Appendix table 4-1.
U.S. institutions of higher education, by type and control: 1953–94 (selected years)

	1953			1970			1976			1987			1994		
Type	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total	Public	Private
Total	1,871	667	1,204	2,837	1,322	1,515	3,072	1,466	1,606	3,389	1,548	1,841	3,596	1,576	2,019
Doctorate granting	131	69	62	173	109	64	184	119	65	213	134	79	236	151	85
Research universities I	NA	NA	NA	52	30	22	51	29	22	70	45	25	88	59	29
Research universities II	NA	NA	NA	40	27	13	47	33	14	34	26	8	37	26	11
Doctoral universities I	NA	NA	NA	53	34	19	56	38	18	51	30	21	51	28	23
Doctoral universities II	NA	NA	NA	28	18	10	30	19	11	58	33	25	60	38	22
Comprehensive universities & colleges	NA	NA	NA	456	309	147	594	354	240	595	331	264	529	275	254
Comprehensive I	NA	NA	NA	323	223	100	381	250	131	424	284	140	435	249	186
Comprehensive II	NA	NA	NA	133	86	47	213	104	109	171	47	124	94	26	68
Liberal arts colleges	713	82	631	721	32	689	583	11	572	572	32	540	637	86	551
Liberal arts colleges I	NA	NA	NA	146	2	144	123	0	123	142	2	140	166	7	159
Liberal arts colleges II	NA	NA	NA	575	30	545	460	11	449	430	30	400	471	79	392
Two-year institutions	521	295	226	1,063	808	255	1,146	909	237	1,367	985	382	1,471	963	508
Specialized institutions	191	45	146	424	64	360	559	70	489	642	66	576	693	72	621
Teachers' colleges	200	176	24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Theological schools	115	0	115	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nontraditional/tribal colleges	NA	NA	NA	NA	NA	NA	6	3	3	NA	NA	NA	29	29	0

NA = not available

SOURCES: U.S. Department of Health, Education, and Welfare, *Biennial Survey of Education in the United States—1952–54: Statistics of Higher Education: Faculty, Students, and Degrees 1953–54* (Washington, DC: U.S. Government Printing Office, 1956); and The Carnegie Foundation for the Advancement of Teaching, *A Classification of Institutions of Higher Education: 1994 Edition* (Princeton: The Carnegie Foundation, 1994).

See figure 4-1 in Volume 1.

Appendix table 4-2.
Enrollment in higher education, by Carnegie institution type: 1967–96

Year	Total	Research I	Research II	Doctorate - granting I	Doctorate - granting II	Compre- hensive I	Compre- hensive II	Liberal arts I	Liberal arts II	Two year	Specialized	Other	Not classified
1967	6,962,403	1,510,037	494,527	437,195	354,542	1,661,186	109,412	203,663	411,819	1,426,223	179,868	26,108	147,823
1968	7,570,446	1,564,981	517,844	455,455	389,249	1,813,749	119,881	209,398	431,621	1,709,796	187,241	27,560	143,671
1969	8,065,047	1,644,645	538,934	483,378	410,395	1,935,316	127,467	215,618	443,108	1,912,663	196,151	29,914	127,458
1970	8,648,124	1,748,776	570,365	509,450	436,660	2,071,472	137,127	221,996	452,087	2,180,252	209,720	32,862	77,357
1971	9,023,721	1,717,735	577,538	519,572	457,251	2,160,655	143,124	228,947	464,590	2,435,108	219,397	35,281	64,523
1972	9,296,311	1,768,282	581,139	521,856	466,371	2,183,621	142,270	233,939	464,218	2,609,721	229,979	31,451	63,464
1973	9,692,665	1,771,632	592,051	526,349	479,905	2,249,865	141,812	236,910	477,097	2,872,230	250,854	36,007	57,953
1974	10,319,864	1,826,768	612,510	545,772	497,963	2,324,124	153,182	238,868	494,426	3,272,215	271,195	34,553	48,288
1975	11,289,129	1,921,415	642,703	560,827	532,135	2,464,953	163,672	240,097	541,017	3,837,843	304,449	35,149	44,869
1976	11,120,093	1,893,269	613,142	568,570	526,247	2,415,834	168,445	240,730	551,890	3,755,311	307,803	33,066	45,786
1977	11,417,253	1,877,142	619,941	579,896	543,360	2,474,300	174,612	243,738	573,678	3,926,266	322,106	35,077	47,137
1978	11,391,377	1,864,590	626,213	581,343	542,558	2,452,812	178,964	251,607	579,494	3,910,980	334,175	34,665	33,976
1979	11,705,797	1,903,347	639,287	594,589	547,418	2,462,361	183,554	251,231	603,830	4,103,418	349,860	34,984	31,918
1980	12,234,644	1,947,444	655,874	604,769	570,666	2,531,409	188,971	260,645	633,712	4,404,276	371,317	35,861	29,700
1981	12,517,753	1,961,015	659,114	610,640	578,653	2,564,542	197,462	257,592	644,924	4,598,599	382,781	37,109	25,322
1982	12,588,520	1,933,340	650,946	606,683	582,638	2,570,690	200,403	252,029	651,192	4,671,136	398,143	37,800	33,520
1983	12,633,930	1,957,038	648,369	612,818	589,126	2,592,710	205,689	254,700	668,374	4,640,343	408,894	39,412	16,457
1984	12,400,392	1,952,748	644,056	604,742	591,400	2,576,072	203,725	253,604	656,099	4,456,709	410,816	38,571	11,850
1985	12,411,945	1,959,685	641,723	603,961	589,103	2,589,406	208,603	254,972	656,146	4,452,391	406,846	38,467	10,642
1986	12,670,121	1,988,839	653,298	609,772	590,694	2,629,336	210,267	257,998	657,695	4,600,773	409,815	39,097	22,537
1987	12,925,116	2,013,832	664,997	619,854	601,073	2,675,959	219,167	262,649	665,726	4,739,689	404,679	41,729	15,762
1988	13,205,540	2,029,065	685,731	631,073	608,663	2,738,439	227,937	269,151	693,086	4,844,655	422,610	39,953	15,177
1989	13,621,203	2,046,868	704,842	644,062	623,988	2,831,502	238,431	266,907	716,902	5,072,690	420,495	40,260	14,256
1990	13,983,255	2,080,412	714,852	657,824	635,833	2,926,402	243,690	268,223	732,654	5,220,767	442,352	42,149	18,097
1991	14,527,724	2,094,841	720,127	660,908	643,519	2,962,524	255,272	268,960	758,023	5,624,420	458,504	44,370	36,256
1992	14,657,118	2,089,045	714,126	655,985	649,549	2,964,105	259,253	266,735	781,247	5,695,378	482,482	46,705	52,508
1993	14,477,792	2,078,622	701,058	648,068	644,533	2,944,113	261,163	264,222	791,140	5,545,475	494,287	48,122	56,989
1994	14,449,476	2,079,559	694,454	639,831	650,816	2,927,198	266,854	264,737	797,156	5,499,655	502,124	49,764	77,328
1995	14,445,438	2,080,163	691,292	638,157	659,197	2,925,255	265,523	267,327	810,206	5,471,342	503,296	49,261	84,419
1996	14,481,915	2,082,713	684,608	632,288	661,015	2,926,182	267,133	269,258	814,037	5,494,333	514,538	50,151	85,659

SOURCES: National Center for Education Statistics, Enrollment Survey (Washington, DC: 1997); and National Science Foundation, Science Resources Studies Division, unpublished tabulations.

See figures 4-2, 4-3 and page 4-8 in Volume 1.

Science & Engineering Indicators – 2000

Appendix table 4-3.
Science and engineering degrees, by degree level and institution type: 1996

Institution type	Total degrees	Total science & engineering	Natural sciences[a]	Math & computer sciences	Social sciences[b]	Engineering	Engineering technology[c]
Bachelor's degrees							
Total	1,179,815	384,674	98,322	37,621	185,617	63,114	16,228
Research I	278,237	127,343	33,910	8,077	55,414	29,942	1,599
Research II	94,708	35,237	8,816	2,304	15,892	8,225	1,137
Doctorate - granting I	79,984	23,211	5,334	2,266	11,865	3,746	1,025
Doctorate - granting II	78,847	27,741	5,949	2,748	12,302	6,742	904
Comprehensive I	386,447	102,281	25,621	12,933	53,982	9,745	6,005
Comprehensive II	36,778	8,466	2,107	1,317	4,717	325	700
Liberal arts I	53,474	26,466	8,393	1,745	15,828	500	0
Liberal arts II	119,547	26,512	7,029	4,410	14,151	922	1,960
Two year	2,258	178	66	30	65	17	484
Specialized	43,756	4,494	714	1,641	363	1,776	2,260
Other	4,997	2,709	383	142	1,010	1,174	39
Not classified	782	36	0	8	28	0	115
Master's degrees							
Total	408,932	95,313	16,158	14,355	37,039	27,761	1,651
Research I	122,101	38,966	7,545	4,855	11,479	15,087	410
Research II	33,052	10,817	1,964	1,369	3,567	3,917	47
Doctorate - granting I	40,424	9,078	1,333	1,817	3,823	2,105	157
Doctorate - granting II	31,255	9,050	1,570	1,748	3,219	2,513	80
Comprehensive I	138,408	21,443	2,903	3,897	11,565	3,078	765
Comprehensive II	7,304	548	65	68	373	42	37
Liberal arts I	4,904	949	171	16	727	35	0
Liberal arts II	4,795	526	49	31	411	35	54
Specialized	22,670	2,133	500	478	516	639	50
Other	3,904	1,738	58	76	1,294	310	51
Not classified	115	65	0	0	65	0	0
Doctoral degrees							
Total	44,754	26,282	10,439	2,030	7,442	6,371	18
Research I	28,587	18,186	7,654	1,477	4,207	4,848	8
Research II	5,096	3,008	1,171	248	833	756	6
Doctorate - granting I	4,684	2,066	479	190	1,081	316	0
Doctorate - granting II	2,185	1,300	455	110	416	319	0
Comprehensive I	788	256	66	0	149	41	4
Comprehensive II	8	8	3	0	5	0	0
Liberal arts I	153	41	11	3	27	0	0
Liberal arts II	118	14	0	0	14	0	0
Specialized	2,235	704	599	0	51	54	0
Other	849	654	1	2	614	37	0
Not classified	51	45	0	0	45	0	0

[a]Natural sciences include physical, earth, atmospheric, oceanographic, biological, and agricultural sciences.

[b]Social sciences include psychology, sociology, and other social sciences.

[c]Engineering technology data are not included in "Total science and engineering."

SOURCES: National Center for Education Statistics, Completion Survey (Washington, DC: 1997); and National Science Foundation, Science Resources Studies Division, unpublished tabulations.

See figures 4-2, 4-4, and 4-5 in Volume 1.

Appendix table 4-4.
Institutions awarding science and engineering degrees, by degree level and institution type: 1996

Institution type	Total	Total science & engineering	Natural sciences[a]	Math & computer sciences	Social sciences[b]	Engineering	Engineering technology[c]
Bachelor's degrees							
Total	1,832	1,468	1,287	1,288	1,356	404	347
Research I	88	87	87	86	86	78	21
Research II	38	38	38	38	38	34	15
Doctorate - granting I	49	48	46	46	48	26	16
Doctorate - granting II	59	58	58	57	57	41	21
Comprehensive I	439	432	416	424	430	131	151
Comprehensive II	92	92	87	80	88	14	17
Liberal arts I	163	157	152	148	157	21	0
Liberal arts II	462	444	375	353	410	34	60
Two - year	53	13	1	7	5	1	15
Specialized	358	80	19	43	25	16	28
Other	20	16	8	4	11	8	2
Not classified	11	3	0	2	1	0	1
Master's degrees							
Total	1,337	764	474	435	625	267	78
Research I	87	87	87	84	87	79	11
Research II	38	38	38	38	38	33	6
Doctorate - granting I	49	49	46	45	46	21	8
Doctorate - granting II	59	59	54	48	54	35	5
Comprehensive I	437	348	190	185	293	70	40
Comprehensive II	90	31	7	6	18	3	2
Liberal arts I	58	25	12	5	18	2	0
Liberal arts II	166	29	4	2	25	3	2
Specialized	315	70	33	19	19	18	3
Other	35	26	3	3	25	3	1
Not classified	3	2	0	0	2	0	0
Doctoral degrees							
Total	489	333	262	170	261	173	5
Research I	88	88	88	81	87	79	3
Research II	38	38	38	35	37	32	1
Doctorate - granting I	50	50	39	26	46	18	0
Doctorate - granting II	59	55	45	26	39	28	0
Comprehensive I	83	35	15	0	19	8	1
Comprehensive II	2	2	1	0	1	0	0
Liberal arts I	11	5	2	1	4	0	0
Liberal arts II	5	1	0	0	1	0	0
Specialized	126	38	33	0	8	6	0
Other	25	20	1	1	18	2	0
Not classified	2	1	0	0	1	0	0

[a]Natural sciences include physical, earth, atmospheric, oceanographic, biological, and agricultural sciences.

[b]Social sciences include psychology, sociology, and other social sciences.

[c]Engineering technology data are not included in "Total science and engineering."

SOURCES: National Center for Education Statistics, Completion Survey (Washington, DC: 1997); and National Science Foundation, Science Resources Studies Division, unpublished tabulations.

See figure 4-2 in Volume 1.

Appendix table 4-5.
Science and engineering degrees earned by underrepresented minorities at the bachelor's level, by institution type: 1977, 1987, 1996

Institution type	Total S&E	Total underrepresented minorities			Black			American Indian/ Alaskan Native			Hispanic		
		Engineering	Natural sciences[a]	Social sciences[b]	Engineering	Natural sciences[a]	Social sciences[b]	Engineering	Natural sciences[a]	Social sciences[b]	Engineering	Natural sciences[a]	Social sciences[b]
Number													
1977													
Total	30,346	2,810	7,574	19,962	1,385	4,489	13,678	135	379	652	1,290	2,706	5,632
Research I	5,941	718	1,526	3,697	333	819	2,454	52	130	154	333	577	1,089
Research II	1,387	176	318	893	92	154	594	21	58	57	63	106	242
Doctorate - granting I	1,479	130	354	995	90	245	767	5	19	32	35	90	196
Doctorate - granting II	2,720	226	688	1,806	109	211	832	12	12	29	105	465	945
Comprehensive I	12,438	1,257	3,091	8,090	564	1,803	5,397	39	129	276	654	1,159	2,417
Comprehensive II	705	10	151	544	6	104	408	1	2	11	3	45	125
Liberal arts I	1,492	12	365	1,115	8	274	890	0	11	20	4	80	205
Liberal arts II	3,514	101	923	2,490	70	814	2,171	1	16	55	30	93	264
Specialized and other	670	180	158	332	113	65	165	4	2	18	63	91	149
1987													
Total	30,939	5,079	11,607	14,253	2,315	6,524	8,391	210	423	657	2,554	4,660	5,205
Research I	8,446	2,065	2,270	4,111	999	1,160	2,317	80	115	199	986	995	1,595
Research II	1,571	361	425	785	208	233	491	20	32	47	133	160	247
Doctorate - granting I	1,731	300	614	817	176	395	503	9	24	24	115	195	290
Doctorate - granting II	2,709	421	1,107	1,181	174	365	454	17	27	58	230	715	669
Comprehensive I	10,595	1,594	4,415	4,586	593	2,539	2,565	68	167	244	933	1,709	1,777
Comprehensive II	681	8	359	314	7	171	215	0	4	12	1	184	87
Liberal arts I	1,722	25	601	1,096	18	353	734	1	20	29	6	228	333
Liberal arts II	2,812	52	1,463	1,297	33	1,116	1,087	2	23	30	17	324	180
Specialized and other	672	253	353	66	107	192	25	13	11	14	133	150	27
1996													
Total	55,114	6,974	16,135	32,005	3,000	8,670	17,385	243	701	1,324	3,731	6,764	13,296
Research I	14,018	2,439	3,283	8,296	1,080	1,414	3,843	103	187	383	1,256	1,682	4,070
Research II	3,297	620	759	1,918	340	375	969	44	81	130	236	303	819
Doctorate - granting I	2,633	254	671	1,708	153	417	1,075	10	36	57	91	218	576
Doctorate - granting II	4,453	669	1,251	2,533	272	560	959	41	53	108	356	638	1,466
Comprehensive I	20,213	2,393	6,398	11,422	987	3,547	6,315	26	253	428	1,380	2,598	4,679
Comprehensive II	1,199	17	445	737	14	296	483	0	10	35	3	139	219
Liberal arts I	2,641	59	632	1,950	55	370	1,148	0	13	59	4	249	743
Liberal arts II	5,326	30	2,226	3,070	16	1,418	2,382	4	52	103	10	756	585
Specialized and other	1,334	493	470	371	83	273	211	15	16	21	395	181	139

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 4-5.
Science and engineering degrees earned by underrepresented minorities at the bachelor's level, by institution type: 1977, 1987, 1996

