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ABSTRACT

Tabular data on Ph.D.'s earned by graduates of baccalaureate colleges and universities are presented for 50 top institutions, the 8 Ivy League universities, the "Big Ten" universities, 12 leading technical institutions, and colleges belonging to the Great Lakes Colleges Association and the Associated Colleges of the Midwest. The Ph.D's were conferred during 1951-1980 to students who earned bachelor's degrees during 1946-1976. Included are overall totals and subtotals by field (humanities, science, empirical science, life science, and social science). Using statistics from the National Research Council and the National Center for Education Statistics, institutional productivity ratios were adjusted for institutional size. A brief narrative summary provides highlights, including: high productivity ratios for a few leading technical institutions, high productivity of small liberal arts colleges, and high productivity in both science and humanities at four liberal arts colleges. Appended are information on the research methodology, data on the average number of bachelor's degrees conferred and the number of years for which data were available, and group data (e.g, the average number of Ph.D.'s per year for each institution in each group). (SW)

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Carol H. Fuller

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A Report Prepared for the Great Lakes Colleges Association
June 1985

**An Analysis of Leading Undergraduate Sources
of Ph.D.'s, Adjusted for Institutional Size**

Carol H. Fuller

**A Report Prepared for the
Great Lakes Colleges Association
220 Collingwood, Suite 240
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June 1985

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DESCRIPTION OF THE STUDY

The numbers of baccalaureate graduates of colleges and universities who go on to earn a Ph.D. have been collected and periodically published by the National Research Council as one measure of institutional productivity. This list is, predictably, dominated by the larger universities, most of which award thousands of bachelor's degrees annually.

A separate list, comparing only undergraduate colleges in the total numbers of their graduates who have earned Ph.D.'s, has been published by Franklin and Marshall College since 1978.

We became intrigued by the kinds of comparisons which could be made if one took account of institutional size, that is, if one examined not only the **number** of an institution's graduates who earned a Ph.D., but also the **percentage** of its graduates who did so. An initial attempt at such comparisons was made and published by Professor Alfred Hall of the College of Wooster (*Change*, April 1984, pp. 40-43). Hall used data from several years over the period 1920-1980 to construct an "index of productivity." This study broadens and refines Hall's work, comparing institutional productivity based on the average number of baccalaureates awarded and the average number of Ph.D.'s earned by graduates of all accredited institutions during the years between 1951 and 1980.

The comparisons of Ph.D. productivity made possible by this study, because it takes account of institutional size, are interesting in themselves, and may be useful to government agencies and to foundations in selecting institutions for the investment of grant funds. Prospective students and parents may also find these comparative data helpful in assessing various choices for baccalaureate study. Professional academics who are intrigued by most comparative rankings of institutions will find in these assessments of institutional productivity a new focus for their interest.

The research for this study was sponsored by the Great Lakes Colleges Association. The research was supported, in part, by a grant from the Lilly Endowment.

The National Research Council provided data for Ph.D.'s earned, by graduates of baccalaureate institutions, from 1951-1980, with overall totals, subtotals by field, and separate tabulations for men and women. These Ph.D. data were used, along with baccalaureate data produced by the National Center for Educational Statistics, to produce institutional productivity ratios. The results are reported in the tables which follow. (For a more complete description of the process by which these data were derived, see Appendix A, "Description of Methodology.")

When one looks at Ph.D.'s earned in all fields, the productivity of a few leading technical institutions is striking. Very large proportions of the undergraduates at Harvey Mudd, Cal Tech, and MIT have gone on to earn Ph.D.'s—more than one in five during the years covered by this study. Only a few liberal arts colleges—Reed, Swarthmore, Haverford, and Oberlin—match the productivity ratios of these major technical institutions.

As one goes down the list of the most productive institutions (Tables 1A and 1B), the impressive achievements of the best undergraduate liberal arts colleges are notable. Liberal arts colleges constitute half of the top 50 institutions. These colleges were of particular interest to the author and sponsor of the study, and so some group comparisons were also made. The twelve liberal arts colleges of the Great Lakes Colleges Association (GLCA) were compared with the eight universities of the Ivy League, and the GLCA colleges proved to be more productive during the period covered by this study (see Tables 8A and B and 10A and B). The GLCA colleges, and those of the Associated Colleges of the Midwest, were also compared to the leading universities of their region, the Big Ten, and again the small liberal arts colleges were more productive (see Tables 8A and B, 9A and B, and 11A and B).

There are some variations in the rankings when one compares productivity of Ph.D.'s in various fields. For science Ph.D.'s, the leading technical institutions are even more productive, with a significant number of liberal arts colleges also in that top 50 (Table 3A). Those technical institutions disappear from the list comparing productivity of Ph.D.'s in the Humanities, but liberal arts colleges which ranked high in the science list—Reed, Haverford, Swarthmore, Oberlin—are also among the most productive for Humanities (see Table 2).

Those interested in data for particular institutions may consult Appendix B, which serves as an index to the various tables on which each institution is listed.

As a further indication of the new insights about Ph.D. productivity made possible when one takes account of institutional size, it is interesting to compare the more familiar list of top institutions in total numbers of Ph.D.'s earned by their baccalaureate graduates (Table 7) with the list of top 50 in productivity adjusted for institutional size (Table 1). Only 10 institutions ranking among the top 50 in total numbers are also on the top 50 list when institutional size is taken into account.

In presenting this analysis, we hope that it will demonstrate both the possibility and the utility of productivity comparisons which take account of differences in institutional size. Comparative studies might be undertaken of the baccalaureate origins of leading corporate executives, political leaders, winners of various prizes and recognitions, and people with a special commitment to service, such as Peace Corps volunteers. We believe that such comparisons will add to our understanding of the effects of baccalaureate education, and of the comparative strengths of various institutions and groups of institutions.

TABLES

Table 1A

Ph.D. Productivity

Ph.D.'s Conferred, 1951-1980/Bachelor's Degrees Conferred, 1946-1976

Top 50 Institutions: All Fields

<u>Institution</u>	<u>All Ph.D.'s</u>		<u>Humanities Ph.D.'s</u>		<u>Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Harvey Mudd (CA)	257	40.7	5	0.8	247	39.1
California Institute of Technology	1818	40.0	17	0.4	1781	39.2
Reed (OR)	968	25.3	154	4.0	766	20.0
Massachusetts Institute of Technology	5438	20.9	114	0.4	5141	19.8
Swarthmore (PA)	1418	20.9	350	5.2	975	14.4
Haverford (PA)	683	18.8	196	5.4	415	11.4
Oberlin (OH)	2321	17.8	666	5.1	1347	10.3
New College of the U. of South Florida	63	16.1	13	3.3	48	12.2
Chicago (IL)	3895	15.6	781	3.2	2592	10.6
UC-San Diego (CA)	362	14.1	28	1.1	325	12.6
Amherst (MA)	1118	13.7	363	4.5	642	7.9
Carleton (MN)	993	13.7	253	3.5	631	8.7
Cooper Union (NY)	602	13.7	3	0.1	586	13.4
Pomona (CA)	1066	13.7	224	2.9	713	9.2
Brandeis (MA)	893	13.5	218	3.3	578	8.7

Top 50 Institutions: All Fields (continued)

	<u>All Ph.D.'s</u>		<u>Humanities Ph.D.'s</u>		<u>Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Wabash (IN)	501	12.9	105	2.7	324	8.4
Rice (TX)	1501	12.4	229	1.9	1192	9.9
Webb Institute (NY)	52	12.4	1	0.2	47	11.2
Wesleyan (CT)	877	12.4	255	3.6	511	7.2
Bryn Mawr (PA)	593	12.0	282	5.7	276	5.6
Princeton (NJ)	2713	11.7	741	3.2	1765	7.6
Grinnell (IA)	706	11.4	168	2.7	450	7.3
UC-Irvine (CA)	299	11.3	37	1.4	253	9.5
Eckerd (FL)	119	11.2	33	3.1	77	7.2
Antioch (OH)	875	11.0	131	1.7	620	7.8
UC-Riverside (CA)	897	11.0	126	1.5	709	8.7
St. John's (MD)	117	10.4	55	4.9	49	4.4
Wooster (OH)	868	10.4	190	2.3	517	6.2
Radcliffe (MA)	923	10.2	357	3.9	469	5.2
Davidson (NC)	599	9.9	179	2.9	306	5.0
Williams (MA)	835	9.8	255	3.0	507	6.0
New School (NY)	99	9.7	30	2.9	57	5.6
Barnard (NY)	1163	9.5	426	3.5	590	4.8

Top 50 Institutions: All Fields (continued)

	<u>All Ph.D.'s</u>		<u>Humanities Ph.D.'s</u>		<u>Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Hamilton (NY)	507	9.4	181	3.3	255	4.7
Kalamazoo (MI)	427	9.3	70	1.5	307	6.7
Earlham (IN)	476	9.1	87	1.7	308	5.9
Harvard (MA)	5554	9.0	1551	2.5	3527	5.7
Rensselaer Polytechnic Institute (NY)	1929	9.0	26	0.1	1819	8.5
Bowdoin (ME)	578	8.8	156	2.4	345	5.3
UC-Santa Cruz (CA)	262	8.8	59	2.0	192	6.5
Cornell (NY)	5329	8.8	595	1.0	4213	7.0
Johns Hopkins (MD)	1524	8.7	204	1.2	1207	6.9
CUNY: City C. (NY)	6893	8.6	797	1.0	4990	6.2
Rochester (NY)	2056	8.4	483	2.0	1288	5.3
Wellesley (MA)	1002	8.4	390	3.3	461	3.9
Yale (CT)	3407	8.4	1085	2.7	1996	4.9
Brown (RI)	1977	8.3	405	1.7	1388	5.8
Carnegie-Mellon (PA)	1678	8.3	90	0.4	1422	7.0
Occidental (CA)	780	8.2	134	1.4	464	4.9
Kenyon (OH)	348	7.9	120	2.7	202	4.6
Group	70269	11.0	13418	2.0	49890	7.9

Table 13

Science Ph.D. Productivity

Ph.D.'s Conferred, 1951-1980/Bachelor's Degrees Conferred, 1946-1976

Top 50 Institutions: All Fields

<u>Institution</u>	<u>Empirical Science Ph.D.'s</u>		<u>Life Science Ph.D.'s</u>		<u>Social Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Harvey Mudd (CA)	217	34.4	18	2.9	12	1.9
California Institute of Technology	1531	33.7	173	3.8	77	1.7
Reed (OR)	334	8.7	154	4.0	278	7.3
Massachusetts Institute of Technology	4461	17.1	375	1.4	305	1.2
Swarthmore (PA)	351	5.2	209	3.1	415	6.1
Haverford (PA)	178	4.9	94	2.6	143	3.9
Oberlin (OH)	459	3.5	251	1.9	637	4.9
New College of the U. of South Florida	16	4.1	10	2.6	22	5.6
Chicago (IL)	1011	4.1	510	2.1	1071	4.4
UC-San Diego (CA)	143	5.6	134	5.2	48	1.9
Amherst (MA)	264	3.2	150	1.8	228	2.8
Carleton (MN)	287	4.0	139	1.9	205	2.8
Cooper Union (NY)	550	12.5	17	0.4	19	0.4
Pomona (CA)	288	3.7	190	2.4	235	3.0
Brandeis (MA)	115	1.7	133	2.0	330	5.0

Top 50 Institutions: All Fields (continued)

