

Doctoral Programs and Library Resources

THE ACCOMPANYING TABLE includes all United States institutions, which, according to *American Universities and Colleges* (9th edition, 1964), conferred five or more doctoral degrees during the period 1953-1962—a total of 186 universities, colleges, seminaries, institutes, and schools.

The tabulation presents the number of degrees awarded by each institution, and the figures are further broken down by broad fields: humanities, biological sciences, physical sciences, and social sciences. In a few instances, the total number of degrees is larger than the totals of the four subject fields, because the degrees were not classifiable by fields; in this category were "degrees in arts without major, sciences without major, and all others." The final two columns record for each library the number of volumes held and the total expenditures for books, periodicals, and binding in 1962, the final year covered by the decade of statistics of doctoral degrees.

The chief purpose of the present investigation is to determine whether there exists any direct correlation between the number and variety of doctoral degrees awarded and the strength of library resources in individual institutions.

A glance at the table, wherein institutions are arranged in order of the number of doctoral degrees conferred, will reveal a close relationship, in general, between degrees and library support.

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Among the thirty-seven universities which awarded more than seven hundred degrees each during the decade, only ten held less than one million volumes, and none possessed less than one-half million volumes; two of the ten have gone past the million mark since 1962. Of the thirty-six institutions reporting between three hundred and seven hundred degrees each, eighteen held collections in excess of five hundred thousand volumes, and two were over one million volumes; three others have gone above the one million figure since 1962.

Approached in another way, of the 93,799 doctoral degrees awarded in the United States for the 1953-62 period, 58,150, or nearly two-thirds, came out of the thirty universities with libraries containing more than one million volumes each.

Special factors should be noted in the cases of the two top degree-producing institutions: Columbia and California. Of Columbia's imposing total of 5,644 doctoral degrees, 3,438 were awarded by Columbia University proper and 2,206 by Teachers College. California's 5,024 degrees represented five different campuses, but chiefly Berkeley and Los Angeles, both owning multi-million volume libraries.

Book expenditures for the last year of the decade were more uneven than were the volume holdings. Among the forty-four institutions awarding more than five hundred degrees each, the range was from Catholic University's \$82,151 to the combined University of Cali-

TABLE 1

Institution	Total No. Degrees	Humanities	Biological Sciences	Physical Sciences	Social Sciences	Volumes in Library, 1962	Expenditures, 1962
Columbia	5,644	893	431	971	3,338	3,026,464	\$ 558,846
California (all campuses)	5,024	353	1,650	1,778	1,228	5,279,404	2,844,697
Wisconsin	3,733	431	1,485	881	919	1,527,432	544,918
Illinois	3,502	296	915	1,520	746	3,525,820	810,445
Harvard	3,192	577	340	775	1,487	6,931,293	1,023,889
Michigan	2,981	469	824	927	747	3,049,715	627,514
N.Y. Univ.	2,870	341	628	516	1,376	1,150,000	214,446
Ohio State	2,559	242	892	693	726	1,520,597	423,879
Chicago	2,363	310	507	528	991	2,210,062	457,213
Minnesota	2,353	190	1,039	523	590	2,072,285	603,345
Cornell	2,202	164	948	585	499	2,278,046	684,283
Yale	2,141	695	355	572	498	4,572,893	781,765
Purdue	2,032	22	959	888	163	564,383	339,922
Indiana	1,990	261	213	252	1,262	1,828,992	571,812
Stanford	1,938	190	229	751	733	2,287,332	437,628
MIT	1,813	16	76	1,671	41	827,357	146,649
Iowa	1,570	378	412	273	507	1,096,996	337,180
Texas	1,521	157	315	516	533	1,508,262	1,242,171
Mich. State	1,515	60	668	339	445	897,612	377,932
Pennsylvania	1,486	240	343	368	526	1,744,680	493,247
Penn. State	1,459	58	410	524	467	659,516	386,456
Southern California	1,413	303	220	127	763	1,007,891	222,583
Northwestern	1,336	352	204	469	311	1,666,200	361,714
Iowa State	1,308	1	560	606	141	528,003	151,987
Princeton	1,137	216	96	580	233	1,754,580	347,343
Univ. of Washington	1,124	126	260	447	279	1,173,496	437,125
Pittsburgh	1,051	114	222	278	434	1,021,343	248,809
Boston Univ.	951	313	201	93	344	546,504	150,305
North Carolina	929	217	144	230	338	1,283,109	425,589
Johns Hopkins	905	128	246	379	146	1,207,246	198,785
Maryland	861	36	339	286	200	501,973	337,308
Syracuse	830	41	116	158	290	617,482	296,936
Catholic	824	336	119	160	208	614,036	82,151
Florida	795	84	245	220	241	970,429	317,924
Missouri	787	61	239	150	337	1,043,330	376,669

