sciences			Other pro- fessional fields		Miscel- laneous and un- classified fields (percent)
		Total (per- cent)	Foreign languages (percent)	Total (per- cent)	Life sciences (percent)	Engi- neering, mathe- matics, and physical sciences (percent)	Total (per- cent)	Educa- tion (percent)	
Men and Women:									
1953	61,023	21.0	1.4	20.2	8.7	11.6	57.9	44.0	0.8
1954	57,823	21.1	1.4	20.8	7.9	12.9	57.7	48.9	.4
1955	58,204	20.9	1.4	21.7	8.2	13.5	57.1	47.5	.4
1956	59,294	22.0	1.5	21.6	7.6	14.0	55.9	46.0	.5
1957	61,956	22.2	1.4	22.2	7.7	14.4	55.2	45.5	.5
1958	65,614	22.8	1.6	23.3	7.8	15.5	53.5	43.0	.5
1959	69,584	23.1	1.6	24.7	7.9	16.7	51.8	41.1	.4
1960	74,497	23.4	1.6	24.5	7.8	16.8	51.7	40.8	.4
1961	78,270	23.6	1.8	25.9	7.5	18.4	50.1	39.5	.4
1962	84,886	24.2	1.9	26.2	7.5	18.7	49.3	38.5	.3
1963 ¹	91,418	25.2	2.2	26.4	7.4	19.0	48.1	37.3	.4
Men:									
1953	40,639	21.3	1.1	26.8	10.3	16.5	51.1	37.0	.9
1954	38,147	21.4	1.2	27.6	9.2	18.4	50.6	40.4	.4
1955	38,740	20.9	1.1	28.6	9.4	19.3	50.1	39.0	.4
1956	39,397	22.4	1.2	29.4	9.4	20.0	47.7	36.6	.5
1957	41,332	22.5	1.1	30.0	9.4	20.6	47.0	36.0	.6
1958	44,252	23.2	1.3	30.7	9.0	21.7	45.7	33.6	.5
1959	47,408	23.0	1.2	32.1	8.9	23.2	44.5	32.3	.4
1960	50,937	23.1	1.2	31.8	8.7	23.1	44.8	32.4	.4
1961	54,158	23.0	1.3	33.4	8.3	25.1	43.3	31.6	.3
1962	58,705	23.0	1.3	33.8	8.5	25.4	42.8	30.9	.3
1963 ¹	62,944	24.0	1.6	33.7	8.0	25.7	41.8	29.7	.4
Women:									
1953	20,034	20.4	1.9	6.8	5.3	1.5	72.0	58.2	.8
1954	18,676	20.4	2.0	7.1	5.3	1.7	72.2	66.2	.3
1955	19,464	20.7	2.0	7.9	5.9	2.0	71.0	64.3	.4
1956	19,897	21.2	2.1	6.2	4.1	2.1	72.1	64.5	.4
1957	20,623	21.6	2.0	6.5	4.4	2.1	71.5	64.6	.4
1958	21,362	22.1	2.1	8.0	5.4	2.6	69.6	62.6	.3
1959	22,176	23.5	2.3	8.7	5.8	2.9	67.5	60.0	.3
1960	23,680	24.2	2.4	8.8	5.7	3.1	66.8	59.1	.2
1961	24,112	25.2	2.9	9.2	5.5	3.6	65.3	55.1	.4
1962	26,184	26.9	3.2	9.1	5.4	3.7	63.8	55.5	.3
1963 ¹	29,474	27.7	3.6	10.1	6.0	4.1	61.9	54.1	.3

¹ Includes master's degrees, except those which are first-professional degrees.

² 1963 data were not available at the time the projections were made.

Table 18.—Percentage distribution of total second-level degrees,¹ in life sciences, engineering, mathematics, and physical sciences: United States and outlying areas, 1953-63