	<u>Empirical Science Ph.D.'s</u>		<u>Life Science Ph.D.'s</u>		<u>Social Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Wabash (IN)	134	3.5	112	2.9	78	2.0
Rice (TX)	886	7.3	162	1.3	144	1.2
Webb Institute (NY)	46	11.0	0	0.0	1	0.2
Wesleyan (CT)	187	2.6	91	1.3	233	3.3
Bryn Mawr (PA)	71	1.4	87	1.8	118	2.4
Princeton (NJ)	1051	4.5	218	0.9	496	2.1
Grinnell (IA)	153	2.5	99	1.6	198	3.2
UC-Irvine (CA)	79	3.0	123	4.6	51	1.9
Eckerd (FL)	19	1.8	17	1.6	41	3.9
Antioch (OH)	171	2.2	121	1.5	328	4.1
UC-Riverside (CA)	283	3.5	211	2.6	215	2.6
St. John's (MD)	22	2.0	9	0.8	18	1.6
Wooster (OH)	247	3.0	111	1.3	159	1.9
Radcliffe (MA)	69	0.8	105	1.2	295	3.3
Davidson (NC)	146	2.4	48	0.8	112	1.8
Williams (MA)	243	2.9	75	0.9	189	2.2
New School (NY)	1	0.1	0	0.0	56	5.5
Barnard (NY)	86	0.7	141	1.1	363	3.0

Top 50 Institutions: All Fields (continued)

	<u>Empirical Science Ph.D.'s</u>		<u>Life Science Ph.D.'s</u>		<u>Social Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Hamilton (NY)	100	1.8	44	0.8	111	2.0
Kalamazoo (MI)	144	3.1	91	2.0	72	1.6
Earlham (IN)	102	2.0	124	2.4	82	1.6
Harvard (MA)	1590	2.6	574	0.9	1363	2.2
Rensselaer Polytechnic Institute (NY)	1568	7.3	148	0.7	103	0.5
Bowdoin (ME)	164	2.5	70	1.1	111	1.7
UC-Santa Cruz (CA)	42	1.4	68	2.3	82	2.8
Cornell (NY)	1846	3.1	1372	2.3	995	1.7
Johns Hopkins (MD)	652	3.7	292	1.7	263	1.5
CUNY: City C. (NY)	2343	2.9	697	0.9	1950	2.4
Rochester (NY)	637	2.6	272	1.1	379	1.5
Wellesley (MA)	68	0.6	124	1.0	269	2.3
Yale (CT)	915	2.3	323	0.8	758	1.9
Brown (RI)	667	2.8	254	1.1	467	2.0
Carnegie-Mellon (PA)	1217	6.0	71	0.4	134	0.7
Occidental (CA)	169	1.8	78	0.8	217	2.3
Kenyon (OH)	81	1.8	51	1.2	70	1.6
Group	26404	4.0	8940	1.6	14546	2.3

Table 2

Ph.D. Productivity

Ph.D.'s Conferred, 1951-1980/Bachelor's Degrees Conferred, 1946-1976

Top 50 Institutions: Humanities

<u>Institution*</u>	<u>All Ph.D.'s</u>		<u>Humanities Ph.D.'s</u>		<u>Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Bryn Mawr (PA)	593	12.0	282	5.7	276	5.6
Haverford (PA)	683	18.8	196	5.4	415	11.4
Swarthmore (PA)	1418	20.9	350	5.2	975	14.4
Oberlin (OH)	2321	17.8	666	5.1	1347	10.3
St. John's (MD)	117	10.4	55	4.9	49	4.4
Amherst (MA)	1118	13.7	363	4.5	642	7.9
Reed (OR)	968	25.3	154	4.0	766	20.0
Peabody Institute (MD)	40	4.6	34	3.9	1	0.1
Radcliffe (MA)	923	10.2	357	3.9	469	5.2
Juilliard (NY)	152	5.7	96	3.6	7	0.3
Wesleyan (CT)	877	12.4	255	3.6	511	7.2
Barnard (NY)	1163	9.5	426	3.5	590	4.8
Carleton (MN)	993	13.7	253	3.5	631	8.7
Brandeis (MA)	893	13.5	218	3.3	578	8.7
Hamilton (NY)	507	9.4	181	3.3	255	4.7
New College of the U. of South Florida	63	16.1	13	3.3	48	12.2

*Institutions are ranked by Humanities Ph.D. productivity, presented in column two.

Top 50 Institutions: Humanities (continued)

	<u>All Ph.D.'s</u>		<u>Humanities Ph.D.'s</u>		<u>Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Wellesley (MA)	1002	8.4	390	3.3	461	3.9
Chicago (IL)	3805	15.6	781	3.2	2592	10.6
Princeton (NJ)	2713	11.7	741	3.2	1765	7.6
Eckerd (FL)	119	11.2	33	3.1	77	7.2
Williams (MA)	835	9.8	255	3.0	507	6.0
Davidson (NC)	599	9.9	179	2.9	306	5.0
New School (NY)	99	9.7	30	2.9	57	5.6
Pomona (CA)	1066	13.7	224	2.9	713	9.2
U. of the South (TN)	281	6.8	117	2.8	140	3.4
Grinnell (IA)	706	11.4	168	2.7	450	7.3
Kenyon (OH)	348	7.9	120	2.7	202	4.6
Vassar (NY)	715	6.8	284	2.7	355	3.4
Wabash (IN)	501	12.9	105	2.7	324	8.4
Yale (CT)	3407	8.4	1085	2.7	1996	4.9
Harvard (MA)	5554	9.0	1551	2.5	3527	5.7
Smith (MA)	873	5.6	389	2.5	369	2.4
Agnes Scott (GA)	183	4.9	89	2.4	60	1.6
Bowdoin (ME)	578	8.8	156	2.4	345	5.3
U. of Dallas (TX)	83	6.7	30	2.4	50	4.0

Top 50 Institutions: Humanities (continued)

	<u>All Ph.D.'s</u>		<u>Humanities Ph.D.'s</u>		<u>Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Wooster (OH)	868	10.4	190	2.3	517	6.2
Bard (NY)	142	6.7	44	2.1	85	4.0
Sarah Lawrence (NY)	174	4.8	76	2.1	71	2.0
Wheaton (IL)	957	7.7	264	2.1	382	3.1
UC-Santa Cruz (CA)	262	8.8	59	2.0	192	6.5
Mount Holyoke (MA)	642	6.3	263	2.0	365	3.6
U. of Rochester (NY)	2056	8.4	483	2.0	1288	5.3
Dartmouth (NH)	1771	7.8	437	1.9	1109	4.9
Middlebury (VT)	587	6.3	181	1.9	304	3.2
Rice (TX)	1501	12.4	229	1.9	1192	10.0
Birmingham-Southern (AL)	395	7.1	100	1.8	174	3.1
Hendrix (AR)	226	6.0	66	1.8	108	2.9
Southwestern (TN)	316	7.4	77	1.8	188	4.4
Trinity (CT)	482	6.3	137	1.8	280	3.7
Yeshiva (NY)	579	7.4	137	1.8	341	4.4
Group	47254	10.0	13309	2.8	28452	6.1

Table 3A

Ph.D. Productivity

Ph.D.'s Conferred, 1951-1980/Bachelor's Degrees Conferred, 1946-1976

Top 50 Institutions: All Science

<u>Institution*</u>	<u>All Ph.D.'s</u>		<u>Humanities Ph.D.'s</u>		<u>Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
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Cooper Union (NY)	602	13.7	3	0.1	586	13.4
UC-San Diego (CA)	362	14.1	28	1.1	325	12.6
New College of the U. of South Florida	63	16.1	13	3.3	48	12.2
Haverford (PA)	683	18.8	196	5.4	415	11.4
Webb Institute (NY)	52	12.4	1	0.2	47	11.2
Chicago (IL)	3805	15.6	781	3.2	2592	10.6
Oberlin (OH)	2321	17.8	666	5.1	1347	10.3
Rice (TX)	1501	12.4	229	1.9	1192	10.0
UC-Irvine (CA)	299	11.3	37	1.4	253	9.5
Pomona (CA)	1066	13.7	224	2.9	713	9.2

*Institutions are ranked by Science Ph.D. productivity, presented in column three.

Top 50 Institutions: All Science (continued)

	<u>All Ph.D.'s</u>		<u>Humanities Ph.D.'s</u>		<u>Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Brandeis (MA)	893	13.5	218	3.3	578	8.7
UC-Riverside (CA)	897	11.0	126	1.5	709	8.7
Carleton (MN)	993	13.7	253	3.5	631	8.7
Rensselaer Polytechnic Institute (NY)	1929	9.0	26	0.1	1819	8.5
Wabash (IN)	501	12.9	105	2.7	324	8.4
Amherst (MA)	1113	13.7	363	4.5	642	7.9
Antioch (OH)	875	11.0	131	1.7	620	7.8
Polytechnic Institute of New York	955	7.8	9	0.1	935	7.6
Princeton (NJ)	2713	11.7	741	3.2	1765	7.6
Grinnell (IA)	706	11.4	168	2.7	450	7.3
Eckerd (FL)	119	11.2	33	3.1	77	7.2
Wesleyan (CT)	877	12.4	255	3.6	511	7.2
Carnegie-Mellon (PA)	1678	8.3	90	0.4	1422	7.0
Cornell (NY)	5329	8.8	595	1.0	4213	7.0
New Mexico Institute of Mining	112	7.0	0	0.0	111	7.0
Johns Hopkins (MD)	1524	8.7	204	1.2	1207	6.9
Kalamazoo (MI)	427	9.3	70	1.5	307	6.7
UC-Santa Cruz (CA)	262	8.8	59	2.0	192	6.5

Top 50 Institutions: All Science (continued)

	<u>All Ph.D.'s</u>		<u>Humanities Ph.D.'s</u>		<u>Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
CUNY: City C. (NY)	6893	8.6	797	1.0	4990	6.2
SUNY: Stony Brook (NY)	692	7.2	55	0.6	597	6.2
Wooster (OH)	868	10.4	190	2.3	517	6.2
Philadelphia College of Pharmacy (PA)	256	6.1	0	0.0	252	6.0
Williams (MA)	835	9.8	255	3.0	507	6.0
Earlham (IN)	476	9.1	87	1.7	308	5.9
Franklin & Marshall (PA)	720	7.7	95	1.0	554	5.9
Brown (RI)	1977	8.3	405	1.7	1388	5.8
Harvard (MA)	5554	9.0	1551	2.5	3527	5.7
Bryn Mawr (PA)	593	12.0	282	5.7	276	5.6
New School (NY)	99	9.7	30	2.9	57	5.6
Stevens Institute (NJ)	375	5.9	2	0.0	359	5.6
Worcester Polytechnic Institute (MA)	414	5.8	2	0.0	400	5.6
Bowdoin (ME)	578	8.8	156	2.4	345	5.3
Illinois Institute of Technology	1005	5.9	28	0.7	904	5.3
U. of Rochester (NY)	2056	8.4	483	2.0	1288	5.3
Union (NY)	819	7.0	106	0.9	621	5.3
Group	66781	10.7	10786	1.7	49831	8.1

Table 3B

Science Ph.D. Productivity

Ph.D.'s Conferred, 1951-1980/Bachelor's Degrees Conferred, 1946-1976

Top 50 Institutions: All Science

<u>Institution*</u>	<u>Empirical Science Ph.D.'s</u>		<u>Life Science Ph.D.'s</u>		<u>Social Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
California Institute of Technology	1531	33.7	173	3.8	77	1.7
Harvey Mudd (CA)	217	34.4	18	2.9	12	1.9
Reed (OR)	334	8.7	154	4.0	278	7.3
Massachusetts Institute of Technology	4461	17.1	375	1.4	305	1.2
Swarthmore (PA)	351	5.2	209	3.1	415	6.1
Cooper Union (NY)	550	12.5	17	0.4	19	0.4
UC-San Diego (CA)	143	5.6	134	5.2	48	1.9
New College of the U. of South Florida	16	4.1	10	2.6	22	5.6
Haverford (PA)	178	4.9	94	2.6	143	3.9
Webb Institute (NY)	46	11.0	0	0.0	1	0.2
Chicago (IL)	1011	4.1	510	2.1	1071	4.4
Oberlin (OH)	459	3.5	251	1.9	637	4.9
Rice (TX)	886	7.3	162	1.3	144	1.2
UC-Irvine (CA)	79	3.0	123	4.6	51	1.9
Pomona (CA)	288	3.7	190	2.4	235	3.0

*Institutions are ranked by Science Ph.D. productivity, presented in column three of Table 3A.

