

Graduate Enrollment in Science and Engineering Decreased by 1 Percent in 1994

by Dottie
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Women's enrollment has been increasing rapidly.

Graduate student enrollment in science and engineering (S&E) in U.S. institutions declined slightly in 1994 to 433,152 students, a 1-percent decrease from 1993. This followed 18 years of steady increases. There were underlying changes affecting the total: non-U.S. citizen student enrollment in S&E fields declined for the second year in a row; part-time student enrollment decreased for the first time since 1986; women's enrollment increased, while men's decreased slightly; mathematics enrollment decreased for the second time since 1979; and engineering enrollment declined 3 percent for a second year. In 1994, graduate enrollment in all fields made up a higher proportion of total college enrollments, (12 percent), than it has in any year since 1988.

Since 1983, women's enrollment has been increasing rapidly. Enrollment of female graduate students in S&E was 159,659 in 1994, up from 106,550 in 1983. In 1983, only 31 percent of S&E graduate students were women, whereas in 1994, 37 percent of S&E graduate students were women. Psychology was the only S&E field in which women were the majority (70 percent). Women's increases from 1993 to 1994 in biological and social sciences were 4 percent and 2 percent respectively. The number of women in civil and chemical engineering increased by 3 percent in each field from 1993.

Minority graduate student participation increased only slightly, with the greatest increase reflected among Asian and Pacific Islander enrollment. Enrollment of blacks comprised 5 percent of all U.S. citizens and permanent residents enrolled in graduate studies, up from 4 percent in 1983. Enrollment of Asians and Pacific Islanders rose to 8 percent in 1994, up from 3 percent in 1983. The proportion of white, non-Hispanic students, (at 78 percent of the total in 1994), was down from 81 percent in 1983. Non-U.S. citizen enrollment (at 102,640 in 1994) declined from 105,657 in 1993. A 12-year increase in non-U.S. citizen enrollment in S&E ended in 1992.

Shifts in Enrollment by Field

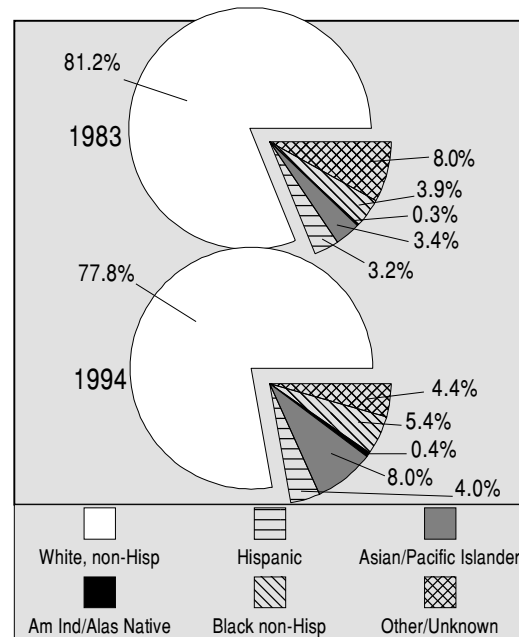
Graduate enrollment in most science fields increased steadily each year since 1983, but the pattern of uniform increases has changed for

some fields during the last two years. Physical and computer sciences enrollment each decreased both in 1993 and 1994, as did mathematics. Although the decreases in physical science and mathematics enrollment (as observed since 1992) have been slight, (1 and 2 percent, respectively), they were the first decreases in 14 years. Computer science enrollment declined for the first time ever in 1993 and continued to decline in 1994.

Biological and social sciences graduate student enrollment has continued to increase steadily since 1984. Agricultural and biological sciences show the highest growth rates of the science fields in 1994, at 3 percent each. Earth, atmospheric, and ocean sciences showed increases for the first time after remaining virtually level over the previous decade.

Engineering graduate student enrollment decreased in both 1993 and 1994 (by 1 percent and

Chart 1. Science and engineering graduate students by race/ethnicity: 1983 and 1994



NOTE: Distribution is for U.S. citizens and permanent residents only.

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

Electronic Dissemination

SRS data are available through the World Wide Web (<http://www.nsf.gov/sbe/srs/stats.htm>) and also through STIS, NSF's online Science and Technology Information System, described in NSF flyer 95-64, "Getting NSF Information and Publications." For a paper copy of the flyer, call 703-306-1130. For an electronic copy of the *STIS User's Guide*, send an e-mail with the phrase "get NSF9410.TXT" to stisserv@nsf.gov. For NSF's Telephonic Device for the Deaf, dial 703-306-0090.

3 percent, respectively), following increases since 1988. Aerospace, electrical, industrial, mechanical, materials, and other engineering enrollment all decreased slightly in 1994. Civil engineering enrollment was up less than 1 percent in 1993 and 2 percent in 1994 after much larger increases earlier in the decade. Chemical engineering enrollment also increased in 1994, by 3 percent. Other engineering enrollment increased 1 percent in 1993 but did not equal the peak reached in 1991. After a modest increase in 1993, other engineering enrollment decreased 6 percent in 1994.

The data presented in this Data Brief were obtained from the 1994 Survey of Graduate Students and Postdoctorates in Science and Engineering, conducted for NSF by Quantum Research Corporation. More detailed data are available in the SRS forthcoming report *Selected Data on Graduate Students and Postdoctorates in Science and Engineering: Fall 1994*.

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Table 1. Graduate students in science and engineering fields in all institutions, by field, enrollment status, sex, and citizenship status: 1983, 1993, and 1994

Field	1983	1993	1994
Total, all fields.....	347,102	436,436	433,152
Sciences, total.....	256,005	319,574	319,287
Physical sciences.....	29,453	35,318	34,484
Earth, atmos., & ocean sciences.....	15,453	15,875	16,095
Mathematical sciences.....	17,380	20,009	19,636
Computer sciences.....	23,333	36,114	33,973
Agricultural sciences.....	12,429	11,953	12,309
Biological sciences.....	45,644	56,526	58,199
Psychology.....	40,905	54,719	54,938
Social sciences.....	71,408	89,060	89,653
Engineering.....	91,097	116,862	113,865
Aerospace engineering.....	2,305	3,940	3,714
Chemical engineering.....	7,563	7,496	7,738
Civil engineering.....	14,910	19,583	20,030
Electrical engineering.....	25,295	35,337	33,715
Industrial engineering.....	9,225	13,593	13,424
Mechanical engineering.....	12,911	18,477	17,730
Metallurgical & materials engineering.....	3,447	5,363	5,191
Other engineering.....	15,441	13,073	12,323
Full-time.....	229,505	294,350	292,962
Part-time.....	117,597	142,086	140,190
Men.....	240,552	279,565	273,493
Women.....	106,550	156,871	159,659
U.S. citizens.....	276,874	330,779	330,512
Non-U.S. citizens.....	70,228	105,657	102,640

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering.

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