Year ending June 30	Number of second- level degrees, all fields	Basic and applied sciences							
		Total (per- cent)	Life sciences			Engineering, mathematics, and physical sciences			
			Total (per- cent)	Health profes- sions (percent)	Biological sciences (percent)	Total (per- cent)	Engi- neering (percent)	Mathe- matics (percent)	Physical sciences (percent)
Men and Women:									
1953	61,023	20.2	8.7	3.0	3.3	11.6	6.1	1.1	4.4
1954	56,823	20.8	7.9	2.7	2.9	12.9	7.4	1.2	4.3
1955	58,204	21.7	8.2	3.0	2.9	13.5	7.7	1.3	4.5
1956	59,294	21.6	7.6	2.1	3.1	14.0	8.0	1.5	4.5
1957	61,955	22.2	7.7	2.2	3.0	14.4	8.4	1.6	4.4
1958	65,614	23.3	7.8	2.6	3.4	15.5	8.8	1.9	4.8
1959	69,584	24.7	7.9	2.6	3.2	16.7	9.7	2.2	4.9
1960	74,497	24.5	7.8	2.5	3.1	16.8	9.6	2.4	4.8
1961	78,270	25.9	7.5	2.1	3.3	18.4	10.4	2.9	5.2
1962	84,889	26.2	7.5	1.9	3.5	18.7	10.5	3.2	5.0
1963 ¹	91,418	26.4	7.4	2.2	3.5	19.0	10.6	3.6	4.8
Men									
1953	40,989	26.8	10.3	2.8	4.0	16.5	9.0	1.4	6.1
1954	38,147	27.6	9.2	2.4	3.5	18.4	11.0	1.5	5.9
1955	38,740	28.6	9.4	2.6	3.3	19.3	11.5	1.6	6.2
1956	39,397	29.4	9.4	2.2	3.6	20.0	11.9	1.8	6.3
1957	41,332	30.0	9.4	2.1	3.6	20.6	12.6	1.9	6.1
1958	44,253	30.7	9.0	2.2	3.5	21.7	13.0	2.1	6.5
1959	47,408	32.1	8.9	2.2	3.5	23.2	14.2	2.5	6.5
1960	50,987	31.8	8.7	2.1	3.6	23.1	14.0	2.8	6.3
1961	54,158	33.4	8.3	1.7	3.7	25.1	15.0	3.3	6.7
1962	58,705	33.8	8.5	1.7	3.9	25.4	15.1	3.7	6.5
1963 ¹	62,944	33.7	8.0	1.8	3.8	25.7	15.3	4.2	6.2
Women									
1953	20,034	6.8	5.3	3.3	1.8	1.5	1	6	9
1954	18,676	7.1	5.3	3.4	1.8	1.7	1	7	1.0
1955	19,464	7.9	5.9	3.8	2.0	2.0	1	8	1.1
1956	19,897	6.2	4.1	2.1	1.9	2.1	1	9	1.1
1957	20,623	6.5	4.4	2.4	1.8	2.1	1	9	1.1
1958	21,362	8.0	5.4	3.3	2.0	2.6	1	1.1	1.4
1959	22,178	8.7	5.8	3.4	2.3	2.9	1	1.4	1.4
1960	23,560	8.8	5.7	3.4	2.2	3.1	1	1.5	1.5
1961	24,112	9.2	5.5	3.0	2.5	3.6	1	1.9	1.6
1962	25,184	9.1	5.4	2.6	2.7	3.7	2	1.9	1.6
1963 ¹	26,474	10.1	6.0	3.0	2.9	4.1	1	2.2	1.7

¹ Includes master's degrees, except those which are first-professional degrees.² 1963 data were not available at the time the projections were made.

EARNED DEGREES

Table 19.—Percentage distribution of total doctor's degrees,¹ by major fields of study: United States and outlying areas, 1953-63