Top 50 Institutions: All Science (continued)

	<u>Empirical Science Ph.D.'s</u>		<u>Life Science Ph.D.'s</u>		<u>Social Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Brandeis (MA)	115	1.7	133	2.0	330	5.0
UC-Riverside (CA)	283	3.5	211	2.6	215	2.6
Carleton (MN)	287	4.0	139	1.9	205	2.8
Rensselaer Polytechnic Institute (NY)	1568	7.3	148	0.7	103	0.5
Wabash (IN)	134	3.5	112	2.9	78	2.0
Amherst (MA)	264	3.2	150	1.8	228	2.8
Antioch (OH)	171	2.2	121	1.5	328	4.1
Polytechnic Institute of New York	892	7.2	26	0.2	17	0.1
Princeton (NJ)	1051	4.5	218	0.9	496	2.1
Grinnell (IA)	153	2.5	99	1.6	198	3.2
Eckerd (FL)	19	1.8	17	1.6	41	3.9
Wesleyan (CT)	187	2.6	91	1.3	233	3.3
Carnegie-Mellon (PA)	1217	6.0	71	0.4	134	0.7
Cornell (NY)	1846	3.1	1372	2.3	995	1.7
New Mexico Institute of Mining	87	5.5	23	1.4	1	0.1
Johns Hopkins (MD)	652	3.7	292	1.7	263	1.5
Kalamazoo (MI)	144	3.1	91	2.0	72	1.6
UC-Santa Cruz (CA)	42	1.4	68	2.3	82	2.8

Top 50 Institutions: All Science (continued)

	<u>Empirical Science Ph.D.'s</u>		<u>Life Science Ph.D.'s</u>		<u>Social Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
CUNY: City C. (NY)	2343	2.9	697	0.9	1950	2.4
SUNY: Stony Brook (NY)	227	2.4	149	1.5	221	2.3
Wooster (OH)	247	3.0	111	1.3	159	1.9
Philadelphia College of Pharmacy (PA)	69	1.6	182	4.3	1	0.0
Williams (MA)	243	2.9	75	0.9	189	2.2
Earlham (IN)	102	2.0	124	2.4	82	1.6
Franklin & Marshall (PA)	294	3.1	90	1.0	170	1.8
Brown (RI)	667	2.8	254	1.1	467	2.0
Harvard (MA)	1590	2.6	574	0.9	1363	2.2
Bryn Mawr (PA)	71	1.4	87	1.8	118	2.4
New School (NY)	1	0.1	0	0.0	56	5.5
Stevens Institute (NJ)	316	5.0	14	0.2	29	0.5
Worcester Polytechnic Institute (MA)	368	5.2	20	0.3	12	0.2
Bowdoin (ME)	164	2.5	70	1.1	111	1.7
Illinois Institute of Technology	756	4.5	50	0.3	98	0.6
U. of Rochester (NY)	637	2.6	272	1.1	379	1.5
Union (NY)	374	3.2	111	0.9	136	1.2
Group	28131	4.3	8682	1.6	13018	2.1

Table 4A

Ph.D. Productivity

Ph.D.'s Conferred, 1951-1980/Bachelor's Degrees Conferred, 1946-1976

Top 50 Institutions: Empirical Science

<u>Institution*</u>	<u>All Ph.D.'s</u>		<u>Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Harvey Mudd (CA)	257	40.7	247	39.1
California Institute of Technology	1818	40.0	1781	39.2
Massachusetts Institute of Technology	5438	20.9	5141	19.8
Cooper Union (NY)	602	13.7	586	13.4
Webb Institute (NY)	52	12.4	47	11.2
Reed (OR)	968	25.3	766	20.0
Rensselaer Polytechnic Institute (NY)	1929	9.0	1819	8.5
Rice (TX)	1501	12.4	1192	9.9
Polytechnic Institute of New York	965	7.8	935	7.6
Carnegie-Mellon (PA)	1678	8.3	1422	7.0
UC-San Diego (CA)	362	14.1	325	12.6
New Mexico Institute of Mining	112	7.0	111	7.0
Swarthmore (PA)	1418	20.9	975	14.4

*Institutions are ranked by Empirical Science Ph.D. productivity, presented in column one of Table 4B.

Top 50 Institutions: Empirical Science (continued)

	<u>All Ph.D.'s</u>		<u>Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Worcester Polytechnic Institute (MA)	414	5.8	400	5.6
Stevens Institute of Technology (NJ)	375	5.9	359	5.6
Colorado School of Mines	301	5.3	293	5.1
Haverford (PA)	683	18.8	415	11.4
Illinois Institute of Technology	1005	5.9	904	5.3
Princeton (NJ)	2713	11.7	1765	7.6
South Dakota School of Mines	211	4.7	208	4.7
Chicago (IL)	3805	15.6	2592	10.6
New College of the U. of South Florida	63	16.1	48	12.2
Carleton (MN)	993	13.7	631	8.7
Rose-Hulman (IN)	175	4.9	158	4.4
Lehigh (PA)	1114	5.8	965	5.0
Johns Hopkins (MD)	1524	8.7	1207	6.9
Pomona (CA)	1066	13.7	713	9.2
UC-Riverside (CA)	897	11.0	709	8.7
Oberlin (OH)	2321	17.8	1347	10.3
Wabash (IN)	501	12.9	324	8.4
Case Western Reserve (OH)	2270	6.3	1751	4.8
Amherst (MA)	1118	13.7	642	7.9

Top 50 Institutions: Empirical Science (continued)

	<u>All Ph.D.'s</u>		<u>Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Union (NY)	819	7.0	621	5.3
Cornell (NY)	5329	8.8	4213	7.0
Franklin & Marshall (PA)	720	7.7	554	5.9
Kalamazoo (MI)	427	9.3	307	6.7
UC-Irvine (CA)	299	11.3	253	9.5
Wooster (OH)	868	10.4	517	6.2
CUNY: City C. (NY)	6893	3.6	4990	6.2
Georgia Institute of Technology	1220	3.9	1079	3.4
King (TN)	93	6.8	63	4.6
Williams (MA)	835	9.8	507	6.0
Brown (RI)	1977	8.3	1388	5.8
Alfred (NY)	376	5.2	290	4.0
Harvard (MA)	5554	9.0	3527	5.7
Lafayette (PA)	643	5.9	476	4.3
U. of Rochester (NY)	2056	8.4	1288	5.3
Virginia Military Institute	243	4.2	195	3.4
Wesleyan (CT)	877	12.4	511	7.2
Bowdoin (ME)	578	8.8	345	5.3
Grinnell (IA)	706	11.4	450	7.3
Manhattan (NY)	908	5.0	662	3.6
Group	70070	9.9	53014	7.6

Table 4B

Science Ph.D. Productivity

Ph.D.'s Conferred, 1951-1980/Bachelor's Degrees Conferred, 1946-1976

Top 50 Institutions: Empirical Science

<u>Institution*</u>	<u>Empirical Science Ph.D.'s</u>		<u>Life Science Ph.D.'s</u>		<u>Social Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Harvey Mudd (CA)	217	34.4	18	2.9	12	1.9
California Institute of Technology	1531	33.7	173	3.8	77	1.7
Massachusetts Institute of Technology	4461	17.1	375	1.4	305	1.2
Cooper Union (NY)	550	12.5	17	0.4	19	0.4
Webb Institute (NY)	46	11.0	0	0.0	1	0.2
Reed (OR)	334	8.7	154	4.0	278	7.3
Rensselaer Polytechnic Institute (NY)	1568	7.3	148	0.7	103	0.5
Rice (TX)	886	7.3	162	1.3	144	1.2
Polytechnic Institute of New York	892	7.2	26	0.2	17	0.1
Carnegie-Mellon (PA)	1217	6.0	71	0.4	134	0.7
UC-San Diego (CA)	143	5.6	134	5.2	48	1.9
New Mexico Institute of Mining	87	5.5	23	1.4	1	0.1
Swarthmore (PA)	351	5.2	209	3.1	415	6.1
Worcester Polytechnic Institute (MA)	368	5.2	20	0.3	12	0.2

*Institutions are ranked by Empirical Science Ph.D. productivity, presented in column one.

Top 50 Institutions: Empirical Science (continued)

	<u>Empirical Science Ph.D.'s</u>		<u>Life Science Ph.D.'s</u>		<u>Social Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Stevens Institute of Technology (NJ)	316	5.0	14	0.2	29	0.5
Colorado School of Mines	278	4.9	2	0.0	13	0.2
Haverford (PA)	178	4.9	94	2.6	143	3.9
Illinois Institute of Technology	756	4.5	50	0.3	98	0.6
Princeton (NJ)	1051	4.5	218	0.9	496	2.1
South Dakota School of Mines	198	4.4	7	0.2	3	0.1
Chicago (IL)	1011	4.1	510	2.1	1071	4.4
New College of the U. of South Florida	16	4.1	10	2.6	22	5.6
Carleton (MN)	287	4.0	139	1.9	205	2.8
Rose-Hulman (IN)	142	4.0	11	0.3	5	0.1
Lehigh (PA)	749	3.9	93	0.5	123	0.6
Johns Hopkins (MD)	652	3.7	292	1.7	263	1.5
Pomona (CA)	288	3.7	190	2.4	235	3.0
UC-Riverside (CA)	283	3.5	211	2.6	215	2.6
Oberlin (OH)	459	3.5	251	1.9	637	4.9
Wabash (IN)	134	3.5	112	2.9	78	2.0
Case Western Reserve (OH)	1203	3.3	207	0.6	341	0.9
Amherst (MA)	264	3.2	150	1.8	228	2.8
Union (NY)	374	3.2	111	0.9	136	1.2
Cornell (NY)	1846	3.1	1372	2.3	995	1.7

Top 50 Institutions: Empirical Science (continued)

	<u>Empirical Science Ph.D.'s</u>		<u>Life Science Ph.D.'s</u>		<u>Social Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Franklin & Marshall (PA)	294	3.1	90	1.0	170	1.8
Kalamazoo (MI)	144	3.1	91	2.0	72	1.6
UC-Irvine (CA)	79	3.0	123	4.6	51	1.9
Wooster (OH)	247	3.0	111	1.3	159	1.9
CUNY: City C. (NY)	2343	2.9	697	0.9	1950	2.4
Georgia Institute of Technology	922	2.9	57	0.2	100	0.3
King (TN)	40	2.9	11	0.8	12	0.9
Williams (MA)	243	2.9	75	0.9	189	2.2
Brown (RI)	667	2.8	254	1.1	467	2.0
Alfred (NY)	198	2.7	35	0.5	57	0.8
Harvard (MA)	1590	2.6	574	0.9	1363	2.2
Lafayette (PA)	287	2.6	69	0.6	120	1.1
U. of Rochester (NY)	637	2.6	272	1.1	379	1.5
Virginia Military Institute	148	2.6	30	0.5	17	0.3
Wesleyan (CT)	187	2.6	91	1.3	233	3.3
Bowdoin (ME)	164	2.5	70	1.1	111	1.7
Grinnell (IA)	153	2.5	99	1.6	198	3.2
Manhattan (NY)	453	2.5	110	0.6	99	0.5
Group	31932	4.4	8433	1.4	12649	1.8

Table 5A

Ph.D. Productivity

Ph.D.'s Conferred, 1951-1980/Bachelor's Degrees Conferred, 1946-1976

Top 50 Institutions: Life Science

<u>Institution*</u>	<u>All Ph.D.'s</u>		<u>Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
UC-San Diego (CA)	362	14.1	325	12.6
UC-Irvine (CA)	299	11.3	253	9.5
Philadelphia C. of Pharmacy (PA)	256	6.1	252	6.0
Reed (OR)	968	25.3	766	20.0
California Institute of Technology	1818	40.0	1781	39.2
Delaware Valley C. of Science & Agriculture (PA)	100	4.6	93	4.3
Swarthmore (PA)	1418	20.9	975	14.4
Harvey Mudd (CA)	257	40.7	247	39.1
Wabash (IN)	501	12.9	324	8.4
UC-Riverside (CA)	897	11.0	709	8.7
Haverford (PA)	683	18.8	415	11.4
New College of the U. of South Florida	63	16.1	48	12.2
Pomona (CA)	1066	13.7	713	9.2
UC-Santa Cruz (CA)	262	8.8	192	6.5
Earlham (IN)	476	9.1	308	5.9

*Institutions are ranked by Life Science Ph.D. productivity, presented in column two of Table 5B.

