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ABSTRACT

This document reports on the enrollment of science and engineering graduate students in the United States in 2000 and reviews data from 1993-1999. Data presented are from the Fall 2000 survey of Graduate Students and Postdoctorates in Science and Engineering. The enrollment data are organized by citizenship, race/ethnicity, and field of study. This also reports on the number of science and engineering postdoctoral appointees in doctorate-granting institutions. (YDS)

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Data Brief

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DATA BRIEF

Growth Continued in 2000 in Graduate Enrollment in Science and Engineering Fields

by Joan S. Burrelli

Enrollment of students with temporary visas rose 11 percent.

Enrollment of science and engineering (S&E) graduate students in the United States increased in 2000, the second increase in two years (table 1). In Fall 2000, 414,570 students were enrolled in S&E programs at the graduate level, a 0.8-percent increase from the 1999 number of 411,257. Despite the increases, the number of science and engineering graduate students in 2000 was still below the 1993 peak of 435,703. Full-time enrollment increased 3 percent from 1999 to 2000, while part-time enrollment decreased 4 percent. About 70 percent of science and engineering graduate students are enrolled full time.

Enrollment by Citizenship and Race/ethnicity

Students with temporary visas more than accounted for the increase in total S&E graduate enrollment. Enrollment of students with temporary

visas increased 11 percent from 109,890 in 1999 to 121,827 in 2000 (table 1). This increase was the fourth consecutive increase in foreign enrollment, following a four-year decline between 1992 and 1996 during which enrollment dropped 10 percent (NSF 2001).

Enrollment of U.S. citizens and permanent residents dropped 3 percent from 1999 to 2000. Among U.S. citizens and permanent residents, the number of white, non-Hispanic graduate S&E students dropped 5 percent from 1999 to 2000, the 7th consecutive annual drop since 1993. Enrollment of Hispanics rose 4 percent and enrollment of blacks and American Indians/Alaskan Natives rose 3 percent each. The number of U.S. citizen and permanent resident Asians/Pacific Islanders enrolled in graduate S&E programs dropped 4 percent from 1999 to 2000 (table 1 and figure 1).

Table 1. Graduate student enrollment in science and engineering, by enrollment status, citizenship and race/ethnicity: 1993-2000

Enrollment status, citizenship and race/ethnicity	1993	1994	1995	1996	1997	1998	1999	2000
Total.....	435,703	431,114	422,438	415,148	407,597	404,809	411,257	414,570
Full-time.....	293,902	292,975	287,164	284,033	280,664	278,941	283,911	292,026
Part-time.....	141,801	138,139	135,274	131,115	126,933	125,868	127,346	122,544
U.S. citizens and permanent residents.....	330,037	328,998	323,935	317,043	308,636	302,837	301,367	292,743
Black, non-Hispanic.....	17,111	17,610	18,285	19,066	19,341	19,649	20,330	20,973
American Indian/Alaskan Native	1,309	1,382	1,516	1,538	1,599	1,607	1,556	1,604
Asian/Pacific Islander.....	24,047	26,470	25,901	25,928	26,012	26,724	27,575	26,403
Hispanic.....	13,380	13,273	14,112	14,571	14,984	15,485	16,533	17,223
White, non-Hispanic.....	256,755	255,633	245,831	238,001	227,975	220,631	216,785	205,894
Other or unknown race/ethnicity.....	17,435	14,630	18,290	17,939	18,725	18,741	18,588	20,646
Students with temporary visas.....	105,666	102,116	98,503	98,105	98,961	101,972	109,890	121,827