Institution type	Total S&E	Total underrepresented minorities			Black			American Indian/ Alaskan Native			Hispanic		
		Engineering	Natural sciences[a]	Social sciences[b]	Engineering	Natural sciences[a]	Social sciences[b]	Engineering	Natural sciences[a]	Social sciences[b]	Engineering	Natural sciences[a]	Social sciences[b]
Percent													
1977													
Research I	19.6	25.6	20.1	18.5	24.0	18.2	17.9	38.5	34.3	23.6	25.8	21.3	19.3
Research II	4.6	6.3	4.2	4.5	6.6	3.4	4.3	15.6	15.3	8.7	4.9	3.9	4.3
Doctorate - granting I	4.9	4.6	4.7	5.0	6.5	5.5	5.6	3.7	5.0	4.9	2.7	3.3	3.5
Doctorate - granting II	9.0	8.0	9.1	9.0	7.9	4.7	6.1	8.9	3.2	4.4	8.1	17.2	16.8
Comprehensive I	41.0	44.7	40.8	40.5	40.7	40.2	39.5	28.9	34.0	42.3	50.7	42.8	42.9
Comprehensive II	2.3	0.4	2.0	2.7	0.4	2.3	3.0	0.7	0.5	1.7	0.2	1.7	2.2
Liberal arts I	4.9	0.4	4.8	5.6	0.6	6.1	6.5	0.0	2.9	3.1	0.3	3.0	3.6
Liberal arts II	11.6	3.6	12.2	12.5	5.1	18.1	15.9	0.7	4.2	8.4	2.3	3.4	4.7
Specialized and other	2.2	6.4	2.1	1.7	8.2	1.4	1.2	3.0	0.5	2.8	4.9	3.4	2.6
1987													
Research I	27.3	40.7	19.6	28.8	43.2	17.8	27.6	38.1	27.2	30.3	38.6	21.4	30.6
Research II	5.1	7.1	3.7	5.5	9.0	3.6	5.9	9.5	7.6	7.2	5.2	3.4	4.7
Doctorate - granting I	5.6	5.9	5.3	5.7	7.6	6.1	6.0	4.3	5.7	3.7	4.5	4.2	5.6
Doctorate - granting II	8.8	8.3	9.5	8.3	7.5	5.6	5.4	8.1	6.4	8.8	9.0	15.3	12.9
Comprehensive I	34.2	31.4	38.0	32.2	25.6	38.9	30.6	32.4	39.5	37.1	36.5	36.7	34.1
Comprehensive II	2.2	0.2	3.1	2.2	0.3	2.6	2.6	0.0	0.9	1.8	0.0	3.9	1.7
Liberal arts I	5.6	0.5	5.2	7.7	0.8	5.4	8.7	0.5	4.7	4.4	0.2	4.9	6.4
Liberal arts II	9.1	1.0	12.6	9.1	1.4	17.1	13.0	1.0	5.4	4.6	0.7	7.0	3.5
Specialized and other	2.2	5.0	3.0	0.5	4.6	2.9	0.3	6.2	2.6	2.1	5.2	3.2	0.5
1996													
Research I	25.4	35.0	20.3	25.9	36.0	16.3	22.1	42.4	26.7	28.9	33.7	24.9	30.6
Research II	6.0	8.9	4.7	6.0	11.3	4.3	5.6	18.1	11.6	9.8	6.3	4.5	6.2
Doctorate - granting I	4.8	3.6	4.2	5.3	5.1	4.8	6.2	4.1	5.1	4.3	2.4	3.2	4.3
Doctorate - granting II	8.1	9.6	7.8	7.9	9.1	6.5	5.5	16.9	7.6	8.2	9.5	9.4	11.0
Comprehensive I	36.7	34.3	39.7	35.7	32.9	40.9	36.3	10.7	36.1	32.3	37.0	38.4	35.2
Comprehensive II	2.2	0.2	2.8	2.3	0.5	3.4	2.8	0.0	1.4	2.6	0.1	2.1	1.6
Liberal arts I	4.8	0.8	3.9	6.1	1.8	4.3	6.6	0.0	1.9	4.5	0.1	3.7	5.6
Liberal arts II	9.7	0.4	13.8	9.6	0.5	16.4	13.7	1.6	7.4	7.8	0.3	11.2	4.4
Specialized and other	2.4	7.1	2.9	1.2	2.8	3.1	1.2	6.2	2.3	1.6	10.6	2.7	1.0

[a]Natural sciences include physical, earth, atmospheric, oceanographic, biological, and agricultural sciences, mathematics, and computer sciences.

[b]Social sciences include psychology, sociology, and other social sciences.

SOURCES: National Center for Education Statistics, Completion Survey (Washington, DC: 1997); and National Science Foundation, Science Resources Studies Division, unpublished tabulations.

See text table 4-2 in Volume 1.

Appendix table 4-6.
Baccalaureate-origin institutions of 1991–95 science and engineering doctorate recipients, by Carnegie institution type

Field of doctorate	Total known Carnegie	Research universities	Doctoral universities	Comprehensive colleges and universities	Liberal arts colleges	Specialized institutions
		Number				
Science and engineering, total	76,599	42,757	8,626	12,589	11,556	1,071
Engineering, total	11,900	8,786	1,390	911	489	324
Chemical	1,714	1,355	200	80	51	28
Civil	1,015	715	135	85	51	29
Electrical	3,450	2,599	380	259	124	88
Mechanical	1,845	1,377	227	145	40	56
Other engineering	3,876	2,740	448	342	223	123
Sciences, total	64,699	33,971	7,236	11,678	11,067	747
Physical sciences, total	11,015	5,373	1,280	2,082	2,089	191
Chemistry	6,676	2,634	849	1,564	1,532	97
Physics and astronomy	4,267	2,692	425	511	549	90
Other physical sciences	72	47	6	7	8	4
Earth, atmospheric, & ocean sciences	2,526	1,433	267	357	437	32
Mathematics	2,496	1,344	276	387	432	57
Computer sciences	2,190	1,303	266	328	231	62
Biological & agricultural sciences, total	19,865	11,558	1,893	3,184	3,092	138
Biological sciences	17,222	9,777	1,674	2,763	2,875	133
Agricultural sciences	2,643	1,781	219	421	217	5
Psychology	14,953	6,925	1,956	3,306	2,647	119
Social sciences	11,654	6,035	1,298	2,034	2,139	148
		Percent				
Science and engineering, total	100.0	55.8	11.3	16.4	15.1	1.4
Engineering, total	100.0	73.8	11.7	7.7	4.1	2.7
Chemical	100.0	79.1	11.7	4.7	3.0	1.6
Civil	100.0	70.4	13.3	8.4	5.0	2.9
Electrical	100.0	75.3	11.0	7.5	3.6	2.6
Mechanical	100.0	74.6	12.3	7.9	2.2	3.0
Other engineering	100.0	70.7	11.6	8.8	5.8	3.2
Sciences, total	100.0	52.5	11.2	18.0	17.1	1.2
Physical sciences, total	100.0	48.8	11.6	18.9	19.0	1.7
Chemistry	100.0	39.5	12.7	23.4	22.9	1.5
Physics and astronomy	100.0	63.1	10.0	12.0	12.9	2.1
Other physical sciences	100.0	65.3	8.3	9.7	11.1	5.6
Earth, atmospheric, & ocean sciences	100.0	56.7	10.6	14.1	17.3	1.3
Mathematics	100.0	53.8	11.1	15.5	17.3	2.3
Computer sciences	100.0	59.5	12.1	15.0	10.5	2.8
Biological & agricultural sciences, total	100.0	58.2	9.5	16.0	15.6	0.7
Biological sciences	100.0	56.8	9.7	16.0	16.7	0.8
Agricultural sciences	100.0	67.4	8.3	15.9	8.2	0.2
Psychology	100.0	46.3	13.1	22.1	17.7	0.8
Social sciences	100.0	51.8	11.1	17.5	18.4	1.3

SOURCE: National Science Foundation, Science Resources Studies Division, *Undergraduate Origins of Recent (1991–95) Science and Engineering Doctorate Recipients, Detailed Statistical Tables*, NSF 96-334 (Arlington, VA: 1996).

See page 4-10 in Volume 1.

Appendix table 4-7.
Population of 20- to 24-year-olds in selected countries/regions: 1975–2010
(number in thousands)

Year	China	India	Western Europe	United States	Japan
1975	89,178	52,885	25,819	19,527	9,189
1976	88,370	54,634	26,075	19,922	8,916
1977	87,569	56,441	26,336	20,244	8,652
1978	86,776	58,308	26,602	20,505	8,395
1979	85,990	60,237	26,872	20,716	8,146
1980	85,211	62,229	27,146	21,584	7,904
1981	89,116	63,681	27,628	21,508	7,959
1982	93,201	65,167	28,121	21,433	8,015
1983	97,472	66,688	28,626	21,358	8,071
1984	101,940	68,244	29,143	21,283	8,127
1985	106,612	69,837	29,672	21,208	8,184
1986	110,434	71,349	29,575	20,700	8,329
1987	114,392	72,893	29,482	20,205	8,477
1988	118,493	74,470	29,391	19,721	8,628
1989	122,740	76,082	29,302	19,249	8,781
1990	127,140	77,729	29,356	18,788	8,937
1991	126,109	79,529	28,732	18,780	9,137
1992	125,086	81,372	28,096	18,771	9,342
1993	124,072	83,256	27,504	18,762	9,551
1994	123,066	85,185	26,937	17,853	9,765
1995	122,068	87,158	26,393	17,626	9,984
1996	116,094	87,594	25,824	17,501	9,664
1997	110,412	88,033	25,255	17,377	9,354
1998	105,008	88,473	24,686	17,254	9,054
1999	99,869	88,916	24,117	17,131	8,763
2000	94,981	89,361	23,548	17,010	8,482
2001	94,112	92,010	23,324	18,068	8,255
2002	93,251	94,738	23,100	18,292	8,035
2003	92,398	97,546	22,876	18,515	7,820
2004	91,553	100,438	22,652	18,739	7,611
2005	90,715	103,415	22,428	18,962	7,408
2006	95,379	104,983	25,482	19,038	7,282
2007	100,284	106,575	28,535	19,113	7,158
2008	105,440	108,190	31,589	19,189	7,036
2009	110,862	109,831	34,642	19,264	6,917
2010	116,562	111,496	37,696	19,340	6,799

SOURCES: U.S. Bureau of the Census, *Current Population Reports,* series P-25, nos. 519 and 917; and World Bank, Population and Human Resources Department, *Population Projections, 1992–1993 Edition* (Washington, DC).

See figure 4-6 in Volume 1.

Appendix table 4-8.
Percentage of freshmen intending to major in science and engineering, by field, sex, and race/ethnicity: 1972–98

Field and sex	1972	1974	1976	1978	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
All freshmen	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
White																							
Total intending S&E majors	31.4	35.4	33.9	32.6	31.9	31.7	32.4	33.4	32.7	31.6	29.5	28.6	28.1	30.6	30.0	31.7	32.2	33.0	32.7	31.9	33.6	32.5	30.3
Natural sciences[a]	9.7	13.9	14.0	10.6	9.0	8.9	7.9	8.9	9.2	8.7	7.9	7.4	7.5	7.8	8.4	9.2	10.3	11.1	12.7	12.7	12.2	11.4	9.9
Math & computer sciences	3.7	2.8	2.3	2.6	3.1	4.7	5.9	5.7	3.8	3.1	2.5	2.2	2.1	2.3	2.2	2.1	2.1	2.4	2.3	2.6	2.7	3.3	3.3
Social sciences[b]	11.4	10.9	9.0	9.1	8.4	7.2	7.0	7.3	8.7	9.1	8.9	10.4	10.3	11.2	10.6	9.8	10.4	10.2	9.8	9.3	9.8	9.2	9.4
Engineering	6.6	7.8	8.6	10.3	11.4	10.9	11.6	11.5	11.0	10.7	10.2	8.6	8.2	9.3	8.8	10.6	9.4	9.3	7.9	7.3	8.9	8.6	7.7
Males intending S&E majors	34.5	41.3	40.4	38.5	39.0	39.9	40.2	42.0	40.2	38.4	35.8	33.3	32.3	35.3	34.4	35.8	35.9	36.6	35.5	35.5	37.4	36.6	33.8
Natural sciences[a]	12.9	17.5	17.5	12.7	10.8	11.1	9.8	11.0	10.7	10.7	9.7	9.3	9.3	9.0	10.2	9.1	11.4	12.3	13.5	13.5	12.2	11.3	9.8
Math & computer sciences	3.8	3.4	2.7	3.0	3.7	5.6	6.6	6.6	4.9	4.0	3.3	3.2	3.0	3.4	3.0	3.0	2.9	3.5	3.5	4.3	4.3	5.5	5.7
Social sciences[b]	5.9	6.3	5.3	5.0	4.5	4.0	3.9	4.4	4.7	5.1	4.6	5.1	5.2	6.1	5.7	4.9	5.1	4.7	4.7	4.4	4.7	4.3	3.7
Engineering	11.9	14.1	14.9	17.8	20.0	19.2	19.9	20.0	19.9	18.6	18.2	15.7	14.8	16.8	15.5	18.8	16.5	16.1	13.8	13.3	16.2	15.5	14.6
Females intending S&E majors	20.1	21.3	21.2	21.6	20.6	21.6	22.2	22.8	22.1	22.4	20.5	21.4	21.3	23.6	22.7	24.8	24.7	25.8	26.1	26.0	26.9	26.1	23.9
Natural sciences[a]	5.8	9.6	9.6	8.1	6.7	6.7	5.9	6.8	7.0	7.0	6.1	5.6	5.8	6.6	6.2	9.1	8.8	9.9	11.4	12.3	11.9	11.5	10.0
Math & computer sciences	3.4	2.3	2.0	2.3	2.6	3.9	5.3	4.9	2.7	2.1	1.8	1.3	1.4	1.4	1.6	1.3	1.3	1.2	1.3	1.1	1.2	1.5	1.4
Social sciences[b]	10.8	9.3	7.7	8.7	8.2	7.4	7.5	7.4	9.6	10.2	10.0	12.3	11.7	12.8	11.9	11.3	11.5	11.1	10.4	10.4	10.9	10.1	10.1
Engineering	0.1	0.1	1.9	2.5	3.1	3.6	3.5	3.7	2.8	3.1	2.6	2.2	2.4	2.8	3.0	3.1	3.1	3.6	3.0	2.2	2.9	3.0	2.4
Asian American																							
Total intending S&E majors	40.9	49.1	49.8	45.9	48.4	47.6	49.8	50.1	48.7	50.9	46.1	46.9	44.4	43.1	42.6	44.0	43.4	42.5	44.4	40.3	42.6	43.9	43.4
Natural sciences[a]	11.1	22.5	20.3	16.1	11.9	12.7	13.3	15.0	15.2	15.9	14.5	15.1	14.6	11.9	12.8	14.7	16.1	16.2	16.4	15.3	16.2	13.6	13.8
Math & computer sciences	7.2	5.3	3.8	4.1	5.0	6.1	7.3	7.5	5.4	3.2	4.2	3.9	3.3	2.7	3.5	3.6	2.5	2.9	4.2	4.6	4.9	6.8	7.9
Social sciences[b]	8.2	7.9	7.9	6.5	5.9	5.7	6.2	6.1	6.5	7.5	6.8	8.2	9.5	9.3	9.4	8.3	8.2	8.7	7.5	7.0	7.4	6.7	7.1
Engineering	14.4	13.4	17.8	19.2	25.6	23.1	23.0	21.5	21.6	24.3	20.6	19.7	17.0	19.2	16.9	17.4	16.6	14.7	16.3	13.4	14.1	16.8	14.6
Males intending S&E majors	48.9	60.1	60.3	55.2	59.3	58.3	59.6	59.8	59.9	60.0	56.2	55.5	52.8	51.8	52.3	54.1	51.3	50.8	52.6	48.3	50.1	54.9	52.0
Natural sciences[a]	12.0	26.9	20.9	15.8	13.5	13.2	14.7	16.9	16.3	15.7	14.9	14.5	15.5	13.1	14.4	15.5	16.3	16.3	16.3	15.1	15.0	12.3	12.3
Math & computer sciences	6.1	5.4	3.8	4.0	3.8	5.4	5.7	6.6	5.5	3.1	4.4	4.6	3.9	3.1	4.7	4.8	3.6	4.1	5.8	6.5	7.3	10.2	11.9
Social sciences[b]	6.4	5.7	5.9	5.0	4.0	3.4	4.3	3.9	5.1	6.5	4.2	5.4	6.9	5.6	6.6	5.8	5.7	6.5	5.0	4.7	4.8	4.9	4.4
Engineering	24.4	22.1	29.7	30.4	38.0	36.3	34.9	32.4	33.0	34.7	32.7	31.0	26.5	30.0	26.6	28.0	25.7	23.9	25.5	22.0	23.0	27.5	23.4
Females intending S&E majors	30.1	36.6	38.3	36.7	34.7	36.3	40.0	39.5	37.4	40.2	36.0	37.4	35.7	34.7	33.2	34.3	35.7	34.2	35.7	32.7	34.9	33.6	35.3
Natural sciences[a]	9.7	17.4	19.6	16.5	10.1	11.9	11.7	12.9	14.0	16.2	14.3	15.5	13.7	11.4	11.1	14.3	15.7	15.8	16.7	15.8	17.0	14.9	15.0
Math & computer sciences	8.3	5.3	3.7	4.3	6.5	7.0	9.1	8.4	5.4	3.3	4.1	3.2	2.8	2.4	2.4	2.4	1.6	1.9	2.4	2.7	2.5	3.4	4.3
Social sciences[b]	10.2	10.9	10.0	8.0	7.6	7.9	8.7	8.1	7.6	8.4	9.5	11.1	12.6	13.5	12.2	10.9	10.9	10.7	10.0	9.2	10.0	8.6	9.6
Engineering	1.9	3.0	5.0	7.9	10.5	9.5	10.5	10.1	10.4	12.3	8.1	7.6	6.6	7.4	7.5	6.7	7.5	5.8	6.6	5.0	5.4	6.7	6.4

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 4-8.
Percentage of freshmen intending to major in science and engineering, by field, sex, and race/ethnicity: 1972–98