Top 50 Institutions: Life Science (continued)

	<u>All Ph.D.'s</u>		<u>Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Cornell (NY)	5329	8.8	4213	7.0
Brandeis (MA)	893	13.5	578	8.7
Chicago (IL)	3805	15.6	2592	10.6
Kalamazoo (MI)	427	9.3	307	6.7
Blackburn (IL)	98	6.3	71	4.6
Oberlin (OH)	2321	17.8	1347	10.3
Carleton (MN)	993	13.7	631	8.7
Amherst (MA)	1118	13.7	642	7.9
Bryn Mawr (PA)	593	12.0	276	5.6
Juniata (PA)	359	7.0	238	4.7
Berea (KY)	475	6.8	295	4.2
Johns Hopkins (MD)	1524	8.7	1207	6.9
Utah State	1580	5.0	1020	3.2
Eckerd (FL)	119	11.2	77	7.2
Grinnell (IA)	706	11.4	450	7.3
Warren Wilson (NC)	8	6.5	6	4.8
Antioch (OH)	875	11.0	620	7.8
Hiram (OH)	289	6.0	169	3.5
Iowa State	2844	4.9	2384	4.1
Muhlenberg (PA)	414	5.9	256	3.6
SUNY: Stony Brook (NY)	692	7.2	597	6.2
Drew (NJ)	340	6.1	231	4.2

Top 50 Institutions: Life Science (continued)

	<u>All Ph.D.'s</u>		<u>Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Massachusetts Institute of Technology	5438	20.9	5141	19.8
New Mexico Institute of Mining	112	7.0	111	7.0
Bates (ME)	425	7.1	246	4.1
C. of Charleston (SC)	117	4.5	78	3.0
Rice (TX)	1501	12.4	1192	9.9
Saint Mary's (MN)	338	7.4	197	4.3
Wesleyan (CT)	877	12.4	511	7.2
Wooster (OH)	868	10.4	517	6.2
UC-Berkeley (CA)	8801	6.5	6494	4.8
Cornell (IA)	338	7.3	175	3.8
Goshen (IN)	303	5.0	146	2.4
Hope (MI)	559	7.1	324	4.1
Kenyon (OH)	348	7.9	202	4.6
Knox (IL)	473	7.8	310	5.1
Mount Holyoke (MA)	642	6.3	365	3.6
North Central (IL)	253	5.1	138	2.8
Oklahoma State	2160	3.8	1448	2.5
Radcliffe (MA)	923	10.2	469	5.2
Western Maryland	251	4.7	136	2.5
Group	59955	9.2	43808	6.8

Table 5B

Science Ph.D. Productivity

Ph.D.'s Conferred, 1951-1980/Bachelor's Degrees Conferred, 1946-1976

Top 50 Institutions: Life Science

<u>Institution*</u>	<u>Empirical Science Ph.D.'s</u>		<u>Life Science Ph.D.'s</u>		<u>Social Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
UC-San Diego (CA)	143	5.6	134	5.2	48	1.9
UC-Irvine (CA)	79	3.0	123	4.6	51	1.9
Philadelphia C. of Pharmacy (PA)	69	1.6	182	4.3	1	0.0
Reed (OR)	334	8.7	154	4.0	278	7.3
California Institute of Technology	1531	33.7	173	3.8	77	1.7
Delaware Valley C. of Science & Agriculture (PA)	8	0.4	83	3.8	2	0.1
Swarthmore (PA)	351	5.2	209	3.1	415	6.1
Harvey Mudd (CA)	217	34.4	18	2.9	12	1.9
Wabash (IN)	134	3.5	112	2.9	78	2.0
UC-Riverside (CA)	283	3.5	211	2.6	215	2.6
Haverford (PA)	178	4.9	94	2.6	143	3.9
New College of the U. of South Florida	16	4.1	10	2.6	22	5.6
Pomona (CA)	288	3.7	190	2.4	235	3.0
UC-Santa Cruz (CA)	42	1.4	68	2.3	82	2.8
Earlham (IN)	102	2.0	124	2.4	82	1.6

*Institutions are ranked by Life Science Ph.D. productivity, presented in column two.

Top 50 Institutions: Life Science (continued)

	<u>Empirical Science Ph.D.'s</u>		<u>Life Science Ph.D.'s</u>		<u>Social Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Cornell (NY)	1846	3.1	1372	2.3	995	1.7
Brandeis (MA)	115	1.7	133	2.0	330	5.0
Chicago (IL)	1011	4.1	510	2.1	1071	4.4
Kalamazoo (MI)	144	3.1	91	2.0	72	1.6
Blackburn (IL)	20	1.3	31	2.0	20	1.3
Oberlin (OH)	459	3.5	251	1.9	637	4.9
Carleton (MN)	287	4.0	139	1.9	205	2.8
Amherst (MA)	264	3.2	150	1.8	228	2.8
Bryn Mawr (PA)	71	1.4	87	1.8	118	2.4
Juniata (PA)	110	2.2	92	1.8	36	0.7
Berea (KY)	96	1.4	120	1.7	79	1.1
Johns Hopkins (MD)	652	3.7	292	1.7	263	1.5
Utah State	266	0.8	536	1.7	218	0.7
Eckerd (FL)	19	1.8	17	1.6	41	3.9
Ginnell (IA)	153	2.5	99	1.6	198	3.2
Warren Wilson (NC)	2	1.6	2	1.6	2	1.6
Antioch (OH)	171	2.2	121	1.5	328	4.1
Hiram (OH)	59	1.2	70	1.5	40	0.8
Iowa State	1147	2.0	869	1.5	368	0.6
Muhlenberg (PA)	106	1.5	106	1.5	44	0.6
SUNY: Stony Brook (NY)	227	2.4	149	1.5	221	2.3
Drew (NJ)	71	1.3	80	1.4	80	1.4

Top 50 Institutions: Life Science (continued)

	<u>Empirical Science Ph.D.'s</u>		<u>Life Science Ph.D.'s</u>		<u>Social Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Massachusetts Institute of Technology	4461	17.1	375	1.4	305	1.2
New Mexico Institute of Mining	87	5.5	23	1.4	1	0.1
Bates (ME)	99	1.7	77	1.3	70	1.2
C. of Charleston (SC)	37	1.4	34	1.3	7	0.3
Rice (TX)	886	7.3	162	1.3	144	1.2
Saint Mary's (MN)	93	2.0	58	1.3	46	1.0
Yale Wesleyan (CT)	187	2.6	91	1.3	233	3.3
Wooster (OH)	247	3.0	111	1.3	159	1.9
UC-Berkeley (CA)	2971	2.2	1596	1.2	1927	1.4
Cornell (IA)	76	1.6	55	1.2	44	1.0
Goshen (IN)	46	0.8	73	1.2	27	0.4
Hope (MI)	152	1.9	95	1.2	77	1.0
Kenyon (OH)	81	1.8	51	1.2	70	1.6
Knox (IL)	125	2.1	76	1.2	109	1.8
Mount Holyoke (MA)	85	0.8	124	1.2	156	1.5
North Central (IL)	31	0.6	60	1.2	47	1.0
Oklahoma State	532	0.9	677	1.2	239	0.4
Radcliffe (MA)	69	0.8	105	1.2	295	3.3
Western Maryland	39	0.7	62	1.2	35	0.7
Group	21375	3.2	11107	1.9	11326	1.8

Table 6A

Ph.D. Productivity

Ph.D.'s Conferred, 1951-1980/Bachelor's Degrees Conferred, 1946-1976

Top 50 Institutions: Social Science

<u>Institution*</u>	<u>All Ph.D.'s</u>		<u>Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Reed (OR)	968	25.3	766	20.0
Swarthmore (PA)	1418	20.9	975	14.4
New College of the U. of South Florida	63	16.1	48	12.2
New School (NY)	99	9.7	57	5.6
Brandeis (MA)	893	13.5	578	8.7
Oberlin (OH)	2321	17.8	1347	10.3
Chicago (IL)	3805	15.6	2592	10.6
Antioch (OH)	875	11.0	620	7.8
Haverford (PA)	683	18.8	415	11.4
Eckerd (FL)	119	11.2	77	7.2
Radcliffe (MA)	923	10.2	469	5.2
Wesleyan (CT)	877	12.4	511	7.2
Grinnell (IA)	706	11.4	450	7.3
Barnard (NY)	1163	9.5	590	4.8
Pomona (CA)	1066	13.7	713	9.2
Claremont McKenna (CA)	142	5.3	96	3.6

*Institutions are ranked by Social Science Ph.D. productivity, presented in column three of Table 6B.