Rutgers	779	19	436	190	132	1,017,765	309,778
Duke	732	139	235	174	184	1,540,062	470,416
Rochester	695	193	236	231	34	749,217	240,704
California Tech.	653		64	589		136,278	84,967
Kansas	651	42	201	212	196	962,849	344,771
Colorado	634	50	136	211	237	785,542	358,218
Nebraska	597	20	148	104	323	712,963	231,364
Fordham	583	143	135	77	228	548,881	187,825
Louisiana	576	68	200	145	163	1,042,218	451,233
Utah	491	28	126	248	89	314,026	178,165
Oklahoma	486	26	128	113	219	826,105	255,461
Carnegie Tech.	483		10	455	18	204,149	73,978
Oregon State	478		251	145	78	415,217	139,990
Western Reserve	476	73	164	83	154	777,306	127,670
Virginia	454	47	48	187	169	1,155,488	193,872
Denver	453	148	138		167	420,509	150,645
Tennessee	452	25	157	149	121	704,907	252,617
Brown	444	95	76	226	47	1,170,755	214,619
Washington Univ. (at St. Louis)	442	29	122	196	95	911,759	225,407
Florida State	431	71	141	81	133	596,453	196,431
Notre Dame	413	55	34	259	65	577,822	162,022
St. Louis	406	72	81	120	133	481,881	134,472
Wayne	406	24	46	138	198	795,488	341,584
Brooklyn Poly. Inst.	392			387	5	62,290	78,970
Oregon	385	14	51	73	247	869,457	227,876
Vanderbilt	368	105	99	105	59	841,305	213,843
Washington State	362		207	63	92	(J't. Univ. Libs.) 763,500	131,280
Temple	361	61	108	77	115	584,654	162,614
Texas A. & M.	352		226	113	11	434,117	134,915
Connecticut	349		126	75	147	413,551	218,656
State Univ. of N.Y.—Buffalo	341	13	87	67	174	374,184	55,362
Peabody	330	26	30	13	261	(J't. Univ. Libs., See Vanderbilt) 503,794	114,000
Georgetown	329	15	37	112	165	654,594	274,696
Oklahoma State	327		113	105	109	178,845	37,687
Colorado State Coll.	320				312	131,025	30,954
Radcliffe	320	99	83	31	105	246,686	182,474
North Carolina State Coll.	313		191	98	24	970,786	307,344
Kentucky	303	25	83	69	126		

TABLE 1 (cont.)

Institution	Total No. Degrees	Humanities	Biological Sciences	Physical Sciences	Social Sciences	Volumes in Library, 1962	Expenditures, 1962
Illinois Tech.	297	2	46	247	2	85,000	\$ 34,325
Tulane	271	57	111	73	30	806,460	239,232
Cincinnati	264	27	69	127	36	829,628	155,302
Rensselaer	253			249	4	111,289	8,790
American Univ.	238		27	8	203	147,009	100,704
Case Institute	235			225	10	95,757	74,183
Kansas State	235		162	72	1	284,527	165,244
S.W. Baptist Sem.	232	232				300,000	36,666
Delaware	211		11	200		352,032	169,858
Rice	199	18	23	152	6	420,494	201,102
Houston	191		84	2	105	243,630	100,714
Loyola	186	12	103	8	63	373,246	102,271
Lehigh	182	8	12	158	4	401,600	86,215
Southern Baptist Sem.	173	173				106,125	75,454
Alabama	165	2	34	36	93	723,747	171,518
Arkansas	164	16	5	34	109	476,941	121,868
Emory	149	24	58	31	28	723,463	214,295
Wyoming	144		23	20	101	298,170	76,239
Arizona	142		47	43	52	370,450	197,712
New Mexico	140	33	11	59	37	343,618	130,703
Virginia Poly.	125		37	88		304,558	68,567
Massachusetts	117	6	89	19	3	251,991	94,845
Yeshiva	116	40	40	2	34	268,224	99,477
Bryn Mawr	106	52	10	18	19	290,646	53,376
New School for Social Research	105	9	26		70	30,167	19,876
St. John's	105	27	14		64	208,805	116,564
Georgia Tech.	103			103		262,614	186,718
Tufts	101		24	5	72	318,695	84,496
Union Theol. Sem. (N.Y.)	101	101				373,040	25,486
New Orleans Baptist Sem.	93	93				73,549	20,720
Auburn	90		23	21	46	318,929	93,869
Georgia	90	5	27	12	46	517,215	218,925
West Virginia	86		28	41	17	485,990	180,181
Princeton Theol. Sem.	80	80				263,812	26,269
Claremont	78	7	35		36	333,495	110,000