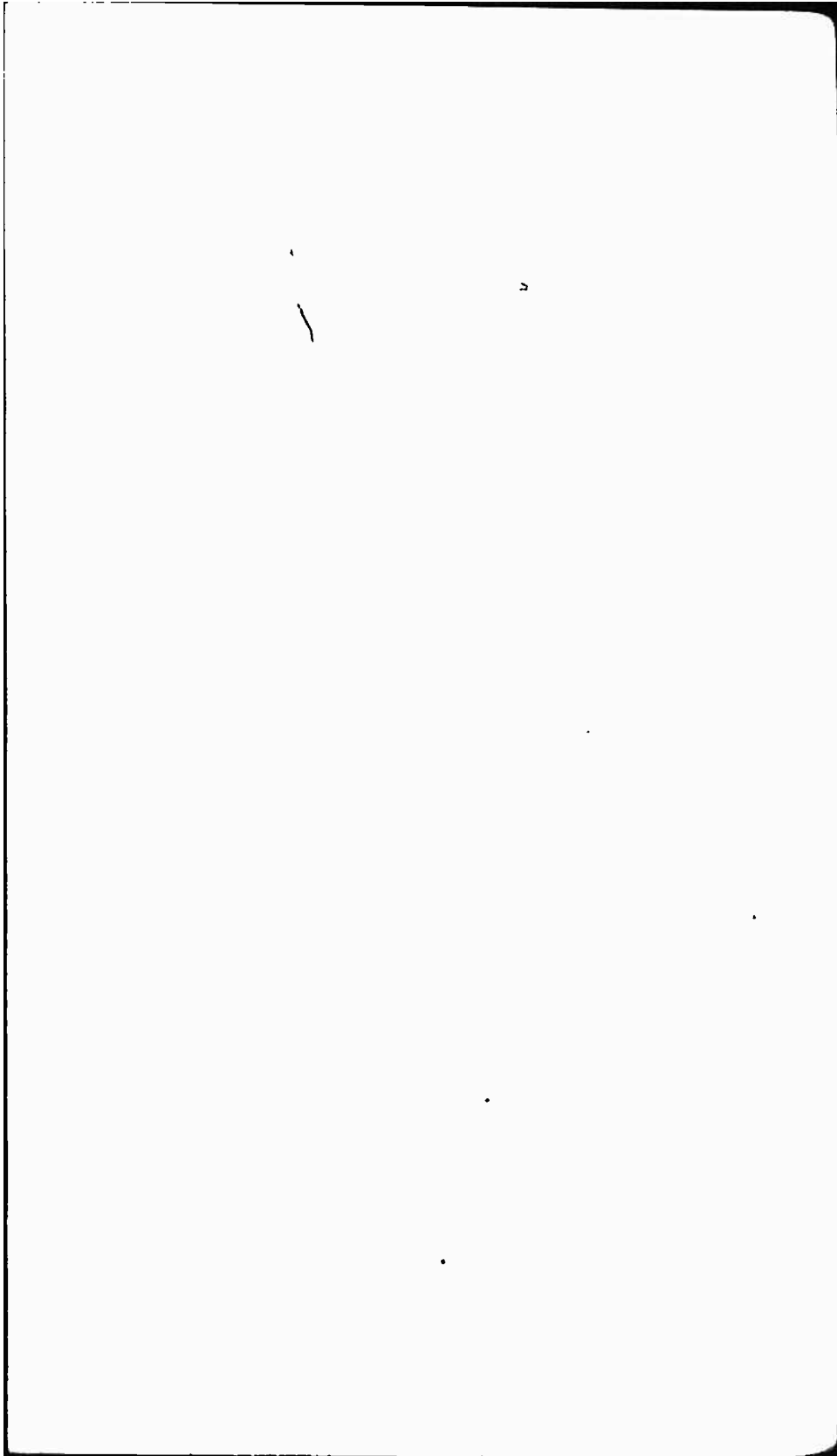
Year ending June 30	Number of doctor's degrees, all fields	Arts, humanities, and social sciences		Basic and applied sciences			Other profes- sional fields		Miscel- laneous and un- classified fields (percent)
		Total (per- cent)	Foreign languages (percent)	Total (per- cent)	Life sciences (percent)	Engi- neering, mathe- matics, and physical sciences (percent)	Total (per- cent)	Educa- tion (percent)	
Men and Women:									
1953.....	8,309	29.7	2.3	49.0	19.2	29.8	20.8	16.3	0.5
1954.....	8,998	30.5	2.6	48.2	20.1	28.1	20.6	16.7	.7
1955.....	8,840	30.5	2.1	48.1	19.1	29.0	21.0	16.6	.3
1956.....	8,903	32.9	2.9	45.8	17.6	28.2	20.3	16.2	.9
1957.....	8,756	31.3	2.5	47.2	18.4	28.8	20.6	16.4	.9
1958.....	8,942	31.2	2.5	46.7	18.2	28.5	21.6	17.1	.6
1959.....	9,390	32.4	2.6	47.0	17.0	30.0	20.4	16.9	.2
1960.....	9,829	32.3	2.4	47.8	18.0	29.8	19.6	16.0	.4
1961.....	10,575	32.3	2.5	47.9	16.9	31.0	19.3	15.1	.5
1962.....	11,622	31.0	2.2	48.9	16.9	32.1	19.6	14.9	.5
1963 ²	12,822	30.7	2.2	49.8	16.2	33.1	19.5	15.2	.4
Men:									
1953.....	7,517	29.1	2.0	51.3	19.4	31.9	19.0	14.8	.5
1954.....	8,181	29.6	2.2	50.6	20.7	30.0	19.1	15.1	.7
1955.....	8,014	29.8	1.8	50.7	19.5	31.2	19.2	15.2	.3
1956.....	8,018	32.0	2.5	48.3	17.9	30.4	18.9	14.8	1.0
1957.....	7,817	30.2	2.1	50.1	18.9	31.2	18.7	14.9	1.0
1958.....	7,978	30.5	2.0	49.4	18.5	30.9	19.6	15.2	.5
1959.....	8,371	31.1	2.2	50.0	17.5	32.6	18.6	14.4	.2
1960.....	8,801	30.9	1.9	50.9	18.6	32.3	17.9	13.5	.4
1961.....	9,463	31.1	2.2	51.0	17.4	33.7	17.4	13.5	.5
1962.....	10,377	29.6	1.8	52.0	17.2	34.8	18.8	13.6	.4
1963 ²	11,444	29.4	1.9	52.3	16.4	35.9	17.9	13.8	.4
Women:									
1953.....	792	35.2	5.1	26.9	17.2	9.7	37.5	31.1	.4
1954.....	815	39.0	5.9	24.3	14.8	9.4	36.0	32.0	.7
1955.....	826	37.7	5.2	23.6	16.0	7.6	36.4	30.1	.4
1956.....	886	41.2	5.6	22.5	14.7	8.8	34.4	28.8	.9
1957.....	939	40.7	5.0	22.8	13.7	9.1	35.9	28.1	.6
1958.....	964	36.7	6.7	24.5	15.7	8.8	38.0	32.7	.8
1959.....	989	43.0	6.0	21.5	12.9	8.6	35.2	28.7	.3
1960.....	1,028	44.4	6.4	21.2	13.1	8.1	34.1	27.5	.3
1961.....	1,112	42.9	5.5	21.7	13.3	8.4	34.9	28.6	.6
1962.....	1,245	43.1	5.7	22.9	13.7	9.2	33.2	26.6	.9
1963 ²	1,374	41.8	4.5	24.5	14.1	10.3	33.0	26.8	.7