Top 50 Institutions: Social Science (continued)

	<u>All Ph.D.'s</u>		<u>Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Amherst (MA)	1118	13.7	642	7.9
UC-Santa Cruz (CA)	262	8.8	192	6.5
Carleton (MN)	993	13.7	642	8.7
UC-Riverside (CA)	897	11.0	709	8.7
Clark (MA)	546	6.8	390	4.9
Bryn Mawr (PA)	593	12.0	276	5.6
CUNY: City C. (NY)	6893	8.6	4990	6.2
Bard (NY)	142	6.7	85	4.0
Occidental (CA)	780	8.2	464	4.9
Pitzer (CA)	24	3.6	18	2.7
SUNY: Stony Brook (NY)	692	7.2	597	6.2
Wellesley (MA)	1002	8.4	461	3.9
Harvard (MA)	5554	9.0	3527	5.7
SUNY: Binghamton (NY)	605	6.4	415	4.4
Williams (MA)	835	9.8	507	6.0
CUNY: Brooklyn (NY)	4817	6.7	3044	4.2
Princeton (NJ)	2713	11.7	1765	7.6
Brown (RI)	1977	8.3	1388	5.8
Hamilton (NY)	507	9.4	255	4.7
Wabash (IN)	501	12.9	324	8.4
UC-Irvine (CA)	299	11.3	253	9.5

Top 50 Institutions: Social Science (continued)

	<u>All Ph.D.'s</u>		<u>Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
UC-San Diego (CA)	362	14.1	325	12.6
Dartmouth (NH)	1771	7.3	1109	4.9
Harvey Mudd (CA)	257	40.7	247	39.1
Vassar (NY)	715	6.8	355	3.4
Wooster (OH)	868	10.4	517	6.2
Yale (CT)	3407	8.4	1996	4.9
Beloit (WI)	433	6.5	301	4.5
Davidson (NC)	599	9.9	306	5.0
Franklin & Marshall (PA)	720	7.7	554	5.9
Knox (IL)	473	7.8	310	5.1
Southwestern at Memphis (TN)	316	7.4	188	4.4
Stanford (CA)	3703	7.8	2401	5.0
Bowdoin (ME)	578	8.8	345	5.3
California Institute of Technology	1818	40.0	1781	39.2
Lawrence (WI)	493	6.9	267	3.7
Whitman (WA)	346	7.1	228	4.7
Yeshiva (NY)	579	7.4	341	4.4
Group	65309	9.8	42808	6.7

Table 6B

Science Ph.D. Productivity

Ph.D.'s Conferred, 1951-1980/Bachelor's Degrees Conferred, 1946-1976

Top 50 Institutions: Social Science

<u>Institution*</u>	<u>Empirical Science Ph.D.'s</u>		<u>Life Science Ph.D.'s</u>		<u>Social Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Reed (OR)	334	8.7	154	4.0	278	7.3
Swarthmore (PA)	351	5.2	209	3.1	415	6.1
New College of the U. of South Florida	16	4.1	10	2.6	22	5.6
New School (NY)	1	0.1	0	0.0	56	5.5
Brandeis (MA)	115	1.7	133	2.0	330	5.0
Oberlin (OH)	459	3.5	251	1.9	637	4.9
Chicago (IL)	1011	4.1	510	2.1	1071	4.4
Antioch (OH)	171	2.2	121	1.5	328	4.1
Haverford (PA)	178	4.9	94	2.6	143	3.9
Eckerd (FL)	19	1.8	17	1.6	41	3.9
Radcliffe (MA)	69	0.8	105	1.2	295	3.3
Wesleyan (CT)	187	2.6	91	1.3	233	3.3
Grinnell (IA)	153	2.5	99	1.6	198	3.2
Barnard (NY)	86	0.7	141	1.1	363	3.0
Pomona (CA)	288	3.7	190	2.4	235	3.0
Claremont McKenna (CA)	13	0.5	5	0.2	78	2.9

*Institutions are ranked by Social Science Ph.D. productivity, presented in column three.

Top 50 Institutions: Social Science (continued)

	<u>Empirical Science Ph.D.'s</u>		<u>Life Science Ph.D.'s</u>		<u>Social Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Amherst (MA)	264	3.2	150	1.8	228	2.8
UC-Santa Cruz (CA)	42	1.4	68	2.3	82	2.8
Carleton (MN)	287	4.0	139	1.9	205	2.8
UC-Riverside (CA)	283	3.5	211	2.6	215	2.6
Clark (MA)	100	1.3	80	1.0	210	2.6
Bryn Mawr (PA)	71	1.4	87	1.8	118	2.4
CUNY: City C. (NY)	2343	2.9	697	0.9	1950	2.4
Bard (NY)	13	0.6	22	1.0	50	2.3
Occidental (CA)	169	1.8	78	0.8	217	2.3
Pitzer (CA)	0	0.0	3	0.5	15	2.3
SUNY: Stony Brook (NY)	227	2.4	149	1.5	221	2.3
Wellesley (MA)	68	0.6	124	1.0	269	2.3
Harvard (MA)	1590	2.6	574	0.9	1363	2.2
SUNY: Binghamton (NY)	133	1.4	74	0.8	208	2.2
Williams (MA)	243	2.9	75	0.9	189	2.2
CUNY: Brooklyn (NY)	962	1.3	562	0.8	1520	2.1
Princeton (NJ)	1051	4.5	218	0.9	496	2.1
Brown (RI)	667	2.8	254	1.1	467	2.0
Hamilton (NY)	100	1.8	44	0.8	111	2.0
Wabash (IN)	134	3.5	112	2.9	78	2.0
UC-Irvine (CA)	79	3.0	123	4.6	51	1.9

Top 50 Institutions: Social Science (continued)

	<u>Empirical Science Ph.D.'s</u>		<u>Life Science Ph.D.'s</u>		<u>Social Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
UC-San Diego (CA)	143	5.6	134	5.2	48	1.9
Dartmouth (NH)	477	2.1	193	0.9	439	1.9
Harvey Mudd (CA)	217	34.4	18	2.9	12	1.9
Vassar (NY)	54	0.5	102	1.0	199	1.9
Wooster (OH)	247	3.0	111	1.3	159	1.9
Yale (CT)	915	2.3	323	0.8	758	1.9
Beloit (WI)	109	1.6	69	1.0	123	1.8
Davidson (NC)	146	2.4	48	0.8	112	1.8
Franklin & Marshall (PA)	294	3.1	90	1.0	170	1.8
Knox (IL)	125	2.1	76	1.2	109	1.8
Southwestern at Memphis (TN)	72	1.7	38	0.9	78	1.8
Stanford (CA)	1104	2.3	421	0.9	876	1.8
Bowdoin (ME)	164	2.5	70	1.1	111	1.7
California Institute of Technology	1531	33.7	173	3.8	77	1.7
Lawrence (WI)	83	1.2	64	0.9	120	1.7
Whitman (WA)	90	1.9	55	1.1	83	1.7
Yeshiva (NY)	160	2.1	51	0.7	130	1.7
Group	18208	2.8	8010	1.4	16590	2.5

Table 7A

Ph.D. Productivity

Ph.D.'s Conferred, 1951-1980/Bachelor's Degrees Conferred, 1946-1976

Top 50 Institutions: Total Numbers of Ph.D.'s

<u>Institution*</u>	<u>All Ph.D.'s</u>		<u>Humanities Ph.D.'s</u>		<u>Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
UC-Berkeley (CA)	8801	6.5	1218	0.9	6494	4.8
CUNY: City (NY)	6893	8.6	797	1.0	4990	6.2
Illinois	6761	5.1	634	0.5	4876	3.7
Michigan	6569	5.6	1091	0.9	4397	3.7
Wisconsin-Madison	6049	5.3	798	0.7	4020	3.5
UC-Los Angeles (CA)	5717	5.3	947	0.9	3675	3.4
Harvard (MA)	5554	9.0	1551	2.5	3527	5.7
Massachusetts Institute of Technology	5438	20.9	114	0.4	5141	19.8
Cornell (NY)	5329	8.8	595	1.0	4213	7.0
Minnesota	5321	3.8	681	0.5	3443	2.5
CUNY: Brooklyn (NY)	4817	6.7	813	1.1	3044	4.2
Texas	4684	3.9	698	0.6	3047	2.5
Ohio State	4615	3.6	439	0.3	2829	2.2
Pennsylvania State	4440	3.9	310	0.3	3194	2.8
Columbia (NY)	4392	6.7	1096	1.7	2609	4.0
New York U.	4230	4.1	668	0.7	2478	2.4

*Institutions are ranked by total numbers of Ph.D.'s, presented in column one.

Top 50 Institutions: Total Numbers of Ph.D.'s (continued)

	<u>All Ph.D.'s</u>		<u>Humanities Ph.D.'s</u>		<u>Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Michigan State	3973	3.1	370	0.3	2576	2.0
Chicago (IL)	3805	15.6	781	3.2	2592	10.6
Purdue (IN)	3786	4.6	120	0.1	3085	3.8
Stanford (CA)	3703	7.8	821	1.7	2401	5.0
U. of Washington	3484	3.4	564	0.5	2332	2.3
Rutgers (NJ)	3469	4.7	501	0.7	2463	3.4
Yale (CT)	3407	8.4	1085	2.7	1996	4.9
Utah	2862	5.7	365	0.7	1724	3.5
Iowa State	2844	4.9	66	0.1	2384	4.1
Brigham Young (UT)	2832	4.7	379	0.6	1474	2.4
Indiana	2784	3.2	497	0.6	1292	1.5
Northwestern (IL)	2770	4.7	605	1.0	1613	2.7
Florida	2720	3.7	243	0.3	1703	2.3
Princeton (NJ)	2713	11.7	741	3.2	1765	7.6
Pennsylvania	2703	4.7	550	1.0	1743	3.0
Wayne State (MI)	2624	3.6	408	0.6	1243	1.7
Missouri	2519	3.2	307	0.4	1533	2.0
Colorado	2411	3.5	330	0.5	1627	2.4
Maryland	2393	2.7	270	0.3	1598	1.8
Kansas	2361	4.2	344	0.6	1487	2.6

Top 50 Institutions: Total Numbers of Ph.D.'s (continued)

	<u>All Ph.D.'s</u>		<u>Humanities Ph.D.'s</u>		<u>Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Oberlin (OH)	2321	17.8	666	5.1	1347	10.3
CUNY: Queens (NY)	2310	4.8	534	1.1	1357	2.8
Case Western Reserve (OH)	2270	6.3	235	0.6	1751	4.8
Nebraska	2253	3.9	265	0.5	1324	2.3
Oklahoma State	2160	3.8	98	0.2	1448	2.5
Iowa	2148	3.6	377	0.6	1205	2.0
Pittsburgh (PA)	2134	3.1	270	0.4	1264	1.9
Syracuse (NY)	2097	3.4	274	0.4	1224	2.0
Rochester (NY)	2056	8.4	483	2.0	1288	5.3
Boston (MA)	2043	2.8	394	0.5	889	1.2
North Carolina	2014	3.6	507	0.9	1082	2.0
CUNY: Hunter (NY)	2012	4.4	440	1.0	960	2.1
Notre Dame (IN)	1996	5.3	372	1.0	1384	3.7
Brown (RI)	1977	8.3	405	1.7	1328	5.8
Group	179564	5.0	27117	0.8	118519	3.3

Table 7B

Science Ph.D. Productivity

Ph.D.'s Conferred, 1951-1980/Bachelor's Degrees Conferred, 1946-1976

Top 50 Institutions: Total Numbers of Ph.D.'s

<u>Institution*</u>	<u>Empirical Science Ph.D.'s</u>		<u>Life Science Ph.D.'s</u>		<u>Social Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
UC-Berkeley (CA)	2971	2.2	1596	1.2	1927	1.4
CUNY: City (NY)	2343	2.9	697	0.9	1950	2.4
Illinois	2434	1.9	1358	1.0	1084	0.8
Michigan	2120	1.8	870	0.7	1407	1.2
Wisconsin-Madison	1611	1.4	1313	1.1	1096	1.0
UC-Los Angeles (CA)	1495	1.4	770	0.7	1410	1.3
Harvard (MA)	1590	2.6	574	0.9	1363	2.2
Massachusetts Institute of Technology	4461	17.1	375	1.4	305	1.2
Cornell (NY)	1846	3.1	1372	2.3	995	1.7
Minnesota	1294	0.9	1084	0.8	1065	0.8
CUNY: Brooklyn (NY)	962	1.3	562	0.8	1520	2.1
Texas	1579	1.3	580	0.5	888	0.7
Ohio State	1040	0.8	990	0.8	799	0.6
Pennsylvania State	1446	1.3	1002	0.9	746	0.7
Columbia (NY)	1262	1.9	419	0.6	928	1.4
New York U.	914	0.9	432	0.4	1132	1.1

*Institutions are ranked by total numbers of Ph.D.'s, presented in column one of Table 7A.