Field and sex	1972	1974	1976	1978	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Black																							
Total intending S&E majors	24.5	29.3	26.7	27.2	28.1	29.1	32.0	30.0	27.6	29.0	26.6	29.6	29.7	30.0	29.7	34.1	35.8	36.5	33.8	34.0	34.6	36.2	32.7
Natural sciences[a]	4.8	9.4	7.1	5.7	4.7	5.0	5.3	5.3	5.8	5.8	4.8	5.1	4.7	5.7	5.3	6.4	7.8	8.9	8.8	10.4	10.0	9.9	8.2
Math & computer sciences	3.2	2.2	1.5	2.6	4.7	6.8	8.3	9.0	6.9	7.0	4.5	4.4	4.0	4.4	4.5	5.0	4.7	4.8	4.5	5.3	5.5	6.3	7.2
Social sciences[b]	12.1	12.1	11.5	10.6	8.4	7.4	7.0	6.9	7.4	6.7	8.9	9.6	12.9	10.7	11.0	10.4	10.6	9.9	10.9	9.7	10.0	10.0	11.2
Engineering	4.4	5.6	6.6	8.3	10.3	9.9	11.4	8.8	7.5	9.5	8.4	10.5	8.1	9.2	8.9	12.3	12.7	12.9	9.6	8.6	9.1	10.0	6.1
Males intending S&E majors	30.3	34.5	34.2	33.1	34.8	35.9	38.5	35.7	33.5	34.8	31.8	35	34.1	34.2	32.8	39.7	41.8	42.8	38.1	37.7	37.2	41.5	34.1
Natural sciences[a]	6.2	9.6	10.4	6.0	5.0	5.7	5.8	6.2	6.3	5.8	5.0	5.3	5.7	5.2	5.7	6.0	7.7	8.5	8.1	9.3	7.7	8.7	6.8
Math & computer sciences	3.3	2.8	1.6	3.2	4.8	7.0	8.0	8.9	7.4	7.8	4.9	5.3	4.2	5.3	5.0	5.0	5.0	5.7	5.0	6.7	6.9	8.4	10.0
Social sciences[b]	11.0	11.5	9.6	8.4	6.5	6.0	5.4	5.3	7.0	5.3	7.1	6.9	9.7	7.7	7.4	7.4	8.0	7.4	8.0	6.2	6.2	6.7	7.1
Engineering	9.8	10.6	12.6	15.5	18.5	17.2	19.3	15.3	12.8	15.9	14.8	17.5	14.5	16.0	14.7	21.3	21.1	21.2	17.0	15.5	16.4	17.7	10.2
Females intending S&E majors	19.7	22.7	24.0	23.3	23.4	24.3	27.2	25.5	23.4	25.0	23.0	25.8	26.7	27.5	28.0	30.7	32.1	32.8	30.4	31.5	33.0	32.6	31.7
Natural sciences[a]	3.2	7.0	7.5	5.8	4.4	4.8	4.9	4.3	5.6	5.9	4.4	4.7	4.1	5.8	5.6	6.8	8.0	9.5	8.9	10.7	11.4	10.4	9.0
Math & computer sciences	3.1	1.6	1.4	2.3	4.6	6.6	8.5	9.1	6.6	6.5	4.3	3.8	3.8	4.0	4.1	5.0	4.5	4.2	4.2	4.5	4.7	5.0	5.4
Social sciences[b]	13.0	12.6	12.8	12.0	9.7	8.3	7.9	7.9	7.5	7.7	10.0	11.3	14.8	12.3	13.3	12.3	12.7	11.5	12.4	11.8	12.4	12.2	14.1
Engineering	0.4	1.5	2.3	3.2	4.7	4.6	5.9	4.2	3.7	4.9	4.3	6.0	4.0	5.4	5.0	6.6	6.9	7.6	4.9	4.5	4.5	5.0	3.2
Hispanic																							
Total intending S&E majors	29.6	37.4	32.0	27.2	35.1	34.3	32.9	34.1	32.2	36.5	34.7	34.1	30.5	32.6	33.4	30.0	33.4	34.2	37.8	36.4	35.0	36.0	32.5
Natural sciences[a]	5.5	13.8	11.6	6.8	8.9	9.3	6.8	8.4	8.1	8.8	8.6	8.2	6.8	7.3	7.4	7.4	8.8	9.4	10.2	10.1	9.9	10.5	9.2
Math & computer sciences	3.6	2.7	1.7	2.0	3.1	3.5	5.2	4.7	6.1	3.4	2.5	2.1	2.1	2.2	2.3	2.6	2.4	2.0	2.6	2.7	2.9	3.3	3.7
Social sciences[b]	13.2	13.3	10.6	9.4	10.4	7.4	9.0	8.3	7.8	11.5	11.4	12.5	12.6	12.8	12.8	9.7	12.0	12.5	13.6	12.5	12.1	11.6	11.0
Engineering	7.3	7.6	8.1	9.0	12.7	14.1	11.9	12.7	10.2	12.8	12.2	11.3	9.0	10.3	10.9	10.3	10.2	10.3	11.4	11.1	10.1	10.6	8.6
Males intending S&E majors	33.9	45.1	39.5	34	41.3	41.7	39.8	40.3	41.7	44.3	41.7	40.7	35.4	38.7	39.0	34.8	37.6	38.7	42.3	41.4	41.2	41.4	37.8
Natural sciences[a]	6.9	16.9	14.0	7.8	9.4	9.0	7.9	8.8	9.0	9.9	8.7	8.7	7.5	7.8	8.9	7.4	9.2	9.8	10.6	9.1	9.9	9.5	9.2
Math & computer sciences	4.3	2.8	2.6	3.3	2.7	4.0	5.1	5.5	7.7	4.6	3.0	2.5	2.7	2.8	2.7	3.6	3.2	2.8	4.0	3.9	4.3	5.1	4.9
Social sciences[b]	8.8	10.8	8.6	6.9	8.1	5.1	7.3	6.4	7.7	8.4	8.0	10.1	9.3	9.9	7.9	6.8	8.1	9.4	9.1	8.2	8.8	7.6	7.8
Engineering	13.9	14.6	14.3	16.0	21.1	23.6	19.5	19.6	17.3	21.4	22.0	19.4	15.9	18.2	19.5	17.0	17.1	16.7	18.6	20.2	18.2	19.2	15.9
Females intending S&E majors	24.5	29.9	24.0	21.0	30.0	26.9	26.6	28.7	24.5	30.0	29.0	28.9	26.7	28.2	28.9	25.7	29.5	29.6	34.7	32.0	30.1	31.8	28.6
Natural sciences[a]	3.8	10.7	8.9	6.1	8.7	9.4	5.6	8.0	7.4	7.8	8.6	7.8	6.1	7.0	6.2	7.9	8.4	8.7	10.2	11.0	9.6	11.3	9.4
Math & computer sciences	2.7	2.6	0.9	0.9	3.5	2.9	5.4	4.0	4.8	2.2	2.1	1.8	1.7	1.7	2.1	1.7	1.6	1.2	1.6	1.5	1.9	1.8	2.8
Social sciences[b]	18.0	16.0	12.8	11.9	12.4	9.2	10.5	10.3	7.9	14.1	14.2	14.7	15.3	15.3	16.2	12.4	15.3	15.3	17.2	16.0	14.6	14.7	13.6
Engineering	0.0	0.6	1.4	2.1	5.4	5.4	5.1	6.4	4.4	5.9	4.1	4.6	3.6	4.2	4.4	3.7	4.2	4.4	5.7	3.5	4.0	4.0	2.8

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 4-8.
Percentage of freshmen intending to major in science and engineering, by field, sex, and race/ethnicity: 1972–98

Field and sex	1972	1974	1976	1978	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
American Indian																							
Total intending S&E majors	29.1	35.4	30.5	32.0	34.0	26.8	27.7	26.1	27.1	26.4	29.6	30.7	30.8	32.7	30.9	30.3	30.9	30.8	29.4	29.8	32.2	33.8	31.7
Natural sciences[a]	9.8	16.4	13.7	9.3	7.6	6.6	6.7	6.7	9.2	6.9	7.7	8.4	7.4	6.5	10.6	8.4	9.1	9.5	9.9	11.3	11.8	11.4	10.3
Math & computer sciences	3.2	1.5	2.5	2.2	3.9	3.0	4.6	4.7	3.6	3.3	2.4	2.6	2.3	1.8	1.7	2.4	2.0	2.4	2.4	2.5	3.3	4.3	3.9
Social sciences[b]	10.4	10.6	7.8	10.2	9.2	7.0	5.9	5.9	6.6	9.5	9.5	9.7	12.6	13.9	10.6	9.6	10.6	10.6	10.3	9.6	10.2	10.7	11.2
Engineering	5.7	6.9	6.5	10.3	13.3	10.2	10.5	8.8	7.7	6.7	10.0	10.0	8.5	10.5	8.0	9.9	9.2	8.3	6.8	6.4	6.9	7.4	6.3
Males intending S&E majors	37.4	46.1	39.4	38.1	41.5	39.2	34.2	35.2	33.2	32.6	39.7	39.9	37.3	39.1	35.9	36.6	37.6	36.5	34.1	36.3	38.5	37.3	36.2
Natural sciences[a]	13.3	20.9	17.2	11.8	9.9	8.8	6.9	9.7	9.9	10.3	9.8	11.0	9.5	8.5	12.3	8.4	9.6	11.7	10.0	11.8	11.6	10.4	9.1
Math & computer sciences	3.9	1.8	3.4	1.9	4.8	4.7	6.1	5.1	3.5	4.6	3.0	3.4	3.4	2.0	2.2	3.3	3.0	2.8	3.5	4.3	5.7	6.5	7.1
Social sciences[b]	9.1	9.7	7.0	7.5	7.5	6.2	2.7	5.6	5.8	6.3	9.5	7.3	8.5	11.4	7.4	6.7	9.2	8.3	8.1	7.3	7.8	7.3	7.6
Engineering	11.1	13.7	11.8	16.9	19.3	19.5	18.5	14.8	14.0	11.4	17.4	18.2	15.9	17.2	14.0	18.2	15.8	13.7	12.5	12.9	13.4	13.1	12.4
Females intending S&E majors	21.7	25.4	21.8	25.9	26.7	15.6	22.4	18.8	22.1	20.6	21.4	23.7	25.6	28.1	26.8	25.5	25.5	26.5	26.5	25.2	27.5	30.9	28.4
Natural sciences[a]	6.7	12.0	10.6	6.9	5.3	4.5	6.7	4.6	9.0	3.9	5.9	6.6	5.7	5.2	9.1	8.5	8.4	7.8	10.0	11.0	11.7	12.2	11.1
Math & computer sciences	2.8	1.3	1.6	2.6	3.2	1.5	3.1	4.4	3.7	2.1	1.8	1.9	1.4	1.5	1.3	1.7	1.2	2.1	1.6	1.2	1.6	2.7	1.5
Social sciences[b]	11.6	11.1	8.5	12.8	11.3	7.7	8.9	6.1	7.4	12.1	9.5	11.4	16.1	15.6	13.0	11.9	11.8	12.2	12.1	11.2	11.7	12.9	13.7
Engineering	0.6	1.0	1.1	3.6	6.9	1.9	3.7	3.7	2.0	2.5	4.2	3.8	2.4	5.8	3.4	3.4	4.1	4.4	2.8	1.8	2.5	3.1	2.1

[a]Natural sciences here include physical, earth, atmospheric, oceanographic, biological, and agricultural sciences.

[b]Social sciences include psychology, sociology, and other social sciences.

SOURCE: University of California at Los Angeles, Higher Education Research Institute, *Survey of the American Freshman: National Norms* (Los Angeles: 1999), unpublished tabulations.

Appendix table 4-9.
Of freshmen intending to major in science and engineering, percentage by race/ethnicity and selected fields: 1971–98

Field/subfield	1971	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
White																								
All S&E fields	91.7	87.6	87.1	87.9	86.2	85.9	87.4	85.2	85.7	85.9	84.1	84.1	83.1	80.2	81.9	78.9	76.9	78.9	79.1	76.7	76.5	76.7	76.4	76.0
Physical sciences	94.5	89.5	90.5	91.4	89.9	90.0	89.9	87.9	89.5	89.0	85.1	87.4	87.3	87.7	86.0	86.5	82.5	83.8	82.6	80.3	82.7	81.2	82.2	82.2
Biological sciences	93.6	88.8	89.4	89.0	88.1	88.3	87.8	85.8	85.2	84.2	83.8	82.7	81.8	79.9	80.8	77.8	76.2	78.4	78.6	77.8	76.6	76.4	76.9	76.0
Social sciences	88.2	84.0	83.1	83.5	83.3	83.4	87.0	84.7	84.8	85.4	87.2	84.4	85.0	80.5	83.6	78.2	77.8	80.0	80.1	77.7	77.6	77.7	78.6	77.9
Engineering	93.2	88.8	88.0	89.2	86.7	86.1	87.5	85.8	87.3	87.8	83.4	84.1	81.6	80.2	81.1	79.3	76.1	77.2	77.3	73.8	74.3	76.0	75.1	76.3
Asian American																								
All S&E fields	0.8	1.8	1.8	1.8	2.2	2.2	2.0	2.5	2.8	2.7	4.4	4.6	4.8	5.2	4.8	5.3	6.0	5.8	5.7	7.9	7.0	6.8	7.9	7.8
Physical sciences	1.2	2.3	2.7	2.3	2.8	2.3	2.8	3.6	3.5	4.0	6.1	5.4	5.0	5.5	4.4	5.4	5.8	5.9	5.5	8.0	6.8	6.6	6.3	7.2
Biological sciences	0.7	2.1	2.1	2.3	2.2	2.5	2.5	3.2	4.2	3.9	6.6	7.1	7.7	8.6	7.0	7.7	9.2	8.4	8.1	9.8	8.6	8.5	8.5	9.0
Social sciences	0.5	0.9	1.0	1.0	0.9	1.1	1.1	1.6	1.4	1.6	2.5	2.5	2.8	3.4	3.1	3.7	4.2	3.8	4.5	5.0	4.8	4.6	4.9	4.8
Engineering	1.5	2.4	2.4	2.2	3.1	2.9	2.7	3.0	3.4	3.5	5.7	5.8	6.0	6.4	6.4	6.4	6.7	6.9	6.3	10.5	8.9	8.0	10.3	9.8
Black																								
All S&E fields	6.6	8.5	8.6	8.2	9.1	9.7	8.6	10.4	9.7	9.5	9.4	8.6	9.6	11.6	10.3	12.1	13.2	11.2	11.4	11.1	11.5	11.7	11.5	11.6
Physical sciences	3.7	6.3	5.0	4.7	5.8	6.0	5.6	6.9	6.0	5.6	7.7	5.3	5.7	5.3	7.2	5.3	8.6	7.2	9.0	8.7	8.1	9.1	7.9	7.5
Biological sciences	4.7	6.9	6.2	6.3	6.7	7.0	7.1	8.9	7.9	9.5	6.8	6.8	7.6	8.1	9.0	10.2	10.0	8.9	9.2	8.4	10.6	10.3	10.4	10.3
Social sciences	10.3	12.5	12.8	12.7	12.7	12.4	10.1	10.7	11.9	11.4	8.9	10.3	9.7	13.0	10.2	14.1	13.7	11.5	10.9	12.1	11.5	12.8	12.2	13.3
Engineering	4.5	6.8	7.3	6.7	7.7	8.7	7.6	9.4	7.6	7.0	8.5	7.4	9.8	10.1	9.4	10.6	13.4	12.2	12.7	11.0	10.9	10.7	10.3	7.7
Hispanic																								
All S&E fields	0.6	1.3	1.9	1.4	2.0	1.6	1.3	1.8	1.3	1.2	1.6	2.1	1.9	2.3	2.3	2.5	2.7	4.1	4	4.9	5.1	5.2	5.0	5.6
Physical sciences	0.3	1.3	0.6	1.1	1.5	1.2	1.3	1.0	0.7	1.2	1.0	1.2	1.4	1.7	1.7	1.8	2.1	2.6	2.9	4.0	2.8	3.4	3.8	3.9
Biological sciences	0.6	1.9	1.9	1.9	2.2	1.9	2.6	2.0	1.8	1.9	1.8	2.2	2.2	2.7	2.2	2.5	2.8	4.2	5.9	4.1	4.5	4.6	4.9	5.4
Social sciences	0.9	1.8	2.6	2.0	2.6	2.1	1.4	2.0	1.5	1.2	1.5	2.1	1.9	2.5	2.4	2.7	2.9	4.9	7.5	5.6	6.1	5.8	5.7	6.6
Engineering	0.5	1.1	1.5	1.3	1.6	1.3	1.3	1.7	1.3	1.1	1.5	2.1	1.9	2.2	2.2	2.5	2.5	3.9	5.3	5.3	5.9	5.1	4.9	5.5
American Indian																								
All S&E fields	0.9	0.9	0.7	0.7	0.8	0.8	0.9	0.9	1.0	0.9	0.9	0.9	1.0	0.9	1.0	1.3	1.7	1.8	1.8	2.1	2.1	2.3	3.1	2.1
Physical sciences	0.8	1.2	0.5	0.6	1.0	0.6	0.8	0.9	1.3	0.6	0.8	1.1	1.1	0.8	0.9	2.1	1.5	1.5	1.3	2.1	2.2	2.9	3.4	2.2
Biological sciences	1.0	1.0	0.8	0.7	0.7	0.8	0.8	1.0	1.1	1.5	1.2	1.0	1.1	1.0	0.9	1.6	1.8	1.8	1.9	2.0	2.3	2.3	3.2	2.2
Social sciences	1.0	1.0	0.8	0.8	0.8	0.9	1.1	0.9	1.4	0.6	0.9	1.0	1.0	0.9	1.2	1.3	1.9	1.8	2.3	2.2	2.5	2.2	3.5	2.4
Engineering	0.7	0.7	0.5	0.6	0.7	0.7	0.9	0.9	0.9	0.7	0.6	0.9	1.0	0.8	1.0	1.1	1.5	1.6	1.5	1.7	1.8	1.8	2.3	1.6

NOTE: Details may not add to totals because students may check more than one race/ethnicity, e.g., white and Hispanic.

SOURCE: University of California at Los Angeles, Higher Education Research Institute, *Survey of the American Freshman: National Norms* (Los Angeles: 1999), unpublished tabulations.

See page 4-11 in volume 1.

Appendix table 4-10.
High school mathematics and science courses reported by entering freshmen, percentage by race/ethnicity: 1984 and 1998

Race/ethnicity	Four years of high school math		Two to three years of physical sciences		Two to three years of biological sciences	
	1984	1998	1984	1998	1984	1998
White	59	71	50	50	34	41
Asian American	65	75	56	49	35	42
Black	50	67	40	31	31	30
Hispanic	51	65	42	39	24	35
American Indian	37	64	43	45	31	39

SOURCE: University of California at Los Angeles, Higher Education Research Institute, *Survey of the American Freshman: National Norms* (Los Angeles: 1999), unpublished tabulations.