¹ Includes Ph. D., Ed. D., etc., but not first-professional degrees, such as M. D. and D. D. S.² 1963 data were not available at the time the projections were made.

Table 20.—Percentage distribution of total doctor's degrees,¹ in life sciences, engineering, mathematics, and physical sciences: United States and outlying areas, 1953-63

Year ending June 30	Number of doctor's degrees, all fields	Basic and applied sciences							
		Total (per- cent)	Life sciences ^a			Engineering, mathematics, and physical sciences			
			Total (per- cent)	Health profes- sions (per- cent)	Biologi- cal sciences (per- cent)	Total (per- cent)	Engi- neering (per- cent)	Mathes- matics (per- cent)	Physical sciences (per- cent)
Men and Women:									
1953...	8,309	49.0	19.2	1.8	11.6	20.8	6.9	2.9	20.0
1954...	8,996	48.2	20.1	2.2	12.2	24.1	6.6	2.5	18.9
1955...	8,840	48.1	19.1	2.1	11.3	20.0	6.8	2.8	19.4
1956...	8,943	45.8	17.6	1.6	11.5	28.2	6.9	2.6	18.7
1957...	8,756	47.2	18.4	1.7	12.6	28.8	6.8	2.8	19.1
1958...	8,942	46.7	18.2	1.6	12.6	28.5	7.2	2.8	18.5
1959...	9,360	47.0	17.0	1.6	11.1	30.0	7.6	3.0	19.4
1960...	9,829	47.8	18.0	1.1	12.3	29.8	8.0	3.1	18.7
1961...	10,575	47.9	16.9	1.3	11.3	31.0	8.9	3.3	18.8
1962...	11,622	48.9	16.9	1.3	11.6	32.1	10.4	3.4	18.3
1963 ¹	12,822	49.3	16.2	1.2	11.4	33.1	10.7	3.8	18.6
Men:									
1953...	7,517	51.3	19.4	1.9	11.3	31.9	7.6	3.0	21.2
1954...	8,181	50.6	20.7	2.3	12.1	30.0	7.3	2.6	20.1
1955...	8,014	50.7	19.5	2.0	11.2	31.2	7.6	3.0	20.8
1956...	8,038	48.3	17.9	1.7	11.3	30.4	7.6	2.8	19.9
1957...	7,817	50.1	18.9	1.8	12.7	31.2	7.6	3.0	20.5
1958...	7,978	49.4	18.5	1.8	12.4	30.9	8.1	2.9	19.9
1959...	8,371	50.0	17.5	1.7	11.2	32.6	8.5	3.2	20.9
1960...	8,801	50.9	18.6	1.1	12.4	32.3	8.9	3.2	20.2
1961...	9,463	51.0	17.4	1.4	11.2	33.7	9.9	3.5	20.3
1962...	10,377	52.0	17.2	1.3	11.4	34.8	11.6	3.6	19.6
1963 ¹	11,448	52.3	16.4	1.3	11.2	35.9	11.9	4.0	20.0
Women:									
1953...	792	26.9	17.2	1.6	14.9	9.7	1.1	1.8	7.8
1954...	815	24.3	14.8	1.5	12.5	9.4	0.1	1.7	7.7
1955...	826	23.6	16.0	3.0	12.0	7.6	0.1	1.3	6.3
1956...	885	23.5	14.7	8.1	13.2	8.8	0.1	1.1	7.7
1957...	939	22.8	13.7	7.1	11.9	9.1	1.1	1.4	7.6
1958...	964	24.5	15.7	7.1	14.5	8.8	4.1	1.6	6.8
1959...	980	21.5	12.9	8.1	11.3	8.6	1.1	1.5	7.0
1960...	1,028	21.2	13.1	8.1	11.6	8.1	3.1	1.8	6.0
1961...	1,112	21.7	13.3	4.1	12.6	8.4	5.1	1.5	6.3
1962...	1,245	22.9	13.7	7.1	12.8	9.2	3.1	1.9	7.0
1963 ¹	1,374	24.5	14.1	7.1	12.8	10.3	8.1	2.6	6.9