Top 50 Institutions: Total Numbers of Ph.D.'s (continued)

	<u>Empirical Science Ph.D.'s</u>		<u>Life Science Ph.D.'s</u>		<u>Social Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Michigan State	804	0.6	1027	0.8	745	0.6
Chicago (IL)	1011	4.1	510	2.1	1071	4.4
Purdue (IN)	1789	2.2	868	1.1	423	0.5
Stanford (CA)	1104	2.3	421	0.9	876	1.8
U. of Washington	1089	1.1	504	0.5	739	0.7
Rutgers (NJ)	945	1.3	836	1.1	662	0.9
Yale (CT)	915	2.3	323	0.8	758	1.9
Utah	827	1.7	386	0.8	511	1.0
Iowa State	1147	2.0	869	1.5	368	0.6
Brigham Young (UT)	481	0.8	423	0.7	570	0.9
Indiana	362	0.4	361	0.4	569	0.6
Northwestern (IL)	734	1.2	252	0.4	627	1.1
Florida	711	1.0	504	0.7	488	0.7
Princeton (NJ)	1051	4.5	218	0.9	496	2.1
Pennsylvania	752	1.3	337	0.6	654	1.1
Wayne State (MI)	488	0.7	242	0.3	513	0.7
Missouri	525	0.7	579	0.7	429	0.5
Colorado	711	1.0	317	0.5	599	0.9
Maryland	529	0.6	589	0.7	480	0.5
Kansas	696	1.2	341	0.6	450	0.8

Top 50 Institutions: Total Numbers of Ph.D.'s (continued)

	<u>Empirical Science Ph.D.'s</u>		<u>Life Science Ph.D.'s</u>		<u>Social Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Oberlin (OH)	459	3.5	251	1.9	637	4.9
CUNY: Queens (NY)	414	0.9	202	0.4	741	1.5
Case Western Reserve (OH)	1203	3.3	207	0.6	341	0.9
Nebraska	471	0.8	534	0.9	319	0.6
Oklahoma State	532	0.9	677	1.2	239	0.4
Iowa	423	0.7	289	0.5	493	0.8
Pittsburgh (PA)	502	0.7	325	0.5	437	0.6
Syracuse (NY)	412	0.7	288	0.5	524	0.8
Rochester (NY)	637	2.6	272	1.1	379	1.5
Boston (MA)	221	0.3	209	0.3	459	0.6
North Carolina	416	0.8	245	0.4	421	0.8
CUNY: Hunter (NY)	146	0.3	239	0.5	575	1.3
Notre Dame (IN)	860	2.3	183	0.5	341	0.9
Brown (RI)	667	2.8	254	1.1	467	2.0
Group	53402	1.5	28076	0.8	37041	1.0

Table 8A

Ph.D. Productivity

Ph.D.'s Conferred, 1951-1980/Bachelor's Degrees Conferred, 1946-1976

Great Lakes Colleges Association

<u>Institution</u>	<u>All Ph.D.'s</u>		<u>Humanities Ph.D.'s</u>		<u>Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Albion	382	4.7	51	0.6	215	2.7
Antioch	875	11.0	131	1.7	620	7.8
Denison	527	5.3	113	1.1	312	3.2
DePauw	874	6.8	165	1.3	525	4.1
Earlham	476	9.1	87	1.7	308	5.9
Hope	559	7.1	104	1.3	324	4.1
Kalamazoo	427	9.3	70	1.5	307	6.7
Kenyon	348	7.9	120	2.7	202	4.6
Oberlin	2321	17.8	666	5.1	1347	10.3
Ohio Wesleyan	682	4.8	116	0.8	388	2.8
Wabash	501	12.9	105	2.7	324	8.4
Wooster	868	10.4	190	2.3	517	6.2
Group	8840	8.8	1918	1.9	5389	5.4

Table 8B

Science Ph.D. Productivity

Ph.D.'s Conferred, 1951-1980/Bachelor's Degrees Conferred, 1946-1976

Great Lakes Colleges Association

<u>Institution</u>	<u>Empirical Science Ph.D.'s</u>		<u>Life Science Ph.D.'s</u>		<u>Social Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Albion	69	0.9	84	1.0	62	0.8
Antioch	171	2.2	121	1.5	328	4.1
Denison	91	0.9	58	0.6	163	1.7
DePauw	193	1.5	121	0.9	211	1.6
Earlham	102	2.0	124	2.4	82	1.6
Hope	152	1.9	95	1.2	77	1.0
Kalamazoo	144	3.1	91	2.0	72	1.6
Kenyon	81	1.8	51	1.2	70	1.6
Oberlin	459	3.5	251	1.9	637	4.9
Ohio Wesleyan	131	0.9	93	0.7	164	1.2
Wabash	134	3.5	112	2.9	78	2.0
Wooster	247	3.0	111	1.3	159	1.9
Group	1974	2.0	1312	1.3	2103	2.1

Table 9A

Ph.D. Productivity

Ph.D.'s Conferred, 1951-1980/Bachelor's Degrees Conferred, 1946-1976

Associated Colleges of the Midwest

<u>Institution</u>	<u>All Ph.D.'s</u>		<u>Humanities Ph.D.'s</u>		<u>Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Beloit	433	6.5	70	1.1	301	4.5
Carleton	993	13.7	253	3.5	631	8.7
Coe	231	4.8	28	0.6	131	2.7
Colorado	390	5.1	63	0.8	254	3.3
Cornell	338	7.3	64	1.4	175	3.8
Grinnell	706	11.4	168	2.7	450	7.3
Knox	473	7.8	92	1.5	310	5.1
Lake Forest	212	3.7	40	0.7	135	2.4
Lawrence	493	6.9	121	1.7	267	3.7
Macalester	462	5.1	93	1.0	270	3.0
Monmouth	222	4.5	23	0.5	143	2.9
Ripon	190	4.9	28	0.7	122	3.2
St. Olaf	776	6.4	195	1.6	408	3.4
Group	5919	6.9	1238	1.4	3597	4.2

Table 9B

Science Ph.D. Productivity

Ph.D.'s Conferred, 1951-1980/Bachelor's Degrees Conferred, 1946-1976

Associated Colleges of the Midwest

<u>Institution</u>	<u>Empirical Science Ph.D.'s</u>		<u>Life Science Ph.D.'s</u>		<u>Social Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Beloit	109	1.6	69	1.0	123	1.8
Carleton	287	4.0	139	1.9	205	2.8
Coe	54	1.1	32	0.7	45	0.9
Colorado	91	1.2	75	1.0	88	1.1
Cornell	76	1.6	55	1.2	44	1.0
Grinnell	153	2.5	99	1.6	198	3.2
Knox	125	2.1	76	1.2	109	1.8
Lake Forest	35	0.6	28	0.5	72	1.3
Lawrence	83	1.2	64	0.9	120	1.7
Macalester	73	0.8	59	0.7	138	1.5
Monmouth	78	1.6	33	0.7	32	0.6
Ripon	59	1.5	28	0.7	35	0.9
St. Olaf	212	1.8	105	0.9	91	0.8
Group	1435	1.7	862	1.0	1300	1.5

Table 10A

Ph.D. Productivity

Ph.D.'s Conferred, 1951-1980/Bachelor's Degrees Conferred, 1946-1976

Ivy League

<u>Institution</u>	<u>All Ph.D.'s</u>		<u>Humanities Ph.D.'s</u>		<u>Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Brown	1977	8.3	405	1.7	1388	5.8
Columbia	4392	6.7	1096	1.7	2609	4.0
Cornell	5329	8.8	595	1.0	4213	7.0
Dartmouth	1771	7.8	437	1.9	1109	4.9
Harvard	5554	9.0	1551	2.5	3527	5.7
Pennsylvania	2703	4.7	550	1.0	1743	3.0
Princeton	2713	11.7	741	3.2	1765	7.6
Yale	3407	8.4	1085	2.7	1996	4.9
Group	27846	7.8	6460	1.8	18350	5.2

Table 10B

Science Ph.D. Productivity

Ph.D.'s Conferred, 1951-1980/Bachelor's Degrees Conferred, 1946-1976

Ivy League

<u>Institution</u>	<u>Empirical Science Ph.D.'s</u>		<u>Life Science Ph.D.'s</u>		<u>Social Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Brown	667	2.8	254	1.1	467	2.0
Columbia	1262	1.9	419	0.6	928	1.4
Cornell	1846	3.1	1372	2.3	995	1.7
Dartmouth	477	2.1	193	0.9	439	1.9
Harvard	1590	2.6	574	0.9	1363	2.2
Pennsylvania	752	1.3	337	0.6	654	1.1
Princeton	1051	4.5	218	0.9	496	2.1
Yale	915	2.3	323	0.8	758	1.9
Group	8560	2.4	3690	1.0	6100	1.7

Table 11A
 Ph.D. Productivity
 Ph.D.'s Conferred, 1951-1980/Bachelor's Degrees Conferred, 1946-1976
 Big Ten Universities

<u>Institution</u>	<u>All Ph.D.'s</u>		<u>Humanities Ph.D.'s</u>		<u>Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Illinois	6761	5.2	634	0.5	4876	3.7
Indiana	2784	3.2	497	0.6	1292	1.5
Iowa	2148	3.6	377	0.6	1205	2.0
Michigan	6569	5.6	1091	0.9	4397	3.7
Michigan State	3973	3.1	370	0.3	2576	2.0
Minnesota	5321	3.8	681	0.5	3443	2.5
Northwestern	2770	4.7	605	1.0	1613	2.7
Ohio State	4615	3.6	439	0.3	2829	2.2
Purdue	3786	4.6	120	0.1	3085	3.8
Wisconsin	6049	5.3	798	0.7	4020	3.5
Group	44776	4.3	5612	0.5	29336	2.8

Table 11B

Science Ph.D. Productivity

Ph.D.'s Conferred, 1951-1980/Bachelor's Degrees Conferred, 1946-1976

Big Ten Universities

<u>Institution</u>	<u>Empirical Science Ph.D.'s</u>		<u>Life Science Ph.D.'s</u>		<u>Social Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
Illinois	2434	1.9	1358	1.0	1084	0.8
Indiana	362	0.4	361	0.4	569	0.6
Iowa	423	0.7	289	0.5	493	0.8
Michigan	2120	1.8	870	0.7	1407	1.2
Michigan State	804	0.6	1027	0.8	745	0.6
Minnesota	1294	0.9	1084	0.8	1065	0.8
Northwestern	734	1.2	252	0.4	627	1.1
Ohio State	1040	0.8	990	0.8	799	0.6
Purdue	1789	2.2	868	1.1	428	0.5
Wisconsin	1611	1.4	1313	1.1	1096	1.0
Group	12611	1.2	8412	0.8	8313	0.8

Table 12A

Ph.D. Productivity

Ph.D.'s Conferred, 1951-1980/Bachelor's Degrees Conferred, 1946-1976

Twelve Leading Technical Institutions

<u>Institution</u>	<u>All Ph.D.'s</u>		<u>Humanities Ph.D.'s</u>		<u>Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
California Institute of Technology	1818	40.0	17	0.4	1781	39.2
Carnegie-Mellon	1678	8.3	90	0.4	1422	7.0
Case Western Reserve	2270	6.3	235	0.6	1751	4.8
Illinois Institute of Technology	1005	5.9	28	0.2	904	5.3
Lehigh	1114	5.8	65	0.3	965	5.0
Massachusetts Institute of Technology	5438	20.9	114	0.4	5141	19.8
New Mexico Institute of Mining and Technology	112	7.0	0	0.0	111	7.0
Polytechnic Institute of New York	965	7.8	9	0.1	935	7.6
Rensselaer Polytechnic Institute	1929	9.0	26	0.1	1819	8.5
Stevens Institute of Technology	375	5.9	2	0.0	359	5.6
Webb Institute of Naval Architecture	52	12.4	1	0.0	47	11.2
Worcester Polytechnic Institute	414	5.8	2	0.0	400	5.6
Group	17170	9.9	589	0.3	15635	9.1