See page 4-12 in Volume 1 *Science & Engineering Indicators – 2000*

Appendix table 4-11.
Level of proficiency in mathematics and science among 12th graders, percentage by race/ethnicity and sex: 1988 cohort in 1992

Race/ethnicity and sex	Below level 1	Level 1	Level 2	Level 3	Level 4 or 5
Proficiency in mathematics					
Total					
Underrepresented minority	10.9	37.5	19.5	18.2	13.9
Asian/Pacific Islander and white	6.4	18.7	13.5	24.7	36.7
Female	7.1	25.2	14	24.5	29.3
Male	7.6	20.9	15.6	22.2	33.7
Female					
Underrepresented minority	11.4	40.5	17.6	17.9	12.5
Asian/Pacific Islander and white	5.8	20.5	12.9	26.3	34.5
Male					
Underrepresented minority	10.3	34.4	21.4	18.5	15.4
Asian/Pacific Islander and white	6.9	17.1	13.9	23.2	38.9
Proficiency in science					
Total					
Underrepresented minority	31.8	37.1	23.4	7.7	
Asian/Pacific Islander and white	13.5	29.5	32.3	24.7	
Female	19.8	31.4	32.0	16.8	
Male	15.6	31.0	28.7	24.7	
Female					
Underrepresented minority	35.6	36.6	21.9	5.9	
Asian/Pacific Islander and white	15.0	29.8	35.1	20.2	
Male					
Underrepresented minority	28.0	37.6	24.9	9.5	
Asian/Pacific Islander and white	12.1	29.1	29.8	29.0	

NOTES: As a result of rounding, rows may not sum to 100 percent. The total sample size in the analysis is 16,489. Proficiency in science was measured on three levels.

SOURCE: National Center for Education Statistics, National Education Longitudinal Study of 1988 (NELS:88), unpublished tabulations.

See page 4-13 in Volume 1.

Science & Engineering Indicators – 2000

Appendix table 4-12.
Percentage of freshmen reporting need for remedial work in science or mathematics, by intended major and sex: 1977, 1989, 1997

Intended major	1977 Science	1977 Math	1989 Science	1989 Math	1997 Science	1997 Math
Total						
S&E majors	8.3	20.1	8.8	20.5	9.5	21.6
Physical science majors	5.0	12.1	6.2	12.2	6.9	12.0
Biological science majors	6.6	22.5	10.6	23.3	10.2	23.3
Social science majors	11.3	28.3	9.1	26.3	10.8	28.6
Engineering majors	6.9	13.3	8.5	13.3	8.4	14.4
Non-S&E majors	11.5	24.7	10.8	24.4	11.2	25.5
Male						
S&E majors	6.0	16.0	8.1	15.4	7.0	16.4
Physical science majors	3.3	9.3	4.4	9.3	5.8	9.4
Biological science majors	5.1	19.9	6.6	19.2	7.4	18.1
Social science majors	7.5	22.4	7.0	21.2	7.0	21.5
Engineering majors	6.3	13.3	7.4	12.7	7.2	13.8
Non-S&E majors	7.3	20.4	8.5	20.6	8.7	21.2
Female						
S&E majors	12.0	26.9	11.2	26.9	12.3	27.5
Physical science majors	9.9	20.0	9.6	17.6	8.7	16.1
Biological science majors	8.4	25.5	10.4	26.9	11.9	26.6
Social science majors	14.1	32.6	10.6	30.0	13.1	32.9
Engineering majors	12.5	12.6	13.5	16.2	13.3	16.9
Non-S&E majors	15.0	28.2	12.5	27.2	13.0	28.4

SOURCE: University of California at Los Angeles, Higher Education Research Institute, *Survey of the American Freshman: National Norms* (Los Angeles: 1998), unpublished tabulations.

See figure 4-8 in Volume 1.

Science & Engineering Indicators – 2000

Appendix table 4-13.
Undergraduate enrollment in engineering and engineering technology programs: 1979–98

Enrollment	1979	1981	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Engineering																		
Total students	366,299	420,402	441,205	429,499	420,864	407,657	392,198	385,412	378,277	380,287	379,977	382,525	375,944	367,298	363,315	356,177	365,358	366,991
Total full time	340,488	387,577	406,144	394,635	384,191	369,520	356,998	346,169	338,529	338,842	339,397	344,126	337,817	328,463	325,489	317,772	326,458	329,657
Freshman	103,724	115,280	109,638	105,249	103,225	99,238	95,453	98,009	95,420	94,346	93,002	93,427	88,875	85,047	86,299	85,375	90,882	94,909
Sophomore	78,594	87,519	89,515	83,946	79,627	76,195	73,317	71,030	71,267	72,204	71,257	71,644	69,974	68,177	67,981	66,475	67,879	69,608
Junior	74,928	86,633	91,233	89,509	84,875	80,386	77,085	73,761	70,483	72,666	73,516	74,871	73,449	71,753	68,894	67,190	68,812	67,638
Senior	77,823	92,414	109,036	109,695	110,305	107,773	104,003	97,614	94,465	92,989	94,683	98,235	98,214	96,523	95,226	92,213	92,496	90,653
Fifth year	5,419	5,731	6,722	6,236	6,159	5,928	7,140	5,755	6,894	6,637	6,939	5,949	7,305	6,963	7,089	6,519	6,389	6,849
Total part time	25,811	32,825	35,061	34,864	36,673	38,137	35,200	39,243	39,748	41,445	40,580	38,399	38,127	38,835	37,826	38,405	38,900	37,334
Total schools	286	286	292	289	297	311	316	320	323	328	336	337	336	337	337	335	338	340
ABET-accredited schools[a]	239	250	258	258	264	270	277	281	284	289	303	309	310	315	316	317	319	321
Engineering technology																		
Total students	NA	191,152	163,226	157,897	123,571	137,390	128,501	131,704	127,687	123,217	127,135	124,736	106,976	107,275	105,809	105,345	108,459	108,993
Total full time	NA	134,444	112,745	111,446	83,038	90,536	80,600	79,624	76,179	72,390	75,340	73,245	65,581	66,457	63,929	62,330	67,864	68,545
First year	NA	65,893	53,032	46,806	34,389	39,177	32,685	33,477	32,225	30,178	31,302	30,543	24,824	24,574	25,665	26,583	30,227	28,367
Second year	NA	40,774	33,799	31,716	23,293	25,612	22,906	21,852	21,627	20,586	20,815	21,081	19,962	20,997	18,863	17,267	19,106	18,426
Other years assoc.	NA	872	925	1,165	466	657	1,404	1,760	1,810	1,603	2,221	2,336	2,564	3,121	2,007	2,780	3,442	6,080
BA of engineering tech. Third and later years	NA	26,905	24,989	31,759	24,890	25,090	23,605	22,535	20,517	20,023	21,002	19,285	18,231	17,765	17,394	15,700	15,089	15,672
Total part time	NA	56,708	50,481	46,451	40,533	46,854	47,901	52,080	51,508	50,827	51,795	51,491	41,395	40,818	41,880	43,015	40,595	40,448
Total schools	NA	NA	NA	NA	200	257	291	310	286	303	302	298	263	294	289	285	285	279

NA = not available

[a]Schools with at least one curriculum accredited by the Accreditation Board of Engineering and Technology (ABET).

SOURCE: American Association of Engineering Societies, Engineering Workforce Commission, *Engineering and Technology Enrollments, Fall 1998* (Washington, DC: 1999).

See page 4-13 in Volume 1.

Science & Engineering Indicators – 2000

Appendix table 4-14.
Engineering enrollment, by level and attendance pattern: 1979–98

Year	Undergraduate			Graduate		
	Total	Full time	Part time	Total	Full time	Part time
		Number				
1979	366,299	340,488	25,811	67,152	41,384	25,768
1980	397,344	365,117	32,227	72,585	44,335	28,250
1981	420,402	387,577	32,825	77,600	47,782	29,818
1982	435,330	403,390	31,940	81,999	50,410	31,589
1983	441,205	406,144	35,061	91,040	57,366	33,674
1984	429,499	394,635	34,864	93,165	57,277	35,888
1985	420,864	384,191	36,673	95,505	60,641	34,864
1986	407,657	369,520	38,137	107,196	67,333	39,863
1987	392,198	356,998	35,200	110,778	69,343	41,435
1988	385,412	346,169	39,243	112,007	69,226	42,781
1989	378,277	338,529	39,748	114,048	68,967	45,081
1990	380,287	338,842	41,445	117,834	72,456	45,378
1991	379,977	339,397	40,580	123,497	74,568	48,929
1992	382,525	344,126	38,399	128,854	78,651	50,203
1993	375,944	337,817	38,127	128,081	78,885	49,196
1994	367,298	328,463	38,835	122,242	74,596	47,646
1995	363,315	325,489	37,826	118,506	72,215	46,291
1996	356,177	317,772	38,405	113,063	70,129	42,934
1997	365,358	326,458	38,900	112,257	70,447	41,810
1998	366,991	329,657	37,334	110,355	69,519	40,836
		Percent				
1979	100.0	93.0	7.0	100.0	61.6	38.4
1980	100.0	91.9	8.1	100.0	61.1	38.9
1981	100.0	92.2	7.8	100.0	61.6	38.4
1982	100.0	92.7	7.3	100.0	61.5	38.5
1983	100.0	92.1	7.9	100.0	63.0	37.0
1984	100.0	91.9	8.1	100.0	61.5	38.5
1985	100.0	91.3	8.7	100.0	63.5	36.5
1986	100.0	90.6	9.4	100.0	62.8	37.2
1987	100.0	91.0	9.0	100.0	62.6	37.4
1988	100.0	89.8	10.2	100.0	61.8	38.2
1989	100.0	89.5	10.5	100.0	60.5	39.5
1990	100.0	89.1	10.9	100.0	61.5	38.5
1991	100.0	89.3	10.7	100.0	60.4	39.6
1992	100.0	90.0	10.0	100.0	61.0	39.0
1993	100.0	89.9	10.1	100.0	61.6	38.4
1994	100.0	89.4	10.6	100.0	61.0	39.0
1995	100.0	89.6	10.4	100.0	60.9	39.1
1996	100.0	89.2	10.8	100.0	62.0	38.0
1997	100.0	89.4	10.6	100.0	62.8	37.2
1998	100.0	89.8	10.2	100.0	63.0	37.0

SOURCE: American Association of Engineering Societies, Engineering Workforce Commission, *Engineering and Technology Enrollments, Fall 1998* (Washington, DC: 1999).

See figure 4-9 in Volume 1.

Appendix table 4-15.
Remedial mathematics courses in higher education, percentage by type of institution: 1995

	Institutions offering remedial coursework	Freshmen enrolled in remedial mathematics
Public		
Two year	99	34
Four year	78	18
Private		
Two year	62	23
Four year	51	9

SOURCE: National Center for Education Statistics (NCES), *The Condition of Education*, NCES 97-388 (Washington, DC: U.S. Government Printing Office, 1997); based on the NCES study "Remedial Education at Higher Education Institutions in Fall 1995."

See figure 4-10 in Volume 1. *Science & Engineering Indicators – 2000*

Appendix table 4-16.
Earned associate's degrees, by field and sex: 1975–96

Field	1975	1977	1979	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Total																			
All degrees	362,969	409,942	407,471	420,910	440,000	461,888	457,851	459,087	451,258	440,816	441,093	440,375	459,048	486,297	508,704	519,098	546,574	544,094	540,644
S&E	NA	NA	NA	NA	NA	23,796	28,095	26,486	25,267	23,130	21,520	19,733	19,810	19,352	22,722	23,420	25,581	24,228	24,600
Natural sciences[a]	NA	NA	NA	NA	NA	5,013	4,990	4,321	3,924	3,694	3,818	3,712	3,996	4,112	4,585	4,787	5,484	5,456	5,718
Math & computer sciences	NA	NA	NA	NA	NA	10,707	13,696	13,680	11,567	9,953	9,575	8,846	8,600	8,640	10,376	10,275	10,634	10,410	10,160
Social sciences[b]	NA	NA	NA	NA	NA	4,803	4,852	4,562	4,487	4,894	4,231	4,440	4,809	4,087	5,046	5,832	6,619	6,077	6,674
Engineering	NA	NA	NA	NA	NA	3,273	4,557	3,923	5,289	4,589	3,896	2,735	2,405	2,513	2,715	2,526	2,844	2,285	2,048
Engineering technology	30,906	38,588	41,716	52,478	58,574	51,317	50,671	53,667	49,880	49,815	49,646	48,342	46,938	45,106	40,592	40,946	42,414	39,190	35,982
Science technology	2,300	3,087	2,880	2,565	2,767	1,463	1,395	1,164	1,081	947	769	898	903	953	969	1,013	1,150	970	965
Male																			
All degrees	191,855	212,120	193,696	190,152	198,698	208,830	204,517	204,325	197,955	192,227	191,912	187,125	192,433	200,043	208,856	213,263	222,247	219,704	327,554
S&E	NA	NA	NA	NA	NA	13,145	15,689	14,695	14,403	13,152	12,266	10,607	10,568	10,360	12,063	12,103	13,023	12,461	12,393
Natural sciences[a]	NA	NA	NA	NA	NA	2,959	2,927	2,460	2,173	2,113	2,151	1,965	2,195	2,278	2,605	2,686	2,948	2,978	3,041
Math & computer sciences	NA	NA	NA	NA	NA	5,395	7,007	7,128	6,015	5,297	5,028	4,563	4,431	4,438	5,187	5,123	5,384	5,434	5,326
Social sciences[b]	NA	NA	NA	NA	NA	1,876	1,713	1,606	1,588	1,650	1,617	1,671	1,825	1,411	1,911	2,098	2,217	2,071	2,061
Engineering	NA	NA	NA	NA	NA	2,915	4,042	3,501	4,627	4,092	3,470	2,408	2,117	2,233	2,360	2,196	2,474	1,978	1,779
Engineering technology	29,108	34,957	36,749	45,329	50,823	45,521	45,068	47,946	44,340	44,158	44,053	42,766	41,435	39,777	35,666	36,129	36,899	34,196	30,947
Science technology	1,690	2,134	1,937	1,621	1,736	918	889	698	659	571	451	562	605	574	573	617	703	623	587
Female																			
All degrees	171,114	197,822	213,775	230,758	241,302	253,058	253,334	254,762	253,303	248,589	249,181	253,250	266,615	286,254	299,848	305,835	324,327	324,390	213,090
S&E	NA	NA	NA	NA	NA	10,651	12,406	11,791	10,864	9,978	9,254	9,126	9,242	8,992	10,659	11,317	12,558	11,767	12,207
Natural sciences[a]	NA	NA	NA	NA	NA	2,054	2,063	1,861	1,751	1,581	1,667	1,747	1,801	1,834	1,980	2,101	2,536	2,478	2,677
Math & computer sciences	NA	NA	NA	NA	NA	5,312	6,689	6,552	5,552	4,656	4,547	4,283	4,169	4,202	5,189	5,152	5,250	4,976	4,834
Social sciences[b]	NA	NA	NA	NA	NA	2,927	3,139	2,956	2,899	3,244	2,614	2,769	2,984	2,676	3,135	3,734	4,402	4,006	4,613
Engineering	NA	NA	NA	NA	NA	358	515	422	662	497	426	327	288	280	355	330	370	307	269
Engineering technology	1,798	3,631	4,967	7,149	7,751	5,796	5,603	5,721	5,540	5,657	5,593	5,576	5,503	5,329	4,926	4,817	5,515	4,994	5,035
Science technology	610	953	943	944	1,031	545	506	466	422	376	318	336	298	379	396	396	447	347	378

NA = not available

NOTE: Data on associate's degrees are not available for broad science and engineering fields before 1983.

[a]Natural sciences here include physical, earth, atmospheric, oceanographic, biological, and agricultural sciences.

[b]Social sciences include psychology, sociology, and other social sciences.

SOURCES: National Center for Education Statistics, Earned Degrees and Completion Surveys, unpublished tabulations; and National Science Foundation, Science Resources Studies Division, unpublished tabulations.

See page 4-15 in Volume 1.