¹ Includes Ph.D., Ed.D., etc., but not first-professional degrees, such as M.D. and D.D.S.² 1963 data were not available at the time the projections were made.



Appendix A. Historical Series of Degrees by Level and by Field of Study

Part 1. *Classification of Fields of Study*

Table A contains a list of the fields of study for which data were obtained in the Office of Education's annual surveys of *Earned Degrees Conferred* from 1955-56 through 1961-62. In the surveys prior to 1955-56 data were secured for a much more limited number of fields. The list is arranged according to the classification employed in making the present projections of degrees by field.

Table A

Classification of Fields of Study

I. ARTS, HUMANITIES, AND SOCIAL SCIENCES

English and journalism

English ¹

Journalism ¹

Fine arts (including architecture)

Architecture ¹

Music ¹

Music education

Music, including sacred music

Speech and dramatic arts ¹

Speech correction

Speech and dramatic arts

Fine and applied arts, all other ¹

Art education

Art, general

Fine and applied arts, other specific major fields

Fine and applied arts, not further classified

Foreign languages

Classical languages ¹

French ¹

German ¹

Russian or other Slavic languages ¹

Spanish ¹

Philology and foreign languages, all other ¹

Linguistics

¹ Reported prior to 1955-56.

EARNED DEGREES

- Chinese
- Japanese
- Philology and literature of Germanic languages
- Philology and literature of Romance languages
- Arabic
- Other Germanic languages
- Hebrew
- Hindi and/or Urdu
- Italian
- Portuguese
- Teaching English as a foreign language
- Other languages or language programs
- Philosophy and religion (excluding theology)
 - Philosophy ¹
 - Scholastic philosophy
 - Religious education and Bible ¹
 - Religion, all other
 - Religion—liberal arts curriculum, nonsectarian
 - Religion, all other
- Social sciences (excluding social work)
 - Anthropology ¹
 - Economics
 - Agricultural economics
 - Economics ¹
 - Geography ¹
 - History
 - American civilization, American culture
 - History ¹
 - International relations ¹
 - Political science ¹
 - Psychology ¹
 - Public administration ¹
 - Sociology ¹
 - Social sciences, all other ¹
 - Social sciences, general
 - Area studies
 - Basic social sciences, all other
 - Foreign service programs
 - Industrial relations
 - Applied social sciences, all other

II. BASIC AND APPLIED SCIENCES

1. Life Sciences

Agriculture

- Animal husbandry ¹
 - Animal, dairy, and poultry husbandry
- Agriculture, except animal husbandry ¹
 - Agronomy
 - Dairy manufacturing
 - Farm management
 - Food technology

¹ Reported prior to 1965-66.

- Horticulture
 - Ornamental horticulture
 - Soils
 - Agriculture, other specific major fields
 - Agriculture, general
 - Agriculture, not further classified
 - Agricultural education
- Forestry ¹
- Biological sciences
 - Anatomy ¹
 - Bacteriology ¹
 - Biochemistry ¹
 - Biology, general ¹
 - Botany, general
 - Botany, general ¹
 - Plant pathology
 - Plant physiology
 - Entomology ¹
 - Physiology ¹
 - Zoology, general ¹
 - Biological sciences, all other
 - Premedical, pre dental, and preveterinary sciences
 - Biophysics
 - Genetics
 - Optometry (preprofessional bachelor's degrees)
 - Pathology
 - Pharmacology
 - Biological sciences, all other ¹
 - One-half of degrees reported under Sciences, general program, (without major field) ¹
- Health professions
 - Dentistry, D.D.S. and D.M.D. only ¹
 - Medicine, M.D. only ¹
 - Nursing ¹
 - Optometry ¹
 - Osteopathy ¹
 - Pharmacy ¹
 - Public health ¹
 - Veterinary medicine, D.V.M. only ¹
 - Health professions, all other
 - Chiropody
 - Dental hygiene
 - Hospital administration
 - Medical technology
 - Occupational therapy
 - Physical therapy
 - Radiologic technology
 - Clinical dental, medical, and veterinary medical sciences, advanced degrees only
 - Health professions, all other
- 2. Engineering, Mathematics, and Physical Sciences
 - Engineering ¹

¹ Reported prior to 1966-66.