Lawrence	78			78		95,176	27,848
North Dakota	78		19				
Utah State	77		54	8	59	233,721	80,312
Adelphia	74		71	3	15	302,090	77,261
Texas Tech.	74	7	3	8		120,987	73,134
Baylor	67		35	17	56	527,936	161,159
Brandeis	66	14	18	12	15	318,422	95,550
Louisville	58		7	51	22	263,599	127,305
Dropsie	57	18				341,005	147,456
Northern Baptist Sem.	57	57			35	73,431	4,850
Texas Woman's Univ.	56		36			63,907	5,884
North Texas	52	7			20	160,000	66,224
Mississippi	50	1	9	2	45	414,330	169,532
Jewish Theol. Sem.	49	49			38	352,889	140,399
Union Theol. Sem. (Va.)	48	48				203,000	12,335
Bradley	46	1				128,571	21,153
Iliff Theol. Sem.	46	46			45	130,000	33,500
St. Mary's (Ind.)	45	45				60,000	9,809
South Carolina	44	5	4	15		61,045	21,449
Colorado School of Mines	43			43	20	514,859	267,619
Colorado State Univ.	42		18	24		104,574	27,103
Drew	42	41				219,512	68,271
New Hampshire	40		14	26	1	248,619	34,124
Montana State Coll.	39		6	26		308,119	76,927
Hartford Sem.	37	35			7	164,000	63,000
Central Baptist Sem.	36	36			2	170,667	18,500
Rockefeller Inst.	34		34			36,220	9,573
Hebrew Union	33	33				55,243	46,151
Portland	31		22		9	150,920	18,385
Jefferson	30		30			102,422	21,880
Univ. of Pacific	30					46,091	33,060
Philadelphia Coll. of Pharmacy	29		28	1	30	120,000	51,524
Akron	27		2	25		33,814	15,300
Tulsa	27					137,256	54,721
Arizona State	26				27	209,899	46,444
Springfield	26				26	448,750	228,080
Duquesne	24	4		20		56,658	13,500
Pacific School of Religion	23	23				173,096	73,978
Hawaii	22		17	5		71,694	13,729
						415,047	279,121

TABLE 1 (cont.)