Appendix table 4-17.
Earned bachelor's degrees, by field and sex: 1966–96 (selected years)

Field	1966	1971	1976	1981	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Total															
All degrees	524,008	846,110	934,443	946,877	1,000,204	1,003,532	1,006,033	1,030,171	1,062,151	1,107,997	1,150,072	1,179,278	1,183,141	1,174,436	1,179,815
Science and engineering	184,313	294,357	309,491	306,792	335,460	331,526	322,482	322,821	329,094	337,675	355,265	366,035	373,261	378,148	384,674
Natural sciences	46,978	67,238	91,547	84,062	72,499	68,724	64,734	62,860	62,652	65,189	71,269	77,312	83,791	90,845	98,322
Physical	15,462	17,948	16,497	17,446	15,784	15,464	14,255	14,148	13,425	13,678	13,875	14,188	14,655	14,897	15,396
Earth/atm/ocean	1,712	3,562	5,046	6,694	6,076	4,689	3,554	3,181	2,776	2,728	3,201	3,503	3,868	4,478	4,457
Biological & agricultural	29,804	45,728	70,004	59,922	50,639	48,571	46,925	45,531	46,451	48,783	54,193	59,621	65,268	71,470	78,469
Math/computer sciences	20,179	27,306	21,749	26,406	58,583	56,442	50,877	46,277	42,369	40,194	39,889	39,433	39,185	38,620	37,621
Mathematics	20,090	24,918	16,085	11,173	16,388	16,515	15,981	15,314	14,674	14,784	14,931	14,853	14,632	13,851	13,076
Computer sciences	89	2,388	5,664	15,233	42,195	39,927	34,896	30,963	27,695	25,410	24,958	24,580	24,553	24,769	24,545
Social and behavioral sciences	81,330	154,565	157,405	132,607	127,558	131,935	136,717	146,737	159,368	170,105	182,166	186,585	187,273	185,312	185,617
Psychology	16,966	38,154	50,363	41,364	40,937	43,195	45,378	48,954	54,018	58,893	64,033	67,251	69,768	72,601	73,828
Social sciences	64,364	116,411	107,042	91,243	86,621	88,740	91,339	97,783	105,350	111,212	118,133	119,334	117,505	112,711	111,789
Engineering	35,826	45,248	38,790	63,717	76,820	74,425	70,154	66,947	64,705	62,187	61,941	62,705	63,012	63,371	63,114
Chemical engineering	2,958	3,843	3,543	7,639	7,411	6,114	4,654	4,187	3,834	3,728	4,123	4,899	5,636	6,391	6,708
Civil engineering	5,588	6,879	8,493	11,331	9,223	8,746	8,131	8,015	7,992	8,083	8,920	9,788	10,603	11,329	12,053
Electrical engineering	10,978	12,212	9,874	15,040	26,112	26,791	25,942	24,318	2 3,015	21,520	20,256	19,598	18,241	17,579	16,667
Industrial engineering	2,325	3,190	2,241	3,878	4,255	4,313	4,259	4,121	4,041	3,820	4,029	3,584	3,453	3,519	3,727
Mechanical engineering	7,792	9,134	6,984	13,573	16,586	15,723	15,331	15,217	14,693	14,263	14,352	14,708	15,297	15,141	14,509
Other engineering	6,185	9,990	7,655	12,256	13,233	12,738	11,837	11,089	11,130	10,773	10,261	10,128	9,782	9,412	9,450
Engineering technology	NA	NA	NA	13,567	20,928	20,577	20,447	20,098	19,150	18,294	17,118	17,022	16,703	16,607	16,228
Male															
All degrees	301,037	478,423	508,549	474,336	490,143	485,003	481,236	487,566	495,867	508,952	525,395	537,536	537,061	531,146	528,000
Science and engineering	138,679	209,318	205,570	190,977	204,771	199,981	191,549	189,338	189,082	189,328	195,779	200,315	202,284	202,217	203,341
Natural sciences	37,180	53,208	65,572	53,430	43,405	40,589	36,930	36,009	35,157	36,206	38,939	42,316	45,600	48,474	51,766
Physical	13,290	15,317	13,280	13,137	11,088	10,792	9,673	9,777	9,106	9,253	9,289	9,424	9,588	9,605	9,694
Earth/atm/ocean	1,551	3,179	4,124	5,028	4,722	3,629	2,707	2,380	2,001	1,946	2,177	2,453	2,665	2,954	2,972
Biological & agricultural	22,339	34,712	48,168	35,265	27,595	26,168	24,550	23,852	24,050	25,007	27,473	30,439	33,347	35,915	39,100
Math/computer sciences	13,477	17,488	14,071	16,672	35,841	34,871	32,112	29,682	27,184	25,700	25,693	25,483	25,397	25,066	24,857
Mathematics	13,401	24,918	9,531	6,392	8,772	8,833	8,569	8,264	7,863	7,804	7,945	7,854	7,864	7,360	7,084
Computer sciences	76	2,388	4,540	10,280	27,069	26,038	23,543	21,418	19,321	17,896	17,748	17,629	17,533	17,706	17,773
Social and behavioral sciences	52,342	93,735	88,454	64,221	59,843	61,500	63,132	66,888	72,009	74,900	78,842	79,792	78,678	76,256	74,920
Psychology	10,038	21,117	22,987	14,447	12,691	13,399	13,584	14,291	15,399	16,155	17,130	18,029	18,749	19,638	19,965
Social sciences	42,304	72,618	65,467	49,774	47,152	48,101	49,548	52,597	56,610	58,745	61,712	61,763	59,929	56,618	54,955
Engineering	35,680	44,887	37,473	56,654	65,682	63,021	59,375	56,759	54,732	52,522	52,305	52,724	52,609	52,421	51,798
Chemical engineering	2,958	3,843	3,254	6,274	5,805	4,574	3,522	3,017	2,745	2,564	2,854	3,335	3,953	4,367	4,537
Civil engineering	5,588	6,879	8,493	10,100	7,994	7,550	6,960	6,841	6,730	6,803	7,395	8,009	8,619	9,031	9,629
Electrical engineering	10,978	12,212	9,681	13,940	22,885	23,227	22,418	21,130	20,148	18,757	17,801	17,339	15,990	15,409	14,695
Industrial engineering	2,325	3,190	2,154	3,111	2,974	2,929	3,014	2,860	2,835	2,723	2,890	2,547	2,439	2,493	2,630
Mechanical engineering	7,792	9,134	6,834	12,422	14,876	13,996	13,567	13,537	12,978	12,673	12,791	13,076	13,554	13,441	12,773
Other engineering	6,039	9,629	7,057	10,807	11,148	10,745	9,894	9,374	9,296	9,002	8,574	8,418	8,054	7,680	7,534
Engineering technology	NA	NA	NA	12,032	18,734	18,429	18,337	17,999	17,113	16,329	15,314	15,114	14,877	14,704	14,382

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 4-17.
Earned bachelor's degrees, by field and sex: 1966–96 (selected years)

Field	1966	1971	1976	1981	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Female															
All degrees	222,971	367,687	425,894	472,541	510,061	518,529	524,797	542,605	566,284	599,045	624,677	641,742	646,080	643,290	651,815
Science and engineering	45,634	85,039	103,921	115,815	130,689	131,545	130,933	133,483	140,012	148,347	159,486	165,720	170,977	175,931	181,333
Natural sciences	9,798	14,030	25,975	30,632	29,094	28,135	27,804	26,851	27,495	28,983	32,330	34,996	38,191	42,371	46,556
Physical	2,172	2,631	3,217	4,309	4,696	4,672	4,582	4,371	4,319	4,425	4,586	4,764	5,067	5,292	5,702
Earth/atm/ocean	161	383	922	1,666	1,354	1,060	847	801	775	782	1,024	1,050	1,203	1,524	1,485
Biological & agricultural	7,465	11,016	21,836	24,657	23,044	22,403	22,375	21,679	22,401	23,776	26,720	29,182	31,921	35,555	39,369
Math/computer sciences	6,702	9,818	7,678	9,734	22,742	21,571	18,765	16,595	15,185	14,494	14,196	13,950	13,788	13,554	12,764
Mathematics	6,689	9,494	6,554	4,781	7,616	7,682	7,412	7,050	6,811	6,980	6,986	6,999	6,768	6,491	5,992
Computer sciences	13	324	1,124	4,953	15,126	13,889	11,353	9,545	8,374	7,514	7,210	6,951	7,020	7,063	6,772
Social and behavioral sciences	28,988	60,830	68,951	68,386	67,715	70,435	73,585	79,849	87,359	95,205	103,324	106,793	108,595	109,056	110,697
Psychology	6,928	17,037	27,376	26,917	28,246	29,796	31,794	34,663	38,619	42,738	46,903	49,222	51,019	52,963	53,863
Social sciences	22,060	43,793	41,575	41,469	39,469	40,639	41,791	45,186	48,740	52,467	56,421	57,571	57,576	56,093	56,834
Engineering	146	361	1,317	7,063	11,138	11,404	10,779	10,188	9,973	9,665	9,636	9,981	10,403	10,950	11,316
Chemical engineering	23	64	289	1,365	1,606	1,540	1,132	1,170	1,089	1,164	1,269	1,564	1,683	2,024	2,171
Civil engineering	23	60	279	1,231	1,229	1,196	1,171	1,174	1,262	1,280	1,525	1,779	1,984	2,298	2,424
Electrical engineering	29	76	193	1,100	3,227	3,564	3,524	3,188	2,867	2,763	2,455	2,259	2,251	2,170	1,972
Industrial engineering	10	20	87	767	1,281	1,384	1,245	1,261	1,206	1,097	1,139	1,037	1,014	1,026	1,097
Mechanical engineering	19	43	150	1,151	1,710	1,727	1,764	1,680	1,715	1,590	1,561	1,632	1,743	1,700	1,736
Other engineering	42	98	319	1,449	2,085	1,993	1,943	1,715	1,834	1,771	1,687	1,710	1,728	1,732	1,916
Engineering technology	NA	NA	NA	1,533	2,194	2,148	2,110	2,099	2,037	1,965	1,804	1,908	1,826	1,903	1,846

NA = not available

SOURCES: National Center for Education Statistics, Earned Degrees and Completion Surveys, unpublished tabulations; and National Science Foundation, Science Resources Studies Division, *Science and Engineering Degrees 1966–96*, NSF 99-330, Author, Susan T. Hill (Arlington, VA: 1999).

See figures 4-6, 4-11, and 4-28 in Volume 1.

Appendix table 4-18.
Ratio of first university degrees and science and engineering degrees to the 24-year-old population, in selected countries, by region: 1997 or most recent year

Region/country	All first university degrees	Total science & engineering	Degree fields: Natural sciences[b]	Degree fields: Social sciences[c]	Degree fields: Engineering	Number of 24-year-olds	Ratio of[a] to 24 year-old population: First univ. degrees	Ratio of[a] to 24 year-old population: NS&E degrees	Ratio of[a] to 24 year-old population: Social science degrees
Total, all regions[d]	6,355,621	2,650,756	863,456	908,851	878,449	71,129,549			
Asia									
Total, selected countries[d]	2,161,891	1,024,711	305,249	348,433	371,029	47,506,965	4.6	1.4	0.7
China	325,484	235,313	54,394	32,075	148,844	23,220,000	1.4	0.9	0.1
Hong Kong	11,362	5,425	2,370	1,233	1,822	93,000	12.2	4.5	1.3
India	750,000	176,036	147,036	NA	29,000	15,545,800	4.8	1.1	NA
Indonesia	144,314	97,095	10,711	65,740	20,644	3,975,065	3.6	0.8	1.7
Japan	524,512	348,897	32,327	213,619	102,951	1,870,700	28.0	7.2	11.4
Malaysia	10,511	4,760	1,685	2,198	877	331,600	3.2	0.8	0.7
Singapore	5,599	5,599	2,103	1,820	1,676	48,600	11.5	7.8	3.7
South Korea	196,566	91,278	33,345	16,624	41,309	843,500	23.3	8.9	2.0
Taiwan	74,255	29,140	10,982	5,130	13,028	360,900	20.6	6.7	1.4
Thailand	119,288	31,168	10,296	9,994	10,878	1,217,800	9.8	1.7	0.8
Middle East									
Total, selected countries[d]	283,901	79,079	37,447	15,556	26,076	3,875,735	7.3	1.6	0.4
Egypt[e]	85,608	13,578	6,710	1,437	5,431	976,200	8.8	1.2	0.1
Iran	49,296	18,274	6,364	4,330	7,580	1196600	4.1	1.2	0.4
Israel	14,253	7,317	1,939	3,616	1,762	110,600	12.9	3.3	3.3
Jordan	12,633	3,539	1,753	986	800	80,400	15.7	3.2	1.2
Kazakstan	45,536	13,252	6,779	952	5,521	290,600	15.7	4.2	0.3
Morocco	23,007	9,512	6,584	2,647	281	498,122	4.6	1.4	NA
Saudi Arabia	26,641	5,879	4,201	828	850	301,200	8.8	1.7	0.3
Syria	16,600	4,530	1,398	NA	3,132	257,600	6.4	1.8	NA
Tunisia	10,327	3,198	1,719	760	719	164,413	6.3	1.5	0.5
Sub-Saharan Africa									
Total, selected countries[d]	37,985	12,890	3,924	7,156	1,810	1,931,824	2.0	0.3	0.4
Ethiopia	2,440	966	488	240	238	928,214	0.3	0.1	0.0
South Africa	32,957	10,920	2,937	6,494	1,489	683,472	4.8	0.6	1.0
Uganda	2,588	1,004	499	422	83	320,138	0.8	0.2	0.1
Europe									
Total, selected countries[d]	1,866,416	800,214	277,990	195,406	326,818	9,780,505	19.1	6.2	2.0
European Union	1,070,238	430,927	161,981	129,926	139,020	4,975,100	21.5	6.1	2.6
Austria (long)	13,885	4,984	2,177	1,173	1,634	96,500	14.4	3.9	1.2
Belgium (long)	12,889	3,487	974	NA	2,513	129,400	10.0	2.7	NA
Denmark (short)	16,954	2,882	400	920	1,562	69,400	30.5	5.8	2.2
Denmark (long)	4,185	2,672	1,305	592	775				
Finland (short)	7,475	3,506	707	216	2,583	61,200	27.4	9.9	1.9
Finland (long)	9,324	3,674	1,401	919	1,354				
France (long)	108,825	77,820	23,951	31,041	22,828	821,800	13.2	5.7	NA
Germany (short)	75,641	43,807	6,273	12,719	24,815	874,900	24.3	8.1	4.7
Germany (long)	137,329	68,175	25,094	28,041	15,040				
Greece (long)	18,556	4,576	2,570	221	1,785	146,900	12.6	3.0	0.2
Ireland (short)	8,916	1,843	973	495	375	63,200	24.6	7.5	1.3
Ireland (long)	6,644	3,724	2,279	328	1,117				
Italy (short)	7,511	2,014	615	770	629	845,600	13.3	3.2	1.2
Italy (long)	104,877	34,505	15,239	9,107	10,159				
The Netherlands (long)	52,937	20,960	4,544	9,713	6,703	199,600	26.5	5.6	4.9
Portugal (short)	2,587	425	70	32	323	172,200	15.1	2.6	2.2
Portugal (long)	23,482	7,823	1,895	3,685	2,243				
Spain (short)	73,814	18,817	7,614	0	11,203	648,000	26.8	6.1	1.1
Spain (long)	100,055	27,950	15,314	7,444	5,192				
Sweden (short)	15,028	2,869	709	1,343	817	109,600	23.4	5.3	1.6
Sweden (long)	10,571	4,727	1,500	431	2,796				
United Kingdom (short)[f]	258,753	89,687	46,377	20,736	22,574	736,800	35.1	9.4	2.8
European Free Trade Assoc.	32,640	10,127	2,637	2,479	5,011	143,300	22.8	5.3	1.7
Norway (short)	12,261	2,346	330	51	1,965	60,700	25.8	4.5	1.2
Norway (long)	3,401	1,131	436	695	0				
Switzerland (short)	7,098	3,178	245	701	2,232	82,600	20.6	6.0	2.1
Switzerland (long)	9,880	3,472	1,626	1,032	814				

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 4-18.
Ratio of first university degrees and science and engineering degrees to the 24-year-old population, in selected countries, by region: 1997 or most recent year

Region/country	All first university degrees	Total science & engineering	Degree fields: Natural sciences[b]	Degree fields: Social sciences[c]	Degree fields: Engineering	Number of 24-year-olds	Ratio of[a] to 24 year-old population: First univ. degrees	Ratio of[a] to 24 year-old population: NS&E degrees	Ratio of[a] to 24 year-old population: Social science degrees
Central & Eastern Europe	763,538	359,160	113,372	63,001	182,787	4,662,105	16.4	6.4	1.4
Albania (all)[g]	3,845	1,346	1,006	169	171	62,800	6.1	1.9	0.3
Bulgaria	28,171	7,151	959	1,281	4,911	122,900	22.9	4.8	1.0
Croatia	7,679	2,746	780	417	1,549	63,800	12.0	3.7	0.7
Czech Republic (short)	7,236	1,742	591	180	971	176,400	13.2	4.0	0.2
Czech Republic (long)	16,109	5,830	1,968	257	3,605				
Estonia	2,853	852	309	254	289	22,800	12.5	2.6	1.1
Georgia	18,381	9,076	4,785	1,021	3,270	73,275	25.1	11.0	1.4
Hungary (short)	21,091	4,688	998	0	3,690	152,400	20.5	5.3	1.0
Hungary (long)	10,219	4,953	1,817	1,556	1,580				
Latvia	6,797	1,777	953	224	600	36,700	18.5	4.2	0.6
Lithuania	8,760	2,696	974	338	1,384	54,400	16.1	4.3	0.6
Poland (short)	115,080	33,358	9,566	9,169	14,623	571,400	20.1	4.2	1.6
Russia	406,527	244,955	75,979	37,199	131,777	2,042,800	19.9	10.2	1.8
Slovakia	11,636	4,693	816	253	3,624	82,430	14.1	5.4	0.3
Slovenia	4,507	1,415	383	226	806	29,000	15.5	4.1	0.8
Turkey	94,647	31,882	11,488	10,457	9,937	1,171,000	8.1	1.8	0.9
The Americas									
Total, selected countries[d]	1,904,147	765,902	220,673	388,570	156,659	10,605,741	18.0	3.6	3.7
North America	1,494,863	507,529	175,062	227,110	105,357	6,105,900	24.5	4.6	3.7
Canada	124,024	54,390	18,383	27,995	8,012	374,900	33.1	7.0	7.5
Mexico	191,024	68,465	20,736	13,498	34,231	2,060,000	9.3	2.7	0.7
United States	1,179,815	384,674	135,943	185,617	63,114	3,671,000	32.1	5.4	5.1
Central/South America	394,261	196,380	45,274	110,467	40,639	4,500,963	8.8	1.9	2.5
Argentina	37,878	16,106	5,369	7,325	3,412	567,400	6.7	1.5	1.3
Brazil	245,401	147,761	32,954	97,528	17,279	3,003,400	8.2	1.7	3.2
Chile	23,010	10,531	2,358	4,516	3,657	242,963	9.5	2.5	1.9
Colombia	54,188	12,678	1,642	NA	11,036	687,200	7.9	1.8	NA
Cuba	27,502	7,339	2,117	822	4,400	201,800	13.6	3.2	0.4
Nicaragua	6,282	1,965	834	276	855	80,397	7.8	2.1	0.3
Oceania									
Total, selected countries[d]	116,304	29,953	18,510	4,723	6,720	327,192	35.5	7.7	1.4
Australia	97,852	25,967	15,875	4,084	6,008	272,392	35.9	8.0	1.5
New Zealand	18,452	3,986	2,635	639	712	54,800	33.7	6.1	1.2

NA = not available

NOTES: Data are compiled from numerous national and international sources, and degree fields may not be strictly comparable. First university degrees in different countries are of different duration and may not be academically equivalent. In European countries, short degree programs are three years long; long degree programs take four to six years. Data for Australia, Austria, Bulgaria, Canada, Chile, Czech Republic, Denmark, Ethiopia, Germany, Indonesia, Iran, Japan, Korea, Latvia, Lithuania, The Netherlands, New Zealand, Nicaragua, Norway, Slovakia, Slovenia, Sweden, Taiwan, and the United Kingdom are for 1997. Data for Albania, Argentina, Belgium, Brazil, China, Colombia, Croatia, Cuba, Estonia, Finland, France, Georgia, Hungary, Ireland, Israel, Italy, Jordan, Mexico, Poland, Portugal, Russia, Saudi Arabia, South Africa, Spain, Switzerland, Tunisia, Uganda and the United States are for 1996. Data for Egypt, Hong Kong, Kazakhstan, Morocco, Singapore, Syria, and Thailand are for 1995. Data for France and Turkey are for 1994. Data for Greece are for 1993. Indian and Malaysian data are for 1990.