Table 12B

Science Ph.D. Productivity

Ph.D.'s Conferred, 1951-1980/Bachelor's Degrees Conferred, 1946-1976

Twelve Leading Technical Institutions

<u>Institution</u>	<u>Empirical Science Ph.D.'s</u>		<u>Life Science Ph.D.'s</u>		<u>Social Science Ph.D.'s</u>	
	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>	<u>Total</u>	<u>Ratio</u>
California Institute of Technology	1531	33.7	173	3.8	77	1.7
Carnegie-Mellon	1217	6.0	71	0.4	134	0.7
Case Western Reserve	1203	3.3	207	0.6	341	0.9
Illinois Institute of Technology	756	4.5	50	0.3	98	0.6
Lehigh	749	3.9	93	0.5	123	0.6
Massachusetts Institute of Technology	4461	17.1	375	1.4	305	1.2
New Mexico Institute of Mining and Technology	87	5.5	23	1.4	1	0.1
Polytechnic Institute of New York	892	7.2	26	0.2	17	0.1
Rensselaer Polytechnic Institute	1568	7.3	148	0.7	103	0.5
Stevens Institute of Technology	316	5.0	14	0.2	29	0.5
Webb Institute of Naval Architecture	46	11.0	0	0.0	1	0.2
Worcester Polytechnic Institute	368	5.2	20	0.3	12	0.2
Group	13194	7.6	1200	0.7	1241	0.7

Table 13

Ph.D. Productivity Ratios:
 (Ph.D.'s Conferred, 1951-1980/Bachelor's Degrees Conferred, 1946-1976)

	<u>All Ph.D.'s</u>	<u>Humanities</u>	<u>Science</u>	<u>Empirical Science</u>	<u>Life Science</u>	<u>Social Science</u>
GLCA	8.8	1.9	5.4	2.0	1.3	2.1
ACM	6.9	1.4	4.2	1.7	1.0	1.5
Ivy League	7.8	1.8	5.2	2.4	1.0	1.7
Big Ten	4.3	0.5	2.8	1.2	0.8	0.8
Leading Technicals	9.9	0.3	9.1	7.6	0.7	0.7
Top 50 Institutions: Total Ph.D.'s	5.0	0.8	3.3	1.5	0.8	1.0
Top 50 Institutions: All Ph.D.'s (ratio)	11.0	2.0	7.9	4.0	1.6	2.3
Top 50 Institutions: Humanities Ph.D.'s (ratio)	10.0	2.8	6.1	-	-	-
Top 50 Institutions: Science Ph.D.'s (ratio)	10.7	1.7	8.1	4.3	1.6	2.1
Top 50 Institutions: Empirical Science Ph.D.'s (ratio)	9.9	-	7.6	4.4	1.4	1.8
Top 50 Institutions: Life Science Ph.D.'s (ratio)	9.2	-	6.8	3.2	1.9	1.8
Top 50 Institutions: Social Science Ph.D.'s (ratio)	9.8	-	6.7	2.8	1.4	2.5

APPENDICES

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Appendix A

DESCRIPTION OF METHODOLOGY

For all institutions listed in the 12th (1983) edition of **American Universities and Colleges**, a productivity ratio was computed using average numbers of bachelor's degrees conferred based on 10 years of data (with an average interval of 3 years), and total Ph.D.'s produced, 1951-1980. For institutions which merged during the period covered, data for all predecessor institutions were included. (Seminaries were not included in this study.)

All institutions were ranked on the productivity ratio, and those with an overall ratio greater than 3.49 were identified (a total of 277 institutions). Complete data for baccalaureates awarded, 1946-1976, were compiled for those institutions, and for the top 50 in total numbers of Ph.D.'s awarded. The lists of 50 leading institutions by productivity ratio for Ph.D.'s in various fields were constructed from these data.

The total Ph.D.'s numbers were obtained directly from data supplied by the National Academy of Sciences. The productivity ratio was computed by dividing the average number of Ph.D.'s produced (1951-1980) by the average number of bachelor's degrees conferred (1946-1976). The higher the resulting ratio, the more productive the institution.

Average numbers per year were computed to make the Ph.D. figures comparable for institutions of different ages. The average baccalaureate-Ph.D. lapse is ten years.* Those receiving their baccalaureate degrees in 1971 or later would not, on average, have completed a Ph.D. by 1980. Thus, institutions awarding their first baccalaureate in 1971 or later were not included in this study. For those institutions awarding their first baccalaureate after 1941, the number of years over which the Ph.D. totals were averaged was computed by subtracting the date of first baccalaureate from 1971. For institutions which awarded their first baccalaureate degree prior to 1942, the number of years used for the average was 30.

An average was also computed for each institution for the number of bachelor's degrees conferred to take into account both the varying dates of first-baccalaureate and, in a few cases, missing data. The number of years used for this average was the actual number of years for which data were available (those numbers are reported in the table in Appendix B).

*A Century of Doctorates: Data Analysis of Growth and Change, Lindsey R. Harmon, Project Director. National Academy of Sciences, Washington, D.C., 1978, page 55.

The groupings of disciplines are those used by the National Academy of Sciences in organizing Ph.D. data. The field of Humanities includes History, English and American Language and Literature, Foreign Language and Literature, and Other Humanities. Empirical Sciences includes Physics, Astronomy, Chemistry, Earth Sciences, Mathematics, Chemical Engineering and Engineering. Life Sciences includes Biochemistry, Basic Medical Sciences, Other Biosciences, Medical Sciences, and Agricultural Sciences. Social Sciences includes Psychology, Economics, Anthropology and Sociology, Political Science, and Other Social Science. Total Science Ph.D.'s were the sum of those included in Empirical Sciences, Life Sciences, and Social Sciences. All Fields included Professional Fields, Education, and Other Unspecified Fields, as well as Total Science and Humanities degrees.

In ranking various groups of "top 50 institutions," institutions with the same productivity ratio are listed in alphabetical order. Institutional names are those used in 1980. A few of the "top 50" lists contain more than 50 institutions because of ties for the 50th place on the list.

Appendix B provides, for each institution, the average number of bachelor's degrees conferred, and the number of years for which data were available. For each institution, the "top 50" listings on which it appears are identified; Appendix B can thus serve as an index to individual institutional listings in this study.

Appendix C provides group data, including the average number of Ph.D.'s per year for each institution in each group, and the sum for each group of the average Ph.D.'s per year for each institution.

Appendix B

Ph.D. Productivity: Institutional Data

<u>Institution</u>	<u>*Top 50 Listing</u>	<u>Average Bachelors Degrees</u>	<u>N Years Bachelors Data</u>	<u>N Years PhD Data</u>
Agnes Scott (GA)	HUM	124.97	29	30
Albion (MI) (GLCA)		268.86	29	30
Alfred (NY)	EMP	241.17	29	30
Amherst (MA)	ALL HUM SCI EMP LIFE SOC	271.72	29	30
Antioch (OH) (GLCA)	ALL SCI LIFE SOC	264.31	29	30
Bard (NY)	HUM SOC	71.00	29	30
Barnard (NY)	ALL HUM SOC	409.27	15	30
Bates (ME)	LIFE	198.24	29	30
Beloit (WI) (ACM)	SOC	222.17	29	30
Berea (KY)	LIFE	231.62	29	30
Birmingham-Southern (AL)	HUM	186.34	29	30
Blackburn (IL)	LIFE	64.96	27	24
Boston (MA)	TOT	2455.24	29	30
Bowdoin (ME)	ALL HUM SCI EMP SOC	217.79	29	30
Brandeis (MA)	ALL HUM SCI LIFE SOC	348.33	24	19
Brigham Young (UT)	TOT	2020.31	29	30

*ALL = All Fields; TOT = Total Ph.D.'s, not adjusted for size; HUM = Humanities;
SCI = Science; EMP = Empirical Science; LIFE = Life Sciences; SOC = Social Sciences

<u>Institution</u>	<u>*Top 50 Listing</u>	<u>Average Bachelors Degrees</u>	<u>N Years Bachelors Data</u>	<u>N Years PhD Data</u>
Brown (RI) (Ivy)	TOT ALL SCI EMP SOC	796.52	29	30
Bryn Mawr (PA)	ALL HUM SCI LIFE SOC	164.28	29	30
California Institute of Technology (Tech)	ALL SCI EMP LIFE SOC	151.59	29	30
UC-Berkeley (CA)	TOT LIFE	4484.10	29	30
UC-Irvine (CA)	ALL SCI EMP LIFE SOC	883.20	10	3
UC-Los Angeles (CA)	TOT	3589.53	30	30
UC-Riverside (CA)	ALL SCI EMP LIFE SOC	508.81	21	16
UC-San Diego (CA)	ALL SCI EMP LIFE SOC	643.00	9	4
UC-Santa Cruz (CA)	ALL HUM SCI LIFE SOC	743.89	9	4
Carleton (MN) (ACM)	ALL HUM SCI EMP LIFE SOC	241.97	29	30
Carnegie-Mellon (PA) (Tech)	ALL SCI EMP	674.66	29	30
Case Western Reserve (OH) (Tech)	TOT EMP	1209.52	29	30
C. of Charleston (SC)	LIFE	86.2	29	30
Chicago (IL)	TOT ALL HUM SCI EMP LIFE SOC	814.14	29	30
Claremont McKenna (CA)	SOC	116.19	26	23
Clark (MA)	SOC	266.21	29	30
Coe (IA) (ACM)		160.28	29	30
Colorado (ACM)		256.00	29	30

<u>Institution</u>	<u>*Top 50 Listing</u>	<u>Average Bachelors Degrees</u>	<u>N Years Bachelors Data</u>	<u>N Years PhD Data</u>
Colorado School of Mines	EMP	190.83	29	30
U. of Colorado	TOT	2286.31	29	30
Columbia (NY) (Ivy)	TOT	2194.62	29	30
Cooper Union (NY)	ALL SCI EMP	146.31	29	30
Cornell (IA) (ACM)	LIFE	153.79	29	30
Cornell (NY) (Ivy)	TOT ALL SCI EMP LIFE	2009.14	29	30
CUNY: Brooklyn (NY)	TOT SOC	2398.90	29	30
CUNY: City C. (NY)	TOT ALL SCI EMP SOC	2681.07	29	30
CUNY: Hunter (NY)	TOT	1512.97	29	30
CUNY: Queens (NY)	TOT	1601.70	29	30
Dallas (TX)	HUM	112.31	16	11
Dartmouth (NH) (Ivy)	HUM SOC	752.14	29	30
Davidson (NC)	ALL HUM SOC	202.41	29	30
Delaware Valley C. of Science & Agriculture (PA)	LIFE	102.92	26	21
Denison (OH) (GLCA)		329.21	29	30
DePauw (IN) (GLCA)		430.62	29	30
Drew (NJ)	LIFE	184.86	29	30
Earlham (IN) (GLCA)	ALL SCI LIFE	173.55	29	30
Eckerd (FL)	ALL HUM SCI LIFE SOC	152.00	11	7
U. of Florida	TOT	2442.07	29	30