Institution	Total No. Degrees	Humanities	Biological Sciences	Physical Sciences	Social Sciences	Volumes in Library, 1962	Expenditures, 1962
Boston Coll.	21				21	581,584	\$ 134,060
Southern Illinois	21	2	7		12	597,671	482,420
Medical Coll. of Va.	20		17	3		69,357	24,413
Middlebury	19	19				130,819	25,636
Medical Coll. of S.C.	17		17			34,551	14,574
Stevens	17			17		43,100	19,646
Hahnemann	15		15			37,511	17,300
Ohio Univ.	15	6		5	4	328,347	121,480
St. Mary's Sem. (Ill.)	14	14				53,500	3,000
Grace Sem.	13	13				25,475	11,216
San Francisco Sem.	13	13				80,177	23,142
St. Bonaventure	13	8	5			112,749	14,615
Rhode Island	12		2	10		208,520	124,531
General Theol. Sem.	11	11				134,746	31,003
Protestant Episcopal School	11	11				59,217	5,000
South Dakota State	11		8		3	141,481	50,836
South Dakota	11		2		9	188,552	48,564
Miami	10		4	4	2	616,019	252,234
Mississippi State	10		8	1	1	221,362	63,150
Univ. of Missouri at Kansas City	10				10	223,400	31,571
Alaska	9			9		70,736	52,335
Brigham Young	9			3	6	373,125	212,236
Alfred	8			8		103,138	18,400
Loma Linda	8		8			60,000	24,616
Woodstock	8	8				133,000	22,000
Howard	7			7		391,103	222,480
St. Mary's Sem. (Md.)	7	7				7,434	3,243
Union	7		7			203,000	41,190
Southern Calif. School of Theology	6	6				65,653	11,345
Maine	5			5		328,488	55,865
Marquette	5		5			307,050	157,204
Montana State Univ.	5				5	257,973	91,121
N.Y. Law	5				5	73,000	8,895
Occidental	5	5				168,489	37,476
U.S. Naval School	5			5		230,000	59,500

fornia's total for all of its campuses of \$2,844,697. Eleven universities reported expenditures in excess of \$500,000 each, nineteen between \$300,000 and \$500,000, and only eight less than \$200,000. Inflationary trends of the past several years have increased the totals; in 1963-64, twenty-eight universities spent more than \$500,000 for books and six exceeded \$1,000,000.

Since there are no established norms, exactly how many volumes should be held by the library and how much money spent for books in an institution offering doctoral programs are debatable matters. Pragmatically speaking, however, it seems doubtful that high-level doctoral work in a variety of fields can be carried on with less than half a million volumes and with annual book expenditures under \$200,000. Applying these criteria to the 186 institutions included in the present investigation, only sixty-four met the 500,000 volume standard, and fifty-seven spent more than \$200,000 for library resources.

If these recommended, admittedly arbitrary levels are valid, 123 institutions were substandard in volume holdings and 130 in expenditures for library materials, as of 1962.

In certain instances, there may have been mitigating facts. The specialized technical institutions—California Institute of Technology, Carnegie Institute of Technology, Brooklyn Polytechnic Institute, Illinois Institute of Technology, Rensselaer Polytechnic Institute, Case Institute of Technology, Colorado School of Mines, etc.—rank high academically, but their doctoral offerings are in a limited number of scientific and technical fields. Hence, their library requirements are considerably less varied than are those of general universities dealing with humanities and social sciences, as well as with science and technology. Such institutions as Purdue, Iowa State University, Pennsylvania State Univer-

sity, and others which in the past have specialized in agriculture and engineering have grown slowly for the same reason, although in recent years they have tended to develop into comprehensive universities.

It should also be pointed out that Massachusetts Institute of Technology, which by general consent ranks at the top of this type of institution, possesses a library approaching a million volumes in size.

Another consideration that has doubtless influenced the modest size of libraries in certain doctoral-degree granting institutions is the proximity of extensive resources in other libraries. Examples are Bryn Mawr College in Philadelphia, closely allied to the University of Pennsylvania, and Radcliffe College in Cambridge, with its Harvard University affiliation. Unless there is a direct official connection, however, no university worthy of the name would expect to rely chiefly upon other institutions to provide the library resources needed by its doctoral candidates.

The most severe limitations of library collections and support found in the group granting doctoral degrees were among theological seminaries. The tradition that Christianity and Judaism are bookish religions is hardly borne out by the miniscule libraries and parsimonious book budgets which seem to be the rule rather than the exception in divinity schools. Two highly regarded institutions, Princeton Theological Seminary and Union Theological Seminary of New York, for example, expended \$26,269 and \$25,486, respectively, for library materials in 1961-62, and others ranged as low as \$3,243. Yet the twenty-two independent schools of this character awarded more than one thousand one hundred doctoral degrees in the period under review.