[a]Ratios given in the last three columns are the number of degrees per 100 of the 24-year-old population. For countries with both short and long degrees, the ratios in the last 3 columns are calculated with short plus long degrees as the numerator.

[b]Natural sciences here include physical, earth, atmospheric, oceanographic, biological, and agricultural sciences, mathematics, and computer sciences.

[c]Social sciences include psychology, sociology, and other social sciences. Japanese social science data also include business administration. Mexican social science data are estimated. French social science data also include some law studies.

[d]Total includes only those countries for which relatively recent data are available.

[e]Egyptian engineering data include architecture, industrial programs, transport, and communications.

[f]U.K. data include former colleges and polytechnics.

[g]Albanian data include short university and postgraduate degrees.

SOURCES: **ASIA: China**—National Research Center for Science and Technology for Development, unpublished tabulations, and United Nations Educational, Scientific, and Cultural Organization (UNESCO), *Statistical Yearbook* (Paris: 1998); **Hong Kong**—UNESCO (1998); **India**—Department of Science and Technology, *Research and Development Statistics 1994–95* (New Delhi: 1996); **Indonesia**—UNESCO (1999); **Japan**—Ministry of Education, Science, and Culture (Monbusho), *Monbusho Survey of Education* (Tokyo: annual series); **Malaysia**—UNESCO (1998); **Singapore**—National University of Singapore, *Annual Report* (Singapore: 1996); **South Korea**—Ministry of Education, *Statistical Yearbook of Education* (Seoul: 1996); **Taiwan**—Ministry of Education, *Educational Statistics of the Republic of China* (Taipei: 1996); **Thailand**—UNESCO (1998); **MIDDLE EAST: Egypt**—UNESCO (1998); Iran—UNESCO (1998); **Israel**—UNESCO (1998); **Jordan**—UNESCO (1998); **Kazakstan**—UNESCO (1998); **Morocco**—UNESCO (1998); **Saudi Arabia**—UNESCO (1998); **Syria**—UNESCO (1998); **Tunisia**—UNESCO (1998); **SUB-SAHARAN AFRICA: Ethiopia**—UNESCO (1999); **South Africa**—UNESCO (1999); **Uganda**—UNESCO (1999); **EUROPEAN UNION: Austria**—Austrian Central Statistical Office, unpublished tabulations; **Belgium**—Organisation for Economic Co-operation and Development and Centre for Educational Research and Innovation (OECD/CERI), unpublished tabulations, and UNESCO (1998) (social sciences); **Denmark**—Department of Higher Education, Ministry of Education, unpublished tabulations (1997); **Finland**—Central Statistical Office, unpublished tabulations (1997), and OECD/CERI; **France**—Ministère de l'Éducation Nationale, de la Recherche et de la Technologie, *Repères et Références Statistiques sur les Enseignements et la Formation* (Vanves, France: 1998); **Germany**—Statistisches Bundesamt Wiesbaden, *Prüfungen an Hochschulen* (Wiesbaden: 1998); **Greece**—National Statistical Service of Greece, unpublished tabulations (1997), and OECD/CERI; **Ireland**—OECD/CERI; **Italy**—OECD/CERI; **The Netherlands**—Department for Statistics of Education and Science, Netherlands Central Bureau of Statistics, unpublished tabulations (1997); **Portugal**—OECD/CERI; **Spain**—Estadísticas e Investigaciones Sociales, Instituto Nacional de Estadística, unpublished tabulations (1997), and OECD/CERI; **Sweden**—Statistics Sweden, unpublished tabulations (1997), and OECD/CERI; **United Kingdom**—Higher Education Statistics Agency, *Students in Higher Education Institutions: 1997/98* (Cheltenham: 1999); **EUROPEAN FREE TRADE ASSOCIATION**: **Norway**—Institute for Studies in Research and Higher Education, the Norwegian Research Council, unpublished tabulations (1997); **Switzerland**—Swiss Federal Statistical Office, unpublished tabulations (1997); **CENTRAL AND EASTERN EUROPE: Albania**—UNESCO (1998); **Bulgaria**—UNESCO (1998); **Czech Republic**—UNESCO (1998); **Estonia**—UNESCO (1998); **Georgia**—UNESCO (1998); **Hungary**—OECD/CERI; **Latvia**—UNESCO (1998); **Lithuania**—UNESCO (1998); **Poland**—UNESCO (1998); **Russia**—UNESCO (1998); **Slovakia**—UNESCO (1998); **Slovenia**—UNESCO (1998); **Turkey**—UNESCO (1998); **NORTH AMERICA**: **Canada**—Association of Universities and Colleges, unpublished tabulations, 1998; **Mexico**—Asociación Nacional de Universidades y Instituciones de Educación Superior, *Anuario Estadístico 1997: Posgrado* (Mexico, 1997); **United States**—National Science Foundation, Science Resources Studies Division, *Science and Engineering Degrees 1966–96* (Arlington, VA: 1998); **CENTRAL/SOUTH AMERICA**: **Argentina**—unpublished tabulations; **Brazil**—Ministério de Educação e Cultura, Coordenação de Aperfeiçoamento de Pessoal de Nivel Superior (CAPES); **Chile**—UNESCO (1999); **Colombia**—UNESCO (1998); **Cuba**—UNESCO (1998); **Nicaragua**—UNESCO (1999); **OCEANIA: Australia**—UNESCO (1999); and **New Zealand**—UNESCO (1998).

See figure 4-15 in Volume 1.

Appendix table 4-19.
Science and engineering degrees earned within Asian universities in selected Asian countries, by level: 1975–97

Year	Natural sciences[a]	Math and computer sciences	Agricultural sciences	Social sciences[b]	Engineering
Bachelor's degrees					
1975	107,207	3,690	16,792	137,245	92,976
1976	110,111	4,263	18,166	143,443	95,838
1977	112,929	4,506	19,531	147,682	99,947
1978	116,659	4,496	21,149	155,854	104,421
1979	113,320	4,857	23,128	162,506	109,356
1980	115,826	5,168	22,051	162,909	111,080
1981	117,898	5,595	23,363	165,103	116,043
1982	120,225	5,974	23,805	164,286	117,198
1983	122,588	6,447	23,902	159,327	120,324
1984	125,973	6,808	24,520	158,147	123,755
1985	148,034	16,100	36,140	174,750	198,734
1986	150,382	16,956	38,251	178,441	214,434
1987	158,174	17,777	40,458	182,845	227,315
1988	157,993	22,846	42,272	186,578	241,800
1989	163,096	25,369	42,244	186,159	255,297
1990	167,663	26,456	43,965	199,707	257,325
1991	168,378	28,239	42,718	225,221	272,295
1992	169,571	29,686	42,413	236,131	280,975
1993	175,343	29,097	47,459	233,751	283,075
1994	189,065	30,290	48,006	239,071	308,867
1995	191,489	34,587	49,407	256,573	324,468
1996	188,301	36,040	46,640	261,568	317,682
1997	NA	NA	NA	NA	NA
Doctoral degrees					
1975	2,191	0	722	122	1,150
1976	2,399	0	859	123	1,281
1977	2,706	0	910	124	1,283
1978	2,863	0	912	113	1,323
1979	3,120	1	962	106	1,408
1980	3,268	1	1,063	108	1,431
1981	3,390	1	1,154	111	1,593
1982	3,523	3	1,150	131	1,737
1983	3,665	4	1,167	153	1,912
1984	3,899	2	1,404	152	1,952
1985	4,017	27	1,372	193	2,237
1986	3,992	23	1,355	215	2,492
1987	4,138	45	1,444	273	2,645
1988	4,326	162	1,560	305	3,231
1989	4,295	201	1,580	338	3,621
1990	4,237	188	1,509	369	3,893
1991	4,352	226	1,653	458	4,100
1992	4,524	249	1,816	501	4,184
1993	4,875	272	1,838	603	4,700
1994	5,411	333	1,990	694	5,432
1995	6,006	411	2,085	750	6,109
1996	6,642	505	2,218	888	7,341
1997	7,016	609	2,285	999	7,878

NA = not available

NOTES: Asian countries include China, India, Japan, South Korea, and Taiwan. Chinese degree data included for 1985–96. Mathematics and computer science degree data in China are estimated for 1995–96.

[a]Natural sciences include physical, biological, earth, atmospheric, and oceanographic sciences.

[b]Social sciences include psychology, sociology, and other social sciences.

SOURCE: National Science Foundation, Science Resources Studies Division, Database on Global Human Resources for Science, unpublished tabulations.

See figures 4-13 and 4-14 in Volume 1.

Appendix table 4-20.
Percentage of total bachelor's degrees in science and engineering in selected countries/regions: 1997 or most recent year

Region/country	All first university degrees	Total science & engineering	Degree fields: Natural sciences[a]	Degree fields: Social sciences[b]	Degree fields: Engineering
Total, world regions	100.0	41.7	13.6	14.3	13.8
Asia					
Total	100.0	47.4	14.1	16.1	17.2
China	100.0	72.3	16.7	9.9	45.7
Hong Kong	100.0	47.7	20.9	10.9	16.0
India	100.0	23.5	19.6	NA	3.9
Indonesia	100.0	67.3	7.4	45.6	14.3
Japan	100.0	66.5	6.2	40.7	19.6
Malaysia	100.0	45.3	16.0	20.9	8.3
Singapore	100.0	100.0	37.6	32.5	29.9
South Korea	100.0	46.4	17.0	8.5	21.0
Taiwan	100.0	39.2	14.8	6.9	17.5
Thailand	100.0	26.1	8.6	8.4	9.1
Middle East					
Total	100.0	27.9	13.2	5.5	9.2
Egypt	100.0	15.9	7.8	1.7	6.3
Iran	100.0	37.1	12.9	8.8	15.4
Israel	100.0	51.3	13.6	25.4	12.4
Jordan	100.0	28.0	13.9	7.8	6.3
Kazakstan	100.0	29.1	14.9	2.1	12.1
Morocco	100.0	41.3	28.6	11.5	1.2
Saudi Arabia	100.0	22.1	15.8	3.1	3.2
Syria	100.0	27.3	8.4	NA	18.9
Tunisia	100.0	31.0	16.6	7.4	7.0
Sub-Saharan Africa					
Total	100.0	33.9	10.3	18.8	4.8
Ethiopia	100.0	39.6	20.0	9.8	9.8
Uganda	100.0	33.1	8.9	19.7	4.5
South Africa	100.0	38.8	19.3	16.3	3.2
Europe					
Total	100.0	42.9	14.9	10.5	17.5
European Union	100.0	40.3	15.1	12.1	13.0
Austria (long)	100.0	35.9	15.7	8.4	11.8
Belgium (long)	100.0	27.1	7.6	NA	19.5
Denmark (short)	100.0	17.0	2.4	5.4	9.2
Denmark (long)	100.0	63.8	31.2	14.1	18.5
Finland (short)	100.0	46.9	9.5	2.9	34.6
Finland (long)	100.0	39.4	15.0	9.9	14.5
France (long)	100.0	71.5	22.0	28.5	21.0
Germany (short)	100.0	57.9	8.3	16.8	32.8
Germany (long)	100.0	49.6	18.3	20.4	11.0
Greece (long)	100.0	24.7	13.8	1.2	9.6
Ireland (short)	100.0	20.7	10.9	5.6	4.2
Ireland (long)	100.0	56.1	34.3	4.9	16.8
Italy (short)	100.0	26.8	8.2	10.3	8.4
Italy (long)	100.0	32.9	14.5	8.7	9.7
The Netherlands (long)	100.0	39.6	8.6	18.3	12.7
Portugal (short)	100.0	16.4	2.7	1.2	12.5
Portugal (long)	100.0	33.3	8.1	15.7	9.6
Spain (short)	100.0	25.5	10.3	0.0	15.2
Spain (long)	100.0	27.9	15.3	7.4	5.2
Sweden (short)	100.0	19.1	4.7	8.9	5.4
Sweden (long)	100.0	44.7	14.2	4.1	26.4
United Kingdom (short)[c]	100.0	34.7	17.9	8.0	8.7
European Free Trade Assoc	100.0	31.0	8.1	7.6	15.4
Norway (short)	100.0	19.1	2.7	0.4	16.0
Norway (long)	100.0	33.3	12.8	20.4	0.0
Switzerland (short)	100.0	44.8	3.5	9.9	31.4
Switzerland (long)	100.0	35.1	16.5	10.4	8.2

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 4-20.
Percentage of bachelor's degrees in science and engineering in selected countries/regions: 1997 or most recent year

Region/country	All first university degrees	Total science & engineering	Degree fields: Natural sciences[a]	Degree fields: Social sciences[b]	Engineering
Central & Eastern Europe	100.0	47.0	14.8	8.3	23.9
Albania	100.0	35.0	26.2	4.4	4.4
Bulgaria	100.0	25.4	3.4	4.5	17.4
Croatia	100.0	35.8	10.2	5.4	20.2
Czech Republic (short)	100.0	24.1	8.2	2.5	13.4
Czech Republic (long)	100.0	36.2	12.2	1.6	22.4
Estonia	100.0	29.9	10.8	8.9	10.1
Georgia	100.0	49.4	26.0	5.6	17.8
Hungary (short)	100.0	22.2	4.7	0.0	17.5
Hungary (long)	100.0	48.5	17.8	15.2	15.5
Latvia	100.0	26.1	14.0	3.3	8.8
Lithuania	100.0	30.8	11.1	3.9	15.8
Poland (short)	100.0	29.0	8.3	8.0	12.7
Russia	100.0	60.3	18.7	9.2	32.4
Slovakia	100.0	40.3	7.0	2.2	31.1
Slovenia	100.0	31.4	8.5	5.0	17.9
Turkey	100.0	33.7	12.1	11.0	10.5
North America					
Total	100.0	34.0	11.7	15.2	7.0
Canada	100.0	43.9	14.8	22.6	6.5
Mexico	100.0	35.8	10.9	7.1	17.9
United States	100.0	32.6	11.5	15.7	5.3
South America					
Total	100.0	49.8	11.5	28.0	10.3
Argentina	100.0	42.5	14.2	19.3	9.0
Brazil	100.0	60.2	13.4	39.7	7.0
Chile	100.0	45.8	10.2	19.6	15.9
Colombia	100.0	23.4	3.0	NA	20.4
Cuba	100.0	26.7	7.7	3.0	16.0
Nicaragua	100.0	31.3	13.3	4.4	13.6
Oceania					
Total	100.0	25.8	15.9	4.1	5.8
Australia	100.0	26.5	16.2	4.2	6.1
New Zealand	100.0	21.6	14.3	3.5	3.9

NA = not available

[a]Natural sciences here include physical, earth, atmospheric, oceanographic, biological, and agricultural sciences, mathematics, and computer sciences.

[b]Social sciences include psychology, sociology, and other social sciences. Japanese social science data also include business administration. Mexican social science data are estimated. French social science data also include some law studies.

[c]U.K. data include former colleges and polytechnics.

SOURCE: Computed from degree data of appendix table 4-18.

See page 4-18 in Volume 1.

Appendix table 4-21.
Graduate enrollment in science and engineering, by field and sex: 1975–97

Field	1975	1977	1979	1981	1983	1985	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Total																	
Science & engineering	303,190	311,816	319,171	332,086	347,065	358,126	373,341	375,277	382,747	397,135	412,697	430,644	435,886	431,251	422,555	415,363	407,644
Natural sciences[a]	95,489	101,221	100,871	100,617	102,979	104,074	104,963	105,529	107,301	109,364	112,474	116,699	119,489	120,833	120,325	117,677	114,697
Math & computer sciences	25,307	25,160	26,721	32,318	40,691	47,332	50,559	51,304	51,729	54,031	54,562	56,648	56,189	53,707	51,941	52,607	52,769
Social sciences[b]	114,123	116,750	119,851	119,596	112,276	110,729	113,866	115,615	119,674	126,115	132,085	139,262	143,350	143,688	143,090	141,856	139,170
Engineering	68,271	68,685	71,728	79,555	91,119	95,991	103,953	102,829	104,043	107,625	113,576	118,035	116,858	113,023	107,199	103,223	101,008
Male																	
Science & engineering	NA	233,862	229,860	232,209	240,525	247,464	256,149	254,005	256,849	263,394	271,845	280,397	279,289	272,120	262,341	253,629	245,615
Natural sciences[a]	0	76,073	72,945	70,721	70,711	70,745	70,685	69,869	70,263	70,800	71,753	73,754	74,086	73,878	72,488	69,951	67,234
Math & computer sciences	0	19,482	20,376	23,628	28,877	34,417	36,948	37,334	37,756	39,633	39,994	41,644	41,129	39,087	37,554	37,596	37,008
Social sciences[b]	0	73,322	70,687	66,051	59,625	57,391	57,526	57,097	58,387	60,008	62,237	64,197	64,908	64,181	63,114	61,111	59,080
Engineering	NA	64,985	65,852	71,809	81,312	84,911	90,990	89,705	90,443	92,953	97,861	100,802	99,166	94,974	89,185	84,971	82,293
Female																	
Science & engineering	NA	77,954	89,311	99,877	106,540	110,662	117,192	121,272	125,898	133,741	140,852	150,247	156,597	159,131	160,214	161,734	162,029
Natural sciences[a]	0	25,148	27,926	29,896	32,268	33,329	34,278	35,660	37,038	38,564	40,721	42,945	45,403	46,955	47,837	47,726	47,463
Math & computer sciences	0	5,678	6,345	8,690	11,814	12,915	13,611	13,970	13,973	14,398	14,568	15,004	15,060	14,620	14,387	15,011	15,761
Social sciences[b]	0	43,428	49,164	53,545	52,651	53,338	56,340	58,518	61,287	66,107	69,848	75,065	78,442	79,507	79,976	80,745	80,090
Engineering	NA	3,700	5,876	7,746	9,807	11,080	12,963	13,124	13,600	14,672	15,715	17,233	17,692	18,049	18,014	18,252	18,715

NA = not available

NOTE: For detailed statistical tables on graduate enrollment, see source document on Science Resources Studies Division Web page <<http://www.nsf.gov/sbe/srs/stats.htm>>.

[a]Natural sciences here include physical, earth, atmospheric, oceanographic, biological, and agricultural sciences.