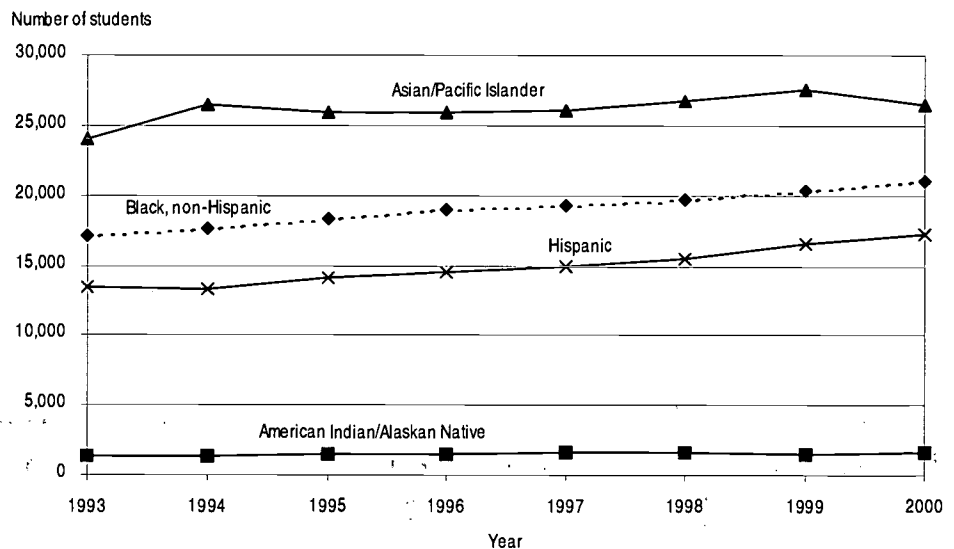
SOURCE: National Science Foundation/Division of Science Resources Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering, 2000.

Electronic Dissemination

SRS data are available through the World Wide Web (<http://www.nsf.gov/sbe/srs/>). For more information about obtaining reports, contact paperpubs@nsf.gov or call 301-947-2722. For NSF's Telephonic Device for the Deaf, dial 703-292-5090.

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Figure 1. Graduate enrollment in science and engineering, by race/ethnicity of non-white U.S. citizens and permanent residents: 1993-2000



SOURCE: National Science Foundation/Division of Science Resources Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering, 2000.

Enrollment by Field

Among science and engineering fields,¹ the greatest gain in enrollment (12 percent) was in computer science. The gain in graduate enrollment in computer science was the largest of any science and engineering field in both absolute number and in percentage increase. Other science fields experiencing gains include astronomy, oceanography, and agricultural economics. Graduate enrollment in chemistry, physics, geosciences, mathematical sciences, agricultural sciences, biological sciences, psychology, and most social sciences continued declines seen over much of the 1990s (table 2).

Engineering enrollment rose 3 percent in 2000, the second increase in two years. A number of engineering fields accounted for

¹ The Survey of Graduate Students and Postdoctorates also collects data on health fields (e.g., nursing, speech pathology, preventive medicine/community health, occupational therapy, physical therapy). Data on health fields are not included in tables in this Data Brief, but will be included in other publications resulting from this survey.

the increase, including aerospace, chemical, civil, electrical, industrial, and mechanical engineering. Enrollment in metallurgical and materials engineering continued to decline.

Postdoctoral appointees

The number of science and engineering postdoctoral appointees ("postdocs") in doctorate-granting institutions rose 1 percent in 2000 to 28,953. More than half (56 percent) of postdocs in 2000 were in the biological sciences. The number of post-docs in the biological sciences increased almost every year since 1993. The number of postdocs in the physical sciences, which account for another 20 percent of postdocs, held fairly steady from 1993 to 2000 (table 3).

Data presented in this Data Brief are from the Fall 2000 Survey of Graduate Students and Postdoctorates in Science and Engineering. Data were collected from approximately 11,800 departments at

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Table 2. Graduate student enrollment in science and engineering, by field: 1993-2000