In summary, statistics of doctoral de-

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- and Research Center, Inc., 117 R. Street N.E. Washington, D.C. 20002. v. 1, no. 1, May 1965. Bimonthly. \$7.25. 65-9916.
- **Neuroendocrinology*. S. Karger AG, Arnold-Bocklin-Strasse 25, 4000 Basel, Switzerland. v. 1, no. 1, 1965/66. Bimonthly. \$15.50. 65-9943.
- Northwest Folklore*. University of Oregon Publications, Friendly Hall, Eugene, Ore. v. 1, no. 1, Summer 1965. Semiannual. \$2.50. 65-9944.
- Palaeogeography, Palaeoclimatology, Palaeoecology*. Elsevier Publishing Company, P.O. Box 211, Amsterdam, The Netherlands. v. 1, no. 1, Mar. 1965. 4 no. a year. \$14. 65-9956.
- Private Pilot*. Gallant Publishing Company, 550A S. Citrus Ave., Covina, Calif. v. 1, no. 1, Oct./Nov. 1965. Bimonthly. \$3.25. 65-9949.
- Religious Studies*. Cambridge University Press, American Branch, 32 East 57th St., New York 10022. v. 1, no. 1, Oct. 1965. Semiannual. \$9.50. 65-9981.
- Revista Latinoamericana de Sociología*. Administración, Revista Latinoamericana de Sociología, Virrey del Pino 3230, Buenos Aires, Argentina. v. 1, no. 1, Mar. 1965. 3 no. a year. \$5. 65-9972.
- School Safety*. National Safety Council, Editorial and Executive Office, 425 North Michigan Ave., Chicago 60611. v. 1, no. 1, Sept./Oct. 1965. 4 no. a year. \$3.60. 65-9945.
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- Science Books; a Quarterly Review*. Science Books, American Association for the Advancement of Science, 1515 Massachusetts Ave. N.W., Washington, D.C. 20005. v. 1, no. 1, Apr. 1965. Quarterly. \$4.50. 65-9914.
- Southern Education Report*. Southern Education Reporting Service, P.O. Box 6156, Nashville, Tenn. 37212. v. 1, no. 1, July/Aug. 1965. Bimonthly. \$2. 65-9938.
- Syn; International Contributions to the New Art*. Agis Verlag, 757 Baden-Baden, Lichentaler Allee 84. 1, 1965. 3 no. a year. DM 36-. 65-9971.
- Systems and Communications*. Systems Publications Ltd., Bugle House, 21a Noel St., London W.1. v. 1, no. 1, Sept. 1965. Monthly. \$11 (free to certain categories of subscriber). 65-9946.
- Theatre Design & Technology*. 1117 C.L., 4200 5th Ave. Pittsburgh 15213. no. 1, May 1965. 4 no. a year. \$6. 65-9932.
- Urban Affairs Quarterly*. Sage Publications Inc., 150 Fifth Ave., New York 10011. v. 1, no. 1, Sept. 1965. Quarterly. \$12. 65-9957.
- View; the Magazine of Closed-Circuit and Community Antenna TV*. RT Publishing Co., 10 Poplar Road, Ridgefield, Conn. 06877. v. 1, no. 1, Aug. 1965. Bimonthly. \$6. 65-9970.
- Vista*. United Nations Association of the United States of America Inc., 345 East 46th St., New York 10017. v. 1, no. 1, July/Aug. 1965. Bimonthly. Price not given. 65-9924.
- Voices; the Art and Science of Psychotherapy*. Alexander Jasnow, Managing Editor, 14-11 Lucena Drive, Fair Lawn, N.J. 07410. v. 1, no. 1, Fall 1965. Quarterly. \$8. 65-9947.
- Voyageur*. Box 5226 Powderhorn Station, Minneapolis, Minn. 55407. v. 1, no. 1, 1965. Semiannual. \$2 (per issue). 65-9939.
- Weekly Compilation of Presidential Documents*. Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. v. 1, no. 1, Aug. 2, 1965. Weekly. \$6. 65-9929. ■■

DOCTORAL PROGRAMS . . .

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grees granted and of library holdings and book expenditures strongly support the view that the two go hand in hand in universities distinguished for their doctoral programs. An institution outstanding for its graduate offerings is almost invariably equally notable for the strength of its library resources. It is perhaps equally obvious that a substantial number of institutions giving the doctorate lack the library resources to support advanced-level graduate study, and should either discontinue such offerings or undertake extensive development of their libraries. ■■