<u>Institution</u>	<u>*Top 50 Listing</u>	<u>Average Bachelors Degrees</u>	<u>N Years Bachelors Data</u>	<u>N Years PhD Data</u>
Franklin & Marshall (PA)	SCI EMP SOC	311.17	29	30
Georgia Institute of Technology	EMP	1050.66	29	30
Goshen (IN)	LIFE	203.72	29	30
Grinnell (IA) (ACM)	ALL HUM SCI EMP LIFE SOC	206.21	29	30
Hamilton (NY)	ALL HUM SOC	180.55	29	30
Harvard (MA) (Ivy)	TOT ALL HUM SCI EMP SOC	2052.41	29	30
Harvey Mudd (CA)	ALL SCI EMP LIFE SOC	52.59	17	12
Haverford (PA)	ALL HUM SCI EMP LIFE SOC	121.41	29	30
Hendrix (AR)	HUM	125.45	29	30
Hiram (OH)	LIFE	160.66	29	30
Hope (MI) (GLCA)	LIFE	264.28	29	30
Illinois Institute of Technology (Tech)	SCI EMP	565.00	29	30
U. of Illinois (Big Ten)	TOT	4349.45	29	30
Indiana (Big Ten)	TOT	2929.93	29	30
Iowa State U. of Science	TOT LIFE	1938.66	29	30
U. of Iowa (Big Ten)	TOT	1974.79	29	30
Johns Hopkins (MD)	ALL SCI EMP LIFE	584.45	29	30
Juilliard (NY)	HUM	88.93	28	30
Juniata (PA)	LIFE	170.07	29	30
Kalamazoo (MI) (GLCA)	ALL SCI EMP LIFE	152.83	29	30

<u>Institution</u>	<u>*Top 50 Listing</u>	<u>Average Bachelors Degrees</u>	<u>N Years Bachelors Data</u>	<u>N Years PhD Data</u>
U. of Kansas	TOT	1879.52	29	30
Kenyon (OH) (GLCA)	ALL HUM LIFE	146.48	29	30
King (TN)	EMP	45.54	28	30
Knox (IL) (ACM)	LIFE SOC	202.83	29	30
Lafayette (PA)	EMP	366.00	29	30
Lake Forest (IL) (ACM)		188.62	29	30
Lawrence (WI) (ACM)	SOC	238.03	29	30
Lehigh (PA) (Tech)	EMP	644.62	29	30
Macalester (MN) (ACM)		300.76	29	30
Manhattan (NY)	EMP	607.07	29	30
U. of Maryland	TOT	3008.48	29	30
Massachusetts Institute of Technology (Tech)	TOT ALL SCI EMP LIFE	867.24	29	30
Michigan State U. (Big Ten)	TOT	4282.59	29	30
U. of Michigan (Big Ten)	TOT	3928.76	29	30
Middlebury (VT)	HUM	311.93	29	30
U. of Minnesota (Big Ten)	TOT	4667.07	29	30
U. of Missouri	TOT	2600.21	29	30
Monmouth (IL) (ACM)		164.66	29	30
Mount Holyoke (MA)	HUM LIFE	338.83	29	30
Muhlenberg (PA)	LIFE	235.79	29	30

<u>Institution</u>	<u>*Top 50 Listing</u>	<u>Average Bachelors Degrees</u>	<u>N Years Bachelors Data</u>	<u>N Years PhD Data</u>
U. of Nebraska	TOT	1945.10	29	30
New College of the U. of South Florida	ALL HUM SCI EMP LIFE SOC	98.00	8	4
New Mexico Institute of Mining (Tech)	SCI EMP LIFE	53.00	28	30
New School (NY)	ALL HUM SCI SOC	40.75	28	25
New York U. (NY)	TOT	3398.69	29	30
U. of North Carolina	TOT	1841.83	29	30
North Central (IL)	LIFE	163.85	27	30
Northwestern (IL) (Big Ten)	TOT	1972.31	29	30
Notre Dame (IN)	TOT	1247.83	29	30
Oberlin (OH) (GLCA)	TOT ALL HUM SCI EMP LIFE SOC	435.30	28	30
Occidental (CA)	ALL SOC	315.21	29	30
Ohio State (Big Ten)	TOT	4321.45	29	30
Ohio Wesleyan (OH) (GLCA)		469.31	29	30
Oklahoma State	TOT LIFE	1910.28	29	30
Peabody Institute (MD)	HUM	29.29	28	30
Pennsylvania State	TOT	3770.55	29	30
U. of Pennsylvania (Ivy)	TOT	1913.66	29	30
Philadelphia C. of Pharmacy (PA)	SCI LIFE	140.79	28	30
U. of Pittsburgh (PA)	TOT	2274.21	29	30
Pitzer (CA)	SOC	109.90	10	6

<u>Institution</u>	<u>*Top 50 Listing</u>	<u>Average Bachelors Degrees</u>	<u>N Years Bachelors Data</u>	<u>N Years PhD Data</u>
Polytechnic Institute of New York (Tech)	SCI EMP	412.24	29	30
Pomona (CA)	ALL HUM SCI EMP LIFE SOC	259.55	29	30
Princeton (NJ) (Ivy)	TOT ALL HUM SCI EMP SOC	771.28	29	30
Purdue (IN) (Big Ten)	TOT	2719.76	29	30
Radcliffe (MA)	ALL HUM LIFE SOC	301.70	20	30
Reed (OR)	ALL HUM SCI EMP LIFE SOC	127.52	29	30
Rensselaer Polytechnic Institute (NY) (Tech)	ALL SCI EMP	715.69	29	30
Rice (TX)	ALL HUM SCI EMP LIFE	402.17	29	30
Ripon (WI) (ACM)		128.17	29	30
U. of Rochester (NY)	TOT ALL HUM SCI EMP	816.59	29	30
Rose-Hulman (IN)	EMP	118.93	29	30
Rutgers (NJ)	TOT	2437.59	29	30
Saint Mary's (MN)	LIFE	151.62	29	30
Sarah Lawrence (NY)	HUM	120.90	29	30
Smith (MA)	HUM	522.00	29	30
U. of the South (TN)	HUM	137.17	29	30
South Dakota School of Mines	EMP	148.72	29	30
Southwestern at Memphis (TN)	HUM SOC	142.66	29	30

<u>Institution</u>	<u>*Top 50 Listing</u>	<u>Average Bachelors Degrees</u>	<u>N Years Bachelors Data</u>	<u>N Years PhD Data</u>
St. Olaf (MN) (ACM)		401.24	29	30
St. John's (MD)	ALL HUM	37.54	28	30
Stanford (CA)	TOT SOC	1589.76	29	30
Stevens Institute of Technology (NJ) (Tech)	SCI EMP	212.69	29	30
SUNY: Binghamton (NY)	SOC	428.64	25	22
SUNY: Stony Brook (NY)	SCI LIFE SOC	963.73	15	10
Swarthmore (PA)	ALL HUM SCI EMP LIFE SOC	226.28	29	30
Syracuse (NY)	TOT	2078.76	29	30
U. of Texas	TOT	3990.45	29	30
Trinity (CT)	HUM	254.34	29	30
Union (NY)	SCI EMP	392.17	29	30
Utah State	LIFE	1056.34	29	30
U. of Utah	TOT	1660.55	29	30
Vassar (NY)	HUM SOC	352.55	29	30
Virginia Military Institute	EMP	191.10	29	30
Wabash (IN) (GLCA)	ALL HUM SCI EMP LIFE SOC	129.07	29	30
Warren Wilson (NC)	LIFE	61.88	8	2
U. of Washington	TOT	3446.14	29	30
Wayne State (MI)	TOT	2423.38	29	30
Webb Institute (NY) (Tech)	ALL SCI EMP	14.00	28	30
Wellesley (MA)	ALL HUM SOC	395.31	29	30

<u>Institution</u>	<u>*Top 50 Listing</u>	<u>Average Bachelors Degrees</u>	<u>N Years Bachelors Data</u>	<u>N Years PhD Data</u>
Wesleyan (CT)	ALL HUM SCI EMP LIFE SOC	236.48	29	30
Western Maryland	LIFE	178.97	29	30
Wheaton (IL)	HUM	415.41	29	30
Whitman (WA)	SOC	161.79	29	30
Williams (MA)	ALL HUM SCI EMP SOC	283.17	29	30
U. of Wisconsin-Madison (Big Ten)	TOT	3827.14	29	30
Wooster (OH) (GLCA)	ALL HUM SCI EMP LIFE SOC	278.17	29	30
Worcester Polytechnic Institute (MA) (Tech)	SCI EMP	237.79	29	30
Yale (CT) (Ivy)	TOT ALL HUM SOC	1351.21	29	30
Yeshiva (NY)	HUM SOC	259.89	28	30

*ALL = All Fields; TOT = Total Ph.D.'s, not adjusted for size; HUM = Humanities;
SCI = Science; EMP = Empirical Science; LIFE = Life Sciences; SOC = Social Sciences

Appendix C: Group Data

Average Ph.D.'s and Bachelor's Degrees Per Year Per Institution in Each Group

	<u>All Ph.D.'s</u>	<u>Humanities</u>	<u>Science</u>	<u>Empirical Science</u>	<u>Life Science</u>	<u>Social Science</u>	<u>Bachelor's Degrees</u>
GLCA	24.6	5.3	15.0	5.5	3.6	5.8	278.50
ACM	15.2	3.2	9.2	3.7	2.2	3.3	220.36
Ivy League	116.0	26.9	76.5	35.7	15.4	25.4	1480.12
Big Ten	149.3	18.7	97.8	42.0	28.0	27.7	3497.32
Leading Technicals	47.7	1.6	43.4	36.6	3.3	3.4	479.84
Top 50 Institutions: Total Ph.D.'s	119.7	18.1	79.0	35.6	18.7	24.7	2382.38
Top 50 Institutions: All Ph.D.'s (ratio)	53.0	9.8	38.3	19.4	7.8	11.0	481.94
Top 50 Institutions: Humanities Ph.D.'s (ratio)	33.6	9.4	20.5	-	-	-	336.18
Top 50 Institutions: Science Ph.D.'s (ratio)	51.6	8.2	39.0	20.9	7.9	10.3	480.92
Top 50 Institutions: Empirical Science Ph.D.'s (ratio) (52 institutions)	49.2	-	37.6	22.0	6.9	8.8	497.47
Top 50 Institutions: Life Science Ph.D.'s (ratio) (56 institutions)	42.1	-	31.4	14.6	8.5	8.2	458.88
Top 50 Institutions: Social Science Ph.D.'s (ratio) (54 institutions)	47.1	-	32.0	13.2	6.9	11.8	480.44

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Appendix C: Group Data

Average Ph.D.'s Per Year (Sum for Each Group)

	<u>All Ph.D.'s</u>	<u>Humanities</u>	<u>Science</u>	<u>Empirical Science</u>	<u>Life Science</u>	<u>Social Science</u>
GLCA	294.666	63.933	179.633	65.800	43.733	70.100
ACM	197.300	41.266	119.900	47.833	28.733	43.333
Ivy League	928.200	215.333	611.666	28.333	123.000	203.333
Big Ten	1492.533	187.066	977.866	420.366	280.400	277.100
Leading Technicals	572.333	19.633	521.166	439.800	40.000	41.366
Top 50 Institutions: Total Ph.D.'s	5985.465	903.898	3950.628	1780.065	935.866	1234.695
Top 50 Institutions: All Ph.D.'s (ratio)	2650.788	491.978	1914.312	970.793	392.315	551.202
Top 50 Institutions: Humanities Ph.D.'s (ratio)	1681.257	468.980	1023.242	-	-	-
Top 50 Institutions: Science Ph.D.'s (ratio)	2580.654	407.912	1952.146	1043.493	393.648	515.002
Top 50 Institutions: Empirical Science Ph.D.'s (ratio) (52 institutions)	2556.458	-	1956.877	1141.650	356.252	458.970
Top 50 Institutions: Life Science Ph.D.'s (ratio) (56 institutions)	2358.439	-	1755.719	819.500	476.858	459.356
Top 50 Institutions: Social Science Ph.D.'s (ratio) (54 institutions)	2543.562	-	1726.446	714.470	372.596	639.381

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Appendix D

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