[b]Social sciences include psychology, sociology, and other social sciences.

SOURCES: National Science Foundation, Science Resources Studies Division, *Graduate Students and Postdoctorates in Science and Engineering, Fall 1997*, NSF 99-325, Project Officer, Joan Burrelli (Arlington, VA: 1999); and previous years of this publication.

See page 4-20 in Volume 1.

Appendix table 4-22.
Graduate enrollment in science and engineering, by field, race/ethnicity, and citizenship: 1983–97

Field and race/ethnicity	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Total															
Science & engineering	347,014	349,875	358,201	368,212	373,425	375,287	382,769	397,135	412,697	430,644	435,886	431,251	422,555	415,363	407,644
Natural sciences[a]	102,968	103,547	103,990	105,541	104,974	105,529	107,301	109,364	112,474	116,699	119,489	120,833	120,325	117,677	114,697
Math & computer sciences	40,713	42,985	47,341	49,316	50,575	51,304	51,729	54,031	54,562	56,648	56,189	53,707	51,941	52,607	52,769
Social sciences[b]	112,236	110,647	110,808	111,499	113,939	115,625	119,696	126,115	132,085	139,262	143,350	143,688	143,090	141,856	139,170
Engineering	91,097	92,696	95,982	101,856	103,937	102,829	104,043	107,625	113,576	118,035	116,858	113,023	107,199	103,223	101,008
U.S. citizen															
Total S&E	276,784	277,682	281,388	284,231	284,631	281,672	284,686	294,318	304,063	321,182	330,169	329,095	324,017	317,209	308,835
Natural sciences[a]	84,700	84,712	83,663	82,854	80,562	79,431	79,242	79,521	81,148	84,893	88,164	89,890	90,648	89,276	87,376
Math & computer sciences	30,306	31,532	34,499	35,448	35,669	35,895	35,352	36,561	36,306	38,041	38,135	36,580	35,338	34,991	34,413
Social sciences[b]	98,173	96,644	95,978	96,018	97,831	98,743	102,746	108,810	114,376	121,653	126,279	126,586	126,299	124,748	122,460
Engineering	63,605	64,794	67,160	69,911	70,569	67,603	67,346	69,426	72,233	76,595	77,591	76,039	71,732	68,194	64,586
White, S&E	224,705	224,705	224,705	224,705	224,705	229,037	229,694	238,472	243,602	253,435	256,859	255,719	245,889	238,077	227,936
Natural sciences[a]	74,337	74,046	71,971	71,713	69,100	68,737	68,110	68,736	69,472	71,328	72,552	74,134	73,296	71,777	69,021
Math & computer sciences	23,823	24,040	25,511	26,053	26,806	27,479	26,560	27,897	26,921	27,744	27,332	26,205	24,398	23,644	22,432
Social sciences[b]	77,963	75,787	76,129	76,930	79,157	80,492	83,531	88,632	92,425	96,967	99,535	99,360	96,239	93,544	90,466
Engineering	48,582	48,582	48,582	48,582	48,582	52,329	51,493	53,207	54,784	57,396	57,440	56,020	51,956	49,112	46,017
Asian/Pacific Islander, S&E	9,353	10,172	12,000	12,775	14,572	15,188	15,693	17,155	18,136	21,752	24,059	26,474	25,901	25,947	26,078
Natural sciences[a]	2,378	2,526	2,712	2,761	3,043	3,478	3,604	3,928	4,267	5,035	6,162	6,606	6,778	6,899	6,835
Math & computer sciences	1,666	1,816	2,491	2,770	3,235	3,438	3,430	3,710	3,724	4,362	4,586	5,264	5,174	5,494	5,754
Social sciences[b]	1,903	2,018	1,992	2,130	2,436	2,362	2,648	2,830	3,029	3,863	4,324	4,827	4,941	5,117	5,335
Engineering	3,406	3,812	4,805	5,114	5,858	5,910	6,011	6,687	7,116	8,492	8,987	9,777	9,008	8,437	8,154
Black, S&E	10,903	10,711	10,462	10,470	10,429	11,191	11,775	12,774	13,691	15,445	17,118	17,611	18,283	19,071	19,363
Natural sciences[a]	1,980	2,000	1,982	1,845	1,817	1,972	2,093	2,184	2,302	2,711	3,042	3,007	3,289	3,487	3,558
Math & computer sciences	971	960	1,031	1,151	1,210	1,261	1,311	1,496	1,617	1,687	1,878	1,855	1,844	1,989	1,960
Social sciences[b]	6,574	6,306	6,062	6,022	5,986	6,458	6,755	7,308	7,747	8,673	9,639	9,965	10,294	10,700	10,971
Engineering	1,378	1,445	1,387	1,452	1,416	1,500	1,616	1,786	2,025	2,374	2,559	2,784	2,856	2,895	2,874
Hispanic, S&E	8,811	8,681	8,613	8,660	8,823	9,098	9,436	10,159	11,045	12,246	13,381	13,281	14,117	14,638	14,988
Natural sciences[a]	1,919	1,892	2,092	2,118	2,071	2,228	2,386	2,375	2,552	2,726	3,075	2,933	3,209	3,338	3,574
Math & computer sciences	615	585	750	723	817	844	847	916	980	1,082	1,111	1,002	1,064	1,126	1,152
Social sciences[b]	4,836	4,713	4,290	4,217	4,205	4,307	4,496	4,982	5,389	5,975	6,501	6,485	7,036	7,239	7,451
Engineering	1,441	1,491	1,481	1,602	1,730	1,719	1,707	1,886	2,124	2,463	2,694	2,861	2,808	2,935	2,811
American Indian/ Alaskan Native, S&E	911	830	736	743	783	918	860	1,054	1,120	1,243	1,309	1,383	1,516	1,539	1,599
Natural sciences[a]	224	206	167	196	183	216	180	255	251	282	318	336	393	374	412
Math & computer sciences	53	71	79	52	76	71	74	64	62	99	100	79	125	94	103
Social sciences[b]	454	361	368	365	401	488	484	583	622	685	680	726	767	837	846
Engineering	180	192	122	130	123	143	122	152	185	177	211	242	231	234	238
Unknown, S&E	22,101	24,179	25,825	23,961	21,160	16,240	17,228	14,704	16,469	17,061	17,443	14,627	18,311	17,937	18,871
Natural sciences[a]	3,862	4,042	4,819	4,221	4,348	2,800	2,869	2,043	2,304	2,811	3,015	2,874	3,683	3,401	3,976
Math & computer sciences	3,178	4,060	4,637	4,699	3,525	2,802	3,130	2,478	3,002	3,067	3,128	2,175	2,733	2,644	3,012
Social sciences[b]	6,443	7,459	7,145	6,354	5,646	4,636	4,832	4,475	5,164	5,490	5,600	5,223	7,022	7,311	7,391
Engineering	8,618	8,618	9,224	8,687	7,641	6,002	6,397	5,708	5,999	5,693	5,700	4,355	4,873	4,581	4,492

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 4-22.
Graduate enrollment in science and engineering, by field, race/ethnicity, and citizenship: 1983–97

Field and race/ethnicity	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Foreign citizen															
Total S&E	70,230	72,193	76,813	83,981	88,794	93,615	98,083	102,817	108,634	109,462	105,717	102,156	98,538	98,154	98,809
Natural sciences[a]	18,268	18,835	20,327	22,687	24,412	26,098	28,059	29,843	31,326	31,806	31,325	30,943	29,677	28,401	27,321
Math & computer sciences	10,407	11,453	12,842	13,868	14,906	15,409	16,377	17,470	18,256	18,607	18,054	17,127	16,603	17,616	18,356
Social sciences[b]	14,063	14,003	14,830	15,481	16,108	16,882	16,950	17,305	17,709	17,609	17,071	17,102	16,791	17,108	16,710
Engineering	27,492	27,902	28,822	31,945	33,368	35,226	36,697	38,199	41,343	41,440	39,267	36,984	35,467	35,029	36,422

[a]Natural sciences here include physical, earth, atmospheric, oceanographic, biological, and agricultural sciences.

[b]Social sciences include psychology, sociology, and other social sciences.

SOURCES: National Science Foundation, Science Resources Studies Division, *Graduate Students and Postdoctorates in Science and Engineering Fall 1997*, NSF 99-325, Project Officer, Joan Burrelli (Arlington, VA: 1999); and previous years of this publication.

See page 4-20 in Volume 1.

Appendix table 4-23.
Earned master's degrees, by field and sex: 1954–96 (selected years)

Field	1954	1966	1971	1976	1981	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Total																
All degrees	56,832	140,772	231,486	313,001	296,798	289,829	290,532	300,091	311,050	324,947	338,498	354,207	370,973	389,008	399,428	408,932
Science and engineering	13,523	41,049	56,454	65,007	64,366	71,831	72,603	73,655	76,425	77,788	78,368	81,107	86,425	91,411	94,309	95,313
Natural sciences	5,286	10,830	13,946	14,684	14,349	13,910	13,400	13,184	13,218	12,928	12,682	13,232	13,474	14,367	14,793	16,158
Physical	1,924	4,206	5,115	3,880	3,366	3,649	3,574	3,708	3,876	3,805	3,777	3,922	3,965	4,263	4,241	4,364
Earth/atm/ocean	450	759	1,227	1,581	1,876	2,234	2,051	1,920	1,819	1,596	1,499	1,425	1,397	1,418	1,483	1,487
Biological & agricultural	2,912	5,865	7,604	9,223	9,107	8,027	7,775	7,556	7,523	7,527	7,406	7,885	8,112	8,686	9,069	10,307
Math/computer sciences	706	5,010	6,789	6,466	6,787	11,241	11,808	12,600	12,829	13,327	12,956	13,320	14,100	14,350	14,495	14,355
Mathematics	706	4,772	5,201	3,863	2,569	3,171	3,327	3,434	3,430	3,684	3,632	3,665	3,751	3,804	3,932	3,742
Computer sciences	0	238	1,588	2,603	4,218	8,070	8,481	9,166	9,399	9,643	9,324	9,655	10,349	10,546	10,563	10,613
Social & behavioral sciences	3,327	11,504	19,352	26,563	26,779	25,584	25,325	25,145	26,635	27,538	28,717	29,537	31,187	33,977	36,391	37,039
Psychology	1,254	2,423	4,438	7,859	8,039	8,363	8,165	7,925	8,652	9,308	9,802	9,852	10,412	11,572	13,132	13,043
Social sciences	2,073	9,081	14,914	19,953	18,740	17,221	17,160	17,220	17,983	18,230	18,915	19,685	20,775	22,405	23,259	23,996
Engineering	4,204	13,705	16,367	16,045	16,451	21,096	22,070	22,726	23,743	23,995	24,013	25,018	27,664	28,717	28,630	27,761
Chemical engineering	448	1,072	1,200	1,129	1,406	1,641	1,386	1,322	1,321	1,205	1,025	1,145	1,220	1,287	1,369	1,416
Civil engineering	562	2,218	2,700	3,605	3,428	3,281	3,267	3,134	3,296	3,213	3,404	3,755	4,438	4,918	5,168	5,002
Electrical engineering	977	3,872	4,282	3,774	3,902	6,147	6,895	7,455	7,849	8,009	7,942	8,274	8,828	8,870	8,743	8,156
Industrial engineering	375	1,200	1,921	1,751	1,631	1,653	1,728	1,816	1,823	1,834	2,039	2,370	2,745	2,882	2,873	3,027
Mechanical engineering	723	2,154	2,505	2,088	2,419	3,256	3,380	3,513	3,703	3,630	3,680	3,826	4,169	4,277	4,368	4,009
Other engineering	1,119	3,189	3,759	3,698	3,665	5,118	5,414	5,486	5,751	6,104	5,923	5,648	6,264	6,483	6,109	6,151
Engineering technology	NA	NA	NA	NA	532	925	883	980	1,135	1,194	1,188	1,278	1,555	1,547	1,577	1,651
Male																
All degrees	38,140	93,184	138,590	167,745	147,431	143,932	141,655	145,403	149,399	154,025	156,895	162,299	169,753	176,762	179,198	180,360
Science and engineering	11,779	35,580	46,116	49,992	45,505	48,611	48,759	49,820	50,845	51,230	50,441	52,157	55,454	57,970	58,518	57,860
Natural sciences	4,396	9,083	11,036	11,388	10,222	9,133	8,652	8,562	8,383	8,052	7,794	8,118	8,181	8,539	8,730	9,224
Physical	1,762	3,723	4,379	3,275	2,691	2,736	2,684	2,817	2,836	2,754	2,703	2,834	2,794	3,030	2,958	2,914
Earth/atm/ocean	68	714	1,111	1,361	1,470	1,717	1,531	1,433	1,337	1,218	1,116	1,057	1,006	994	1,032	1,051
Biological & agricultural	2,566	4,646	5,546	6,752	6,061	4,680	4,437	4,312	4,210	4,080	3,975	4,227	4,381	4,515	4,740	5,259
Math/computer sciences	579	3,992	5,101	4,776	4,939	7,713	8,011	8,759	8,833	9,176	8,709	9,199	9,773	10,128	10,130	9,999
Mathematics	579	3,771	3,677	2,550	1,692	2,055	2,026	2,057	2,060	2,208	2,146	2,219	2,219	2,311	2,353	2,236
Computer sciences	0	221	1,424	2,226	3,247	5,658	5,985	6,702	6,773	6,968	6,563	6,980	7,554	7,817	7,777	7,763
Social & behavioral sciences	2,615	8,876	13,798	18,351	15,222	13,069	12,796	12,581	12,968	13,276	13,282	13,491	13,930	15,009	15,660	15,628
Psychology	885	1,625	2,787	4,188	3,371	2,937	2,838	2,599	2,814	3,025	2,994	2,929	2,928	3,287	3,735	3,670
Social sciences	1,730	7,251	11,011	14,163	11,851	10,132	9,958	9,982	10,154	10,251	10,288	10,562	11,002	11,722	11,925	11,958
Engineering	4,189	13,629	16,181	15,477	15,122	18,696	19,300	19,918	20,661	20,726	20,656	21,349	23,570	24,294	23,998	23,009
Chemical engineering	446	1,065	1,173	1,088	1,230	1,401	1,143	1,107	1,092	1,013	852	914	996	1,008	1,063	1,110
Civil engineering	562	2,209	2,656	3,454	3,112	2,908	2,792	2,721	2,851	2,693	2,864	3,120	3,607	3,965	4,123	3,938
Electrical engineering	977	3,850	4,252	3,670	3,681	5,508	6,178	6,642	6,933	7,018	7,008	7,229	7,777	7,721	7,539	6,960
Industrial engineering	373	1,194	1,898	1,670	1,465	1,374	1,409	1,492	1,465	1,493	1,603	1,898	2,190	2,346	2,361	2,403
Mechanical engineering	723	2,147	2,495	2,056	2,292	3,002	3,133	3,218	3,377	3,276	3,320	3,455	3,769	3,860	3,918	3,555
Other engineering	1,108	3,164	3,707	3,539	3,342	4,503	4,645	4,738	4,943	5,233	5,009	4,733	5,231	5,394	4,994	5,043
Engineering technology	NA	NA	NA	NA	380	710	678	738	892	888	888	971	1,172	1,164	1,136	1,179

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 4-23.
Earned master's degrees, by field and sex: 1954–96 (selected years)

Field	1954	1966	1971	1976	1981	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
							Female									
All degrees	18,692	47,588	92,896	145,256	149,367	145,897	148,877	154,688	161,651	170,922	181,603	191,908	201,220	212,246	220,230	228,572
Science and engineering	1,744	5,469	10,338	15,015	18,861	23,220	23,844	23,835	25,580	26,558	27,927	28,950	30,971	33,441	35,791	37,453
Natural sciences	890	1,747	2,910	3,296	4,127	4,777	4,748	4,622	4,835	4,876	4,888	5,114	5,293	5,828	6,063	6,934
Physical	162	483	736	605	675	913	890	891	1,040	1,051	1,074	1,088	1,171	1,233	1,283	1,450
Earth/atm/ocean	382	45	116	220	406	517	520	487	482	378	383	368	391	424	451	436
Biological & agricultural	346	1,219	2,058	2,471	3,046	3,347	3,338	3,244	3,313	3,447	3,431	3,658	3,731	4,171	4,329	5,048
Math/computer sciences	127	1,018	1,688	1,690	1,848	3,528	3,797	3,841	3,996	4,151	4,247	4,121	4,327	4,222	4,365	4,356
Mathematics	127	1,001	1,524	1,313	877	1,116	1,301	1,377	1,370	1,476	1,486	1,446	1,532	1,493	1,579	1,506
Computer sciences	0	17	164	377	971	2,412	2,496	2,464	2,626	2,675	2,761	2,675	2,795	2,729	2,786	2,850
Social & behavioral sciences	712	2,628	5,554	9,461	11,557	12,515	12,529	12,564	13,667	14,262	15,435	16,046	17,257	18,968	20,731	21,411
Psychology	369	798	1,651	3,671	4,668	5,426	5,327	5,326	5,838	6,283	6,808	6,923	7,484	8,285	9,397	9,373
Social sciences	343	1,830	3,903	5,790	6,889	7,089	7,202	7,238	7,829	7,979	8,627	9,123	9,773	10,683	11,334	12,038
Engineering	15	76	186	568	1,329	2,400	2,770	2,808	3,082	3,269	3,357	3,669	4,094	4,423	4,632	4,752
Chemical engineering	2	7	27	41	176	240	243	215	229	192	173	231	224	279	306	306
Civil engineering	0	9	44	151	316	373	475	413	445	520	540	635	831	953	1,045	1,064
Electrical engineering	0	22	30	104	221	639	717	813	916	991	934	1,045	1,051	1,149	1,204	1,196
Industrial engineering	2	6	23	81	166	279	319	324	358	341	436	472	555	536	512	624
Mechanical engineering	0	7	10	32	127	254	247	295	326	354	360	371	400	417	450	454
Other engineering	11	25	52	159	323	615	769	748	808	871	914	915	1,033	1,089	1,115	1,108
Engineering technology	NA	NA	NA	NA	152	215	205	242	243	306	300	307	383	383	441	472

NA = not available

SOURCES: National Science Foundation, Division of Science Resources Studies (NSF/SRS), *Science and Engineering Degrees: 1966–96*, NSF 97-335 (Arlington, VA: 1999); SRS Web page <<http://www.nsf.gov/sbc/srs>> for 1996 data Early Release Tables; and U.S. Department of Health, Education, and Welfare, *Statistics of Higher Education: Faculty, Students, and Degrees 1953–54* (Washington, DC: U.S. Government Printing Office, 1956).