Field	1993	1994	1995	1996	1997	1998	1999	2000
Total, science and engineering fields.....	435,703	431,114	422,438	415,148	407,597	404,809	411,257	414,570
Sciences, total.....	318,831	318,090	315,237	311,924	306,449	304,771	309,566	309,969
Physical sciences, total.....	35,328	34,466	33,399	32,333	31,105	30,575	30,691	30,463
Astronomy.....	880	973	912	874	778	820	832	888
Chemistry.....	20,131	19,803	19,570	19,334	18,774	18,482	18,416	18,188
Physics.....	13,841	13,162	12,425	11,728	11,147	10,809	10,869	10,836
Other physical sciences.....	476	528	492	397	406	464	574	551
Earth, atmospheric and ocean sciences, total.....	15,721	15,957	15,716	15,183	14,548	14,258	14,083	13,940
Atmospheric sciences.....	1,112	1,109	1,072	1,086	1,092	965	913	963
Geosciences.....	7,759	7,713	7,582	7,304	6,959	6,687	6,637	6,595
Oceanography.....	2,627	2,870	2,723	2,615	2,479	2,562	2,624	2,668
Other earth, atmospheric, and ocean sciences.....	4,223	4,265	4,339	4,178	4,018	4,044	3,909	3,714
Mathematical sciences.....	20,000	19,573	18,504	18,008	16,719	16,485	16,257	15,646
Computer sciences.....	36,213	34,158	33,458	34,626	35,991	38,027	42,560	47,594
Agricultural sciences.....	11,950	12,242	12,422	11,974	11,852	11,844	11,988	11,684
Biological sciences.....	56,292	58,033	58,680	58,060	57,044	56,994	57,115	56,494
Psychology, total.....	54,557	54,554	53,641	53,122	53,126	52,557	51,864	50,689
Social sciences, total.....	88,770	89,107	89,417	88,618	86,064	84,031	85,008	83,459
Agricultural economics.....	2,415	2,289	2,338	2,117	2,043	1,995	2,014	2,079
Anthropology.....	7,361	7,665	7,693	7,773	7,560	7,577	7,633	7,633
Economics.....	13,214	12,913	12,673	12,080	11,097	10,701	10,562	10,763
Geography.....	4,378	4,502	4,371	4,331	4,287	4,326	4,250	4,044
History and philosophy of science.....	369	387	401	409	443	508	557	532
Linguistics.....	3,321	3,279	3,194	3,156	3,068	2,935	2,799	2,674
Political science.....	35,076	34,317	34,298	33,252	32,083	30,828	31,381	31,179
Sociology.....	9,425	9,498	9,564	9,425	9,413	9,058	8,966	8,689
Sociology/anthropology.....	935	987	941	923	948	857	741	745
Other social sciences.....	12,276	13,270	13,944	15,152	15,122	15,246	16,105	15,121
Engineering, total.....	116,872	113,024	107,201	103,224	101,148	100,038	101,691	104,601
Aerospace engineering.....	3,940	3,715	3,343	3,208	3,083	3,137	3,349	3,407
Chemical engineering.....	7,554	7,639	7,452	7,408	7,288	7,093	6,883	7,093
Civil engineering.....	19,583	19,925	19,218	18,528	17,193	16,517	16,226	16,456
Electrical engineering.....	35,290	33,020	30,721	29,702	30,548	31,129	31,382	33,308
Industrial/manufacturing engineering.....	13,905	13,992	13,475	12,675	11,957	11,221	11,803	12,253
Mechanical engineering.....	18,477	17,761	16,363	15,509	15,045	14,696	14,956	15,457
Metallurgical/materials engineering.....	5,410	5,228	4,956	4,747	4,688	4,680	4,481	4,377
Other engineering.....	12,713	11,744	11,673	11,447	11,346	11,565	12,611	12,250

SOURCE: National Science Foundation/Division of Science Resources Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering, 2000.

Computer science enrollment was up 12 percent.

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Table 3. Science and engineering postdoctoral appointees in doctorate-granting institutions, by field: 1993-2000

Field	1993	1994	1995	1996	1997	1998	1999	2000
Total.....	24,605	25,709	26,094	26,518	26,889	27,401	28,531	28,953
Physical sciences.....	5,642	5,849	5,817	5,794	5,856	5,885	6,043	5,880
Earth, atmospheric & ocean sciences.....	762	815	845	859	934	893	919	1,135
Mathematical sciences.....	224	239	262	326	302	274	348	375
Computer sciences.....	164	183	213	250	316	365	328	352
Agricultural sciences.....	695	699	694	672	698	662	709	777
Biological sciences.....	13,777	14,383	14,663	14,907	14,894	15,492	15,856	16,093
Psychology.....	520	546	577	589	567	606	703	698
Social sciences.....	378	390	376	444	362	389	452	435
Engineering.....	2,443	2,605	2,647	2,677	2,960	2,835	3,173	3,208

SOURCE: National Science Foundation/Division of Science Resources Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering, 2000.

approximately 600 institutions of higher education in the United States and outlying areas. The departmental response rate was 99 percent; however, 17 percent of the responding departments required partial imputation of missing data. More detailed data are available in the forthcoming report, *Graduate Students and Postdoctorates in Science and Engineering: Fall 2000*.

References

National Science Foundation, 2001, *Graduate Enrollment in Science and Engineering Increases for the First Time Since 1993* (NSF 01-312), Arlington, VA.

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