EARNED DEGREES

Mathematics

Mathematics ¹

Statistics

Physical sciences

Astronomy ¹Chemistry ¹

Geology

Geology ¹

Geophysics

Meteorology ¹Physics ¹

Physical sciences, all other

Physical sciences, general

Metallurgy ¹

Oceanography

Earth sciences, all other

Physical sciences, not classifiable above ¹One-half of degrees reported under Sciences, general program, (without major field) ¹

III. OTHER PROFESSIONAL FIELDS

Business and commerce

Accounting ¹Business and commerce, except accounting ¹

Hotel and restaurant administration

Secretarial studies

Business and commerce, other specific major fields

Business and commerce, general

Business and commerce, not further classified

Business education, commercial education

Distributive education

Education (excluding education in subject fields listed elsewhere)

Education ¹

Education of exceptional children

Education of mentally retarded

Specialized teaching fields, all other

Nursery and/or kindergarten education

Early childhood education

Elementary education

Secondary education

Combined elementary and secondary education

Adult education

Other general teaching fields

Counseling and guidance

Education, general

Other nonteaching fields

Education, preprofessional bachelor's degrees only

Education, not further classified

Industrial arts ¹

Industrial arts education

Trade and industrial education

¹ Reported prior to 1966-68.

- Physical education ¹
 - Physical education
 - Health education
 - Recreation
- Home economics ¹
 - Home economics education
 - Home economics, general
 - Child development
 - Clothing and textiles
 - Foods and nutrition
 - Institution management
 - Home economics, other specific major fields
 - Home economics, not further classified
- Law ¹
- Library science ¹
- Military, Naval, or Air Force science
 - Merchant Marine, deck officer curriculum only
 - Military, Naval, or Air Force science ¹
- Social work ¹
- Theology ¹
 - Theology, first-professional degree
 - Theology, master's and doctor's degrees

IV. MISCELLANEOUS AND UNCLASSIFIED FIELDS

- Arts, general program (without major field) ¹
- Arts and sciences, general program
- All other fields ¹
 - Trade and industrial training
 - Major fields not classifiable above
 - Major field not identified

Part 2. *Limitations of Data*

In addition to the problem of telescoping the many subject fields reported in 1961-62 into the fewer categories used prior to 1955-56, there were problems of comparability to overcome.

Education.—Since 1955-56 degrees in the teaching of a few subjects have been reported separately from the subject itself; for example, "Music education" is distinguished from "Music." These education degrees have been combined with the subject itself in the subject-field allocation not only because this is necessary to preserve continuity with data before 1955-56, but also because such distinctions have never been made in most subjects (for example, English, mathematics, etc.). The combinations have been made in the following fields: Agricultural education, art education, business and commercial education, distributive education, music education, and speech correction.

Engineering.—The figures reported for engineering are those shown in the circulars on earned degrees. Engineering degrees are also reported in a series of publications on *Engineering Enrollments*

¹ Reported prior to 1965-66.

and Degrees which give a detailed breakdown of the special fields within engineering. In the years before 1954-55 there were minor differences in the total number of engineering degrees listed by these two reports because the questionnaire on engineering degrees was not sent to the same persons nor at the same time as the questionnaire covering degrees in all fields.

Library science and social work.—In many institutions the first-professional degree is the master's degree. Reported in the beginning as second-level degrees, such degrees have been reported as first-level degrees (which includes first-professional degrees) since 1953-54.

Metallurgy.—In recent years degrees in metallurgy (which is carried under physical sciences, all other) have been clearly distinguished from degrees in metallurgical engineering (carried under engineering). Prior to 1953-54, however, the degrees reported in metallurgy included both fields. For these earlier years all the metallurgy degrees were assigned to engineering because study of the data shows that the majority of these degrees were in metallurgical engineering. The number of metallurgy degrees involved was relatively small.

Philosophy.—In the 1955-56 revision of the questionnaire, the single category philosophy was split into two categories, philosophy and scholastic philosophy. The two new categories are not completely consistent with the previous category, either singly or in combination.