See figures 4-16 and 4-30 in Volume 1.

Appendix table 4-24.
Earned doctoral degrees in science and engineering, by field: 1950–65 (selected years)

Field	1950	1955	1960	1965
All degrees	6,535	8,905	9,998	17,110
Science and engineering	4,344	5,847	6,500	11,108
Natural sciences	2,975	3,719	4,131	6,282
Physical sciences	1,474	1,524	1,681	2,545
Earth sciences	130	180	251	395
Life & agricultural sciences[a]	1,371	2,015	2,199	3,342
Mathematical sciences	176	243	289	734
Social & behavioral sciences	978	1,604	1,684	2,473
Psychology	360	734	752	1,072
Social sciences	618	870	932	1,401
Engineering	469	649	825	2,186

[a]Life science is different from biological science as reported by the National Science Foundation in subsequent years.

SOURCE: National Research Council, *A Century of Doctorates: Data Analyses of Growth and Change*, Project Director, Lindsey Harmon (Washington, DC: National Academy of Sciences, 1978).

See appendix table 4-25, figure 4-17, and page 4-20 in Volume 1. *Science & Engineering Indicators – 2000*

Appendix table 4-25.
Earned doctoral degrees, by field and sex: 1970–97 (selected years)

Field	1970	1975	1980	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Total																
All degrees	29,498	32,952	31,020	31,297	31,902	32,370	33,500	34,327	36,067	37,534	38,890	39,801	41,034	41,743	42,415	42,705
Science and engineering	18,052	18,799	17,775	18,935	19,437	19,894	20,932	21,732	22,868	24,023	24,675	25,443	26,205	26,535	27,230	26,847
Natural sciences	8,556	8,103	7,864	8,436	8,483	8,655	9,172	9,185	9,763	10,159	10,435	10,529	11,079	11,024	11,392	11,256
Physical	3,893	3,076	2,521	2,934	3,120	3,238	3,350	3,261	3,524	3,626	3,781	3,699	3,977	3,841	3,838	3,711
Earth/atm/ocean	498	625	628	599	559	602	695	723	738	815	794	771	824	780	794	862
Biological & agricultural	4,165	4,402	4,715	4,903	4,804	4,815	5,126	5,202	5,502	5,723	5,862	6,060	6,281	6,412	6,760	6,683
Math/computer sciences	1,332	1,360	962	998	1,128	1,190	1,264	1,471	1,597	1,839	1,927	2,026	2,021	2,187	2,043	2,001
Mathematics	1,225	1,147	744	688	729	740	749	859	892	1,039	1,058	1,146	1,118	1,190	1,122	1,112
Computer sciences	107	213	218	310	399	450	515	612	705	800	869	880	903	997	921	889
Social & behavioral sciences	4,825	6,538	6,470	6,335	6,450	6,337	6,310	6,532	6,613	6,806	6,873	7,189	7,280	7,307	7,490	7,538
Psychology	1,890	2,751	3,098	3,118	3,126	3,173	3,074	3,208	3,281	3,250	3,263	3,420	3,379	3,429	3,491	3,489
Social sciences	2,935	3,787	3,372	3,217	3,324	3,164	3,236	3,324	3,332	3,556	3,610	3,769	3,901	3,878	3,999	4,049
Engineering	3,446	3,011	2,479	3,166	3,376	3,712	4,187	4,543	4,894	5,214	5,438	5,698	5,822	6,008	6,305	6,052
Chemical engineering	457	396	316	504	531	584	685	712	658	691	725	737	725	708	798	764
Civil engineering	366	361	306	391	429	477	531	538	553	575	594	624	684	656	697	653
Electrical engineering	857	714	540	716	806	779	1,010	1,137	1,276	1,405	1,483	1,543	1,673	1,731	1,740	1,695
Mechanical engineering	635	487	384	513	536	657	715	760	884	875	987	1,030	1,015	1,025	1,052	1,010
Materials engineering	303	272	273	303	305	392	374	380	440	489	485	535	539	588	572	573
Other engineering	828	781	660	739	769	823	872	1,016	1,083	1,179	1,164	1,229	1,186	1,300	1,446	1,357
Male																
All degrees	25,527	25,751	21,612	20,553	20,595	20,938	21,681	21,814	22,961	23,661	24,454	24,679	25,215	25,329	25,470	25,383
Science and engineering	16,404	15,870	13,814	14,044	14,270	14,582	15,270	15,623	16,498	17,091	17,595	17,791	18,285	18,247	18,584	18,051
Natural sciences	7,776	6,960	6,328	6,452	6,426	6,484	6,779	6,649	7,100	7,319	7,413	7,311	7,711	7,530	7,681	7,501
Physical	3,666	2,812	2,199	2,467	2,610	2,710	2,783	2,642	2,863	2,947	3,011	2,919	3,149	2,963	2,996	2,878
Earth/atm/ocean	483	595	564	491	464	490	560	575	597	636	606	611	641	610	622	658
Biological & agricultural	3,627	3,553	3,565	3,494	3,352	3,284	3,435	3,433	3,641	3,741	3,798	3,782	3,924	3,966	4,063	3,965
Math/computer sciences	1,253	1,237	846	859	959	1,000	1,087	1,208	1,329	1,523	1,602	1,624	1,648	1,736	1,673	1,597
Mathematics	1,148	1,038	649	582	608	615	628	704	734	840	853	882	882	925	891	852
Computer sciences	105	199	197	277	351	385	459	504	595	683	749	742	766	811	782	745
Social & behavioral sciences	4,050	4,913	4,251	3,765	3,734	3,628	3,504	3,597	3,589	3,497	3,646	3,679	3,735	3,660	3,701	3,648
Psychology	1,446	1,878	1,787	1,577	1,527	1,475	1,393	1,408	1,368	1,254	1,335	1,332	1,277	1,249	1,163	1,165
Social sciences	2,604	3,035	2,464	2,188	2,207	2,153	2,111	2,189	2,221	2,243	2,311	2,347	2,458	2,411	2,538	2,483
Engineering	3,430	2,959	2,389	2,968	3,151	3,470	3,901	4,168	4,479	4,747	4,932	5,176	5,187	5,312	5,529	5,305
Chemical engineering	454	391	302	463	470	524	620	632	580	608	612	643	612	599	655	641
Civil engineering	365	356	295	371	408	459	501	484	504	534	544	570	604	580	618	573
Electrical engineering	854	698	523	681	768	747	962	1,070	1,192	1,326	1,368	1,418	1,526	1,558	1,571	1,545
Mechanical engineering	633	483	377	487	518	640	686	731	846	818	942	973	946	961	974	923
Materials engineering	302	267	259	271	281	347	341	335	391	412	424	457	456	493	489	467
Other engineering	822	764	633	695	706	753	791	916	966	1,049	1,042	1,115	1,043	1,121	1,222	1,156

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 4-25.
Earned doctoral degrees, by field and sex: 1970–97 (selected years)

Field	1970	1975	1980	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Female																
All degrees	3,971	7,201	9,408	10,744	11,307	11,432	11,819	12,513	13,106	13,873	14,436	15,122	15,819	16,414	16,945	17,322
Science and engineering	1,648	2,929	3,961	4,891	5,167	5,312	5,662	6,109	6,370	6,932	7,080	7,652	7,920	8,288	8,646	8,796
Natural sciences	780	1,143	1,536	1,984	2,057	2,171	2,393	2,536	2,663	2,840	3,022	3,218	3,368	3,494	3,711	3,755
Physical	227	264	322	467	510	528	567	619	661	679	770	780	828	878	842	833
Earth/atm/ocean	15	30	64	108	95	112	135	148	141	179	188	160	183	170	172	204
Biological & agricultural	538	849	1,150	1,409	1,452	1,531	1,691	1,769	1,861	1,982	2,064	2,278	2,357	2,446	2,697	2,718
Math/computer sciences	79	123	116	139	169	190	177	263	268	316	325	402	373	451	370	404
Mathematics	77	109	95	106	121	125	121	155	158	199	205	264	236	265	231	260
Computer sciences	2	14	21	33	48	65	56	108	110	117	120	138	137	186	139	144
Social & behavioral sciences	775	1,625	2,219	2,570	2,716	2,709	2,806	2,935	3,024	3,309	3,227	3,510	3,545	3,647	3,789	3,890
Psychology	444	873	1,311	1,541	1,599	1,698	1,681	1,800	1,913	1,996	1,928	2,088	2,102	2,180	2,328	2,324
Social sciences	331	752	908	1,029	1,117	1,011	1,125	1,135	1,111	1,313	1,299	1,422	1,443	1,467	1,461	1,566
Engineering	16	52	90	198	225	242	286	375	415	467	506	522	635	696	776	747
Chemical engineering	3	5	14	41	61	60	65	80	78	83	113	94	113	109	143	123
Civil engineering	1	5	11	20	21	18	30	54	49	41	50	54	80	76	79	80
Electrical engineering	3	16	17	35	38	32	48	67	84	79	115	125	147	173	169	150
Mechanical engineering	2	4	7	26	18	17	29	29	38	57	45	57	69	64	78	87
Materials engineering	1	5	14	32	24	45	33	45	49	77	61	78	83	95	83	106
Other engineering	6	17	27	44	63	70	81	100	117	130	122	114	143	179	224	201

SOURCES: National Science Foundation, Division of Science Resources Studies (NSF/SRS), *Science and Engineering Degrees: 1966–96*, NSF 97-335 (Arlington, VA: 1999); and *Science and Engineering Doctorate Awards: 1997*, NSF 99-323 (Arlington, VA: 1999).

See figures 4-17, 4-23, and 4-32 in Volume 1.

Appendix table 4-26.
Earned doctoral degrees, by field and citizenship: 1986–97

Field	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Total[a]												
All degrees	31,902	32,370	33,501	34,326	36,067	37,534	38,890	39,801	41,034	41,743	42,415	42,705
Science and engineering	19,437	19,894	20,933	21,731	22,867	24,023	24,675	25,443	26,205	26,535	27,230	26,847
Natural sciences[b]	8,483	8,655	9,172	9,185	9,763	10,164	10,437	10,530	11,082	11,033	11,392	11,256
Math and computer sciences	1,128	1,190	1,264	1,471	1,597	1,839	1,927	2,026	2,021	2,187	2,043	2,001
Social sciences[c]	6,450	6,337	6,310	6,532	6,613	6,806	6,873	7,189	7,280	7,307	7,490	7,538
Engineering	3,376	3,712	4,187	4,543	4,894	5,214	5,438	5,698	5,822	6,008	6,305	6,052
U.S. citizen												
All degrees	23,086	22,984	23,290	23,401	24,905	25,573	26,010	26,449	27,147	27,740	27,741	27,688
Science and engineering	13,022	12,966	13,368	13,468	14,167	14,629	14,559	14,932	15,166	15,487	15,621	15,744
Natural sciences[b]	6,139	6,070	6,281	6,226	6,506	6,590	6,502	6,462	6,646	6,601	6,557	6,720
Math and computer sciences	568	588	626	731	723	851	876	921	930	1,038	909	933
Social sciences[c]	4,932	4,750	4,681	4,647	4,981	5,102	5,072	5,321	5,375	5,462	5,564	5,403
Engineering	1,383	1,558	1,780	1,864	1,957	2,086	2,109	2,228	2,215	2,386	2,591	2,688
Non-U.S. citizen												
All degrees	6,709	7,190	7,817	8,274	9,791	11,168	11,933	12,191	13,153	13,129	13,375	11,376
Science and engineering	5,154	5,557	6,066	6,515	7,768	8,926	9,475	9,754	10,542	10,503	10,809	9,209
Natural sciences[b]	1,896	2,084	2,333	2,378	2,974	3,409	3,750	3,821	4,275	4,262	4,536	3,875
Math and computer sciences	478	528	567	617	797	964	996	1,043	1,061	1,096	1,067	919
Social sciences[c]	1,065	1,058	1,079	1,215	1,331	1,532	1,575	1,637	1,715	1,665	1,698	1,426
Engineering	1,715	1,887	2,087	2,305	2,666	3,021	3,154	3,253	3,491	3,480	3,508	2,989
Non-U.S. citizen with permanent visa												
All degrees	1,433	1,578	1,622	1,626	1,698	1,857	1,980	2,259	3,747	4,319	3,765	2,913
Science and engineering	994	1,089	1,130	1,124	1,197	1,285	1,383	1,641	3,021	3,509	3,007	2,261
Natural sciences[b]	321	380	429	403	437	473	537	630	1,460	1,761	1,510	1,089
Math and computer sciences	83	83	86	93	102	118	120	178	270	349	250	189
Social sciences[c]	247	271	249	263	269	306	315	364	453	443	455	390
Engineering	343	355	366	365	389	388	411	469	838	956	792	593
Non-U.S. citizen with temporary visa												
All degrees	5,276	5,612	6,195	6,648	8,093	9,311	9,953	9,932	9,406	8,810	9,610	8,463
Science and engineering	4,160	4,468	4,936	5,391	6,571	7,641	8,092	8,113	7,521	6,994	7,802	6,948
Natural sciences[b]	1,575	1,704	4,936	5,391	6,571	7,641	8,092	8,113	7,521	6,994	7,802	6,948
Math and computer sciences	395	445	481	524	695	846	876	865	791	747	817	730
Social sciences[c]	818	787	830	952	1,062	1,226	1,260	1,273	1,262	1,222	1,243	1,036
Engineering	1,372	1,532	1,721	1,940	2,277	2,633	2,743	2,784	2,653	2,524	2,716	2,396
Citizenship unknown												
All degrees	2,107	2,196	2,393	2,652	1,371	793	947	1,161	734	874	1,299	3,641
Science and engineering	1,261	1,371	1,498	1,749	933	468	641	757	497	545	800	1,894
Natural sciences[b]	448	446	557	582	284	165	185	247	161	170	299	661
Math and computer sciences	82	74	71	123	77	24	55	62	30	53	67	149
Social sciences[c]	453	529	550	670	301	172	226	231	190	180	228	709
Engineering	278	267	320	374	271	107	175	217	116	142	206	375

[a]Data include all doctorates awarded to U.S. citizens and permanent residents, temporary residents, and persons whose citizenship is unknown.

[b]Natural sciences here include physical, earth, atmospheric, oceanographic, biological, and agricultural sciences.

[c]Social sciences include psychology, sociology, and other social sciences.

SOURCE: National Science Foundation, Division of Science Resources Studies (NSF/SRS), *Science and Engineering Doctorate Awards: 1999*, NSF 99-323 (Arlington, VA: 1999).

See figure 4-32 in Volume 1.

Appendix table 4-27.
Earned doctoral degrees in science and engineering in selected countries and regions: 1997 or most recent year

Region/country	All doctoral degrees	Degree field: All S&E doctoral degrees	Natural sciences[a]	Math & computer sciences	Agri-culture	Social sciences[b]	Engineering
Total, three world regions	159,235	90,577	38,643	6,048	6,176	15,417	24,293
Asia							
Total	35,219	18,513	6,533	609	2,363	1,029	7,979
China	6,042	5,328	1,678	334	348	325	2,643
India	9,070	4,000	2,950	NA	715	NA	335
Japan[c]	13,921	6,157	1,315	NA	1,043	388	3,411
South Korea	4,999	2,189	427	187	178	240	1,157
Taiwan	1,187	839	163	88	79	76	433
Europe							
Total	73,306	40,454	19,953	3,248	2,275	5,718	9,260
European Union	69,006	38,167	18,863	3,065	2,141	5,337	8,761
Austria	2,144	1,184	316	139	245	137	347
Belgium	602	373	191	19	66		97
Denmark	365	177	103	0	34	10	30
Finland	1,422	598	168	74	54	118	184
France	11,073	8,962	4,394	869	207	1,629	1,863
Germany	24,174	11,728	6,418	785	521	1,775	2,229
Greece	932	367	128	44	36	66	93
Ireland	423	307	234	13	14	10	36
Italy	3,463	1,643	770	22	156	85	610
The Netherlands	5,014	1,567	594	0	311	261	401
Spain	5,852	2,550	1,449	331	107	249	414
Sweden	2,549	1,580	473	204	102	181	620
United Kingdom	10,993	7,131	3,625	565	288	816	1,837
European Free Trade Assoc	4,300	2,287	1,090	183	134	381	499
Norway	643	425	145	32	32	88	128
Switzerland	3,657	1,862	945	151	102	293	371
The Americas							
Total	50,710	31,610	12,157	2,191	1,538	8,670	7,054
North America	47,273	29,408	11,032	2,183	1,130	8,467	6,596
Canada	3,834	2,165	629	171	116	759	490
Mexico	734	396	113	11	48	170	54
United States	42,705	26,847	10,290	2,001	966	7,538	6,052
South America	3,437	2,202	1,125	8	408	203	458
Argentina	408	382	218	8	97	18	41
Brazil	2,972	1,775	862	NA	311	185	417
Chile	57	45	45	NA	0	0	0

NA = not available

NOTES: Data are compiled from numerous national and international sources, and degree fields may not be strictly comparable. Data for Austria, Canada, China, Denmark, Finland, France, Germany, Ireland, Italy, Japan, the Netherlands, Norway, South Korea, Sweden, Taiwan, The United Kingdom, and the United States are for 1997. Data for Argentina, Belgium, Brazil, Chile, Mexico, Spain, and Switzerland are for 1996. Data for India and Greece are for 1994.

[a]Natural sciences here include physical, earth, atmospheric, oceanographic, and biological sciences.

[b]Social sciences include psychology, sociology, and other social sciences.

[c]Japanese data include "thesis" doctorates, called *Ronbun Hakase,* earned by employees in industry.

SOURCES: **ASIA: China**—National Research Center for Science and Technology for Development, unpublished tabulations; **India**—Department of Science and Technology, *Research and Development Statistics 1994–95* (New Delhi:1996); **Japan**—Ministry of Education, Science, and