

Appendixes

Alphabetical Listing of Leading Undergraduate Sources of Science and Engineering Ph.D.s in Two Institutional Categories, 1950-75

The following alphabetical lists are based on an OTA analysis of the colleges and universities granting baccalaureate degrees to students who went on to earn a Ph.D. in science or engineering. Because large degree-granting institutions would be favored in a ranking based on the absolute number of baccalaureates produced that go on to earn Ph.D.s in science and engineering, OTA measured the contributions of baccalaureate-granting institutions to Ph.D. production, controlling for size of the institution.¹

The 100 Most Productive Institutions

This category lists alphabetically the 100 institutions of all types with the highest ratios of baccalaureate degrees awarded (in all fields) to students who later earned science or engineering Ph.D.s (at any institution).²

Amherst College/MA
 Antioch College/OH
 Bard College/NY
 Bates College/ME
 Beloit College/WI
 Berea College/KY
 Blackburn College/IL
 Bowdoin College/ME
 Brandeis University/MA
 Brown University/RI
 Bryn Mawr College/PA
 Bucknell University/PA
 California Institute of Technology
 Carleton College/MN

Carnegie-Mellon University/PA
 Case Western Reserve University/OH
 Centre College of Kentucky
 City University of New York
 Clark University/MA
 College of Charleston/SC
 College of Wooster/OH
 Colorado School of Mines
 Columbia University/NY
 Cooper Union/NY
 Cornell University/NY
 Dartmouth College/NH
 Davidson College/NC
 Delaware Valley College/PA
 Drew University/NJ
 Duke University/NC
 Earlham College/IN
 Eckerd College/FL
 Franklin and Marshall College/PA
 Grinnell College/IA
 Hamilton College/NY
 Hampshire College/MA
 Harvard University/MA
 Harvey Mudd College/CA
 Haverford College/PA
 Hope College/MI
 Illinois Benedictine College
 Illinois Institute of Technology
 Iowa State University
 The Johns Hopkins University/MD
 Juniata College/PA
 Kalamazoo College/MI
 Kenyon College/OH
 King College/TN
 Knox College/IL
 Lafayette College/PA

¹Betty D. Maxfield, "Institutional Productivity: The Undergraduate Origins of Science and Engineering Ph.D.s," OTA contractor report, July 1987. Baccalaureates awarded are based on the Department of Education's National Center for Statistics institutional counts, reported in *Earned Degrees Conferred*. Six academic years were sampled in this analysis for baccalaureate data: 1950, 1955, 1960, 1965, 1970, and 1975. All baccalaureate reformation was matched (through 1986) with Ph.D. data from the National Research Council's Doctorate Records File, which is based on annual Surveys of Earned Doctorates. New Ph.D. recipients, in cooperation with their institutions' graduate studies offices, complete questionnaires that provide basic demographic, educational, and planned employment characteristics. This information is the basis of the Ph.D. counts used in calculating the institutional ratios of science and engineering Ph.D.s per 100 baccalaureates.

²These 100 include the 15 "technical" institutions (that emphasize science or engineering) whose productivity was shown separately in figure 3-6. The ratio of science and engineering Ph.D.s earned per 100 baccalaureate degrees awarded by these institutions range from 4 to 44.

Lawrence University/WI
 Lebanon Valley College/PA
 Lehigh University/PA
 Macalester College/MN
 Massachusetts Institute of Technology
 Muhlenberg College/PA
 New Mexico Institute of Mining and Technology
 Oberlin College/OH
 Occidental College/CA
 Philadelphia College of Pharmacy and Science/PA
 Pitzer College/CA
 Polytechnic University/NY
 Pomona College/CA
 Princeton University/NJ
 Radcliffe College/MA
 Reed College/OR
 Rensselaer Polytechnic Institute/NY
 Rhodes College/TN
 Rice University/TX
 South Dakota School of Mining and Technology
 Stanford University/CA
 State University of New York at Binghamton
 State University of New York, College of
 Environmental Science and Forestry
 State University of New York at Stony Brook
 Stevens Institute of Technology/NJ
 St. Johns College/MD
 Swarthmore College/PA
 Union University/NY
 United States Merchant Marine Academy/NY
 United States Military Academy/NY
 University of California at Berkeley
 University of California at Davis
 University of California at Irvine
 University of California at Los Angeles
 University of California at Riverside
 University of California at San Diego
 University of California at Santa Cruz
 University of Chicago/IL
 University of Rochester/NY
 University of South Florida, New College
 Vassar College/NY
 Wabash College/IN
 Webb Institute of Naval Architecture/NY
 Wellesley College/MA
 Wesleyan University/CT
 Whitman College/WA
 Williams College/MA
 Worcester Polytechnic Institute/MA
 Yale University/CT
 Yeshiva University/NY

49 Liberal Arts Colleges

The 50 liberal arts colleges that participated in the Second National Conference on "The Future of Science at Liberal Arts Colleges" at Oberlin College in June 1986 defined this list (presented alphabetically).¹

Albion College/MI
 Alma College/MI
 Amherst College/MA
 Antioch College/OH
 Bates College/ME
 Beloit College/WI
 Bowdoin College/ME
 Bryn Mawr College/PA
 Bucknell University/PA
 Carleton College/MN
 Colgate University/NY
 College of the Holy Cross/MA
 College of Wooster/OH
 Colorado College
 Davidson College/NC
 Denisen University/OH
 Depauw University/IN
 Earlham College/PA
 Franklin and Marshall College/PA
 Grinnell College/IA
 Hamilton College/NY
 Hampton University/VA
 Harvey Mudd College/CA
 Haverford College/PA
 Hope College/MI
 Kalamazoo College/MI
 Kenyon College/OH
 Lafayette College/PA
 Macalester College/MN
 Manhattan College/NY
 Middlebury College/VT
 Mt. Holyoke College/MA
 Oberlin College/OH
 Occidental College/CA
 Ohio Wesleyan University
 Pomona College/CA
 Reed College/OR
 Smith College/MA

¹However, Barnard College's baccalaureate counts were not reported separately from Columbia University. Thus, the 50 private liberal arts colleges, sometimes referred to as "research colleges" because of their emphasis on undergraduate and faculty research, were reduced to 49. The ratios of science and engineering Ph.D.s earned per 100 baccalaureates awarded by these institutions vary from 1 to 30.

St. Olaf College/MN
Swarthmore College/PA
Trinity College/CT
Union University/NY
Vassar College/NY
Wabash College/IN

Wellesley College/MA
Wesleyan University/CT
Wheaton College/IL
Whitman College/WA
Williams College/MA