Science degrees.—In compiling complete science totals, the degrees reported since 1955-56 in the category "science, general program without major" have been arbitrarily divided equally between the categories "biological sciences, all other" and "physical sciences, all other". Prior to 1955-56, however, a greater number of degrees was reported in this category. Other miscellaneous science categories also were employed at one time or another. These miscellaneous science degrees have been assigned to the listed categories "biological sciences, all other," "physical sciences, all other," and "health professions, all other," in such proportions as to preserve continuity.

For higher level degrees the problems are simpler since the numbers are much smaller. The few second- and third-level degrees in "sciences, general program without major" and "natural sciences, NEC" were arbitrarily divided equally between "biological sciences, all other" and "physical sciences, all other". The second- and third-level degrees in "medical sciences, NEC" were kept in "health professions, all other".

Part 3. *Degrees by Level*

The three levels of degrees used in the projections correspond to those used in the annual survey of earned degrees prior to 1960-61. These levels are defined as follows:

First-level degrees.—This level includes the usual bachelor's degrees received at the end of 4 years of college and also includes first-professional degrees such as M.D. (medicine), D.D.S. (dentistry), D.V.M. (veterinary medicine), LL.B. (law), B.D. (theology), M.L.S. (library science), and M.S.W. (social work), many of which are preceded by other degrees.

Second-level degrees. This level includes all master's degrees except for the few that are first-professional degrees. It also includes second-level professional degrees, as in medicine (advanced clinical degrees), law, and theology.

Doctor's degrees. This level includes Ph. D., Ed. D., and other earned doctorates, but not first-professional doctorates as in medicine (M.D.), dentistry (D.D.S.), and veterinary medicine (D.V.M.).

Appendix B. Methodology

Part 1. *Projection of Total Earned Degrees by Level and Sex*

The total degree projections by level on which projections by subject field were based are shown in table 1 of the text. The following data were utilized in making the basic projections: (1) Estimated July 1 population data by sex and by single years of age, 1940 through 1975, supplied by the Bureau of the Census; (2) opening fall first-time degree-credit enrollments, collected annually by the Office of Education, beginning in 1946; and (3) the number of bachelor's, master's, and doctor's degrees conferred, collected annually by the Office of Education beginning in 1947-48 and biennially prior to 1947-48.

All computations and projections were done separately for each sex and were based on data from 48 States and the District of Columbia. Projections for noncontiguous States and outlying parts were done separately and combined with those for the contiguous States to give projections for the United States and outlying areas.

The steps in making the projections were as follows:

1. Population age-groups corresponding to the age composition of first-year college enrollees as reported by the 1950 decennial census were computed for each year from 1940 through 1970.
2. Time-lag between the different series was determined empirically to be as follows:
 - a. Population age-group and first-time enrollment, 0 years.
 - b. Population age-group and BA degrees, 4 years.
 - c. Population age-group and MA degrees, 5 years.
 - d. Population age-group and doctor's degrees, 8 years using middle year of 3-year-average of population age-groups.

All other time-lag relationships were made dependent on these.

3. Ratios for each observed year were computed using the specified time-lag relationships. For example, doctor's degrees in 1952-53 were related to an average of the population age-groups for the years 1944, 1945, and 1946.

The related series with specified time-lag for which ratios were computed were as follows:

- a.
$$\frac{\text{First-time enrollment}}{\text{Age-group, same year}}$$

$$\frac{\text{BA degrees}}{\text{Age-group, 4 years earlier}}$$

$$\frac{\text{MA degrees}}{\text{Age-group, 5 years earlier}}$$

$$\frac{\text{Doctor's degrees}}{\left(\frac{\text{Age-group, 7+8+9 years earlier}}{3}\right)}$$
- b.
$$\frac{\text{BA Degrees}}{\text{First-time enrollment, 4 years earlier}}$$

$$\frac{\text{MA degrees}}{\text{First-time enrollment, 5 years earlier}}$$

$$\frac{\text{Doctor's degrees}}{\left(\frac{\text{First-time enrollment, 7+8+9 years earlier}}{3}\right)}$$
- c.
$$\frac{\text{MA degrees}}{\text{BA degrees, 1 year earlier}}$$

$$\frac{\text{Doctor's degrees}}{\left(\frac{\text{BA degrees, 3+4+5 years earlier}}{3}\right)}$$
- d.
$$\frac{\text{Doctor's degrees}}{\left(\frac{\text{MA degrees, 2+3+4 years earlier}}{3}\right)}$$

4. Each of the above series of ratios was plotted on separate graphs and fitted with empirical curves which were extrapolated to 1975.

5. The extrapolated ratios based on population (listed in 3a above) were read from the graphs and applied to the estimated population age-groups for corresponding years to obtain a projection of first-time enrollment, BA degrees, MA degrees, and doctor's degrees through 1975.

6. From these projections based on population, ratios were computed (observing the previously determined time-lag) as follows:

BA	MA	Doctor's	MA	Doctor's	Doctor's
First-time	First-time	First-time	BA	BA	MA

7. The ratios listed in 6 above were plotted on the corresponding graphs listed in 3b, 3c, and 3d and compared to the extrapolated curves (4 above). If this comparison with the extrapolated past trend showed irregularities or contradictions, adjustments were made in the extrapolated curves and if necessary, the projections in 5 above recalculated.

In particular, where degrees could be based on enrollment already known, the population curves were adjusted in line with enrollment ratios.

The process outlined in 5, 6, and 7 was continued until all the curves showed a satisfactory relationship.

In making the adjustments some of the assumptions and considerations employed were:

(1) Rapidly rising ratios are subject to a leveling-off process over a period of time; (2) all degrees show a rising relationship with population and with each lower level degree in the period 1950 to 1962; (3) first-time enrollments have been rising faster than degrees at any level. There are two factors which appear to be at least partly responsible for this last phenomenon: First, part-time enrollments as a proportion of all enrollments are rising; secondly, junior-college enrollments are increasing faster than 4-year college enrollments. While all junior-college enrollments included in total fall first-time degree-credit enrollments carry transfer credit, it is likely that a smaller proportion of students who enter junior college obtain degrees than do students who enroll in 4-year colleges.

Part 2. *Projection of Earned Degrees by Subject Field*

The following data collected by the Office of Education were utilized in making the projections by subject field: (1) the number of degrees conferred by level, sex, and subject field each year 1953 through 1962; (2) junior-year enrollments in science, mathematics, and foreign languages, fall 1957 through 1960, and 1962; (3) enrollments for advanced degrees, fall 1959 through 1962; (4) engineering enrollments and degrees each year 1953 through 1962.

Trend projection of degrees by subject field.—The projection of degrees by subject field for each level and sex, with the exception of bachelor's degrees in engineering for men, was based on the proportion in each year, 1953 through 1962, that each subject field within a given level and sex category was of the total of such degrees. These proportions expressed as percentages are shown in tables 15 through 20.

A straight-line equation or a suitable log transformation of a straight-line equation was fitted to each of these 1953-62 series of data and extrapolated to 1975.

The resulting percentages in each subject field for each year, level, and sex were applied to total degrees for the corresponding year, level, and sex in order to obtain degree projections.

These preliminary projections were adjusted to comply with the following restrictions:

1. Approximate agreement of bachelor's degrees with estimates for 1964 made from junior-year enrollments in science, mathematics, and foreign languages.
2. Approximate agreement with estimates of doctor's degrees in 1964 made from enrollment by subject field for advanced degrees.
3. Agreement of total of degrees in individual subject-fields within a given year, level, and sex with total degrees for the corresponding year, level, and sex.

Trend projection of first-level degrees in engineering for men.—Since data are available on enrollment by level, in the field of engineering the trend projection of bachelor's degrees in engineering was based

on these data. In making this projection two assumptions were made. The first assumption was that the ratio of first-year engineering enrollments to all first-time enrollments would remain constant at the fall 1962 level of .11 until 1975. Although this ratio declined from 1957 to 1962, a leveling off near the 1962 rate is considered to be a reasonable assumption. It should be noted that if this assumption proves to be incorrect the number of first-level degrees based upon enrollments will not be affected until June 1966. The second assumption was that the ratio of bachelor's degrees in engineering to first-year enrollments in engineering schools four years earlier would remain constant at the June 1962 level of .50 until 1975. The ratio of graduates to first-year engineering school students declined from .54 in 1958 to .45 in 1961 but rose to .50 in 1962. It is conceivable that the rate may continue to rise rather than remain constant as assumed. If it should rise to the 1958 level of .54, the highest rate attained since the number of veterans ceased to be a factor in retention, the increase in the number of degrees would not exceed the trend projection by more than 4,500 in 1975.

The 1962 ratio of first-year engineering enrollments to total first-time enrollments (.11) was applied to projected total first-time enrollments in order to obtain projections of first-year engineering enrollments to 1975. The 1962 ratio of bachelor's degrees in engineering to first-year enrollments four years earlier (.50) was then applied to the actual and projected first-year engineering enrollments in order to obtain projections of first-level degrees in engineering to 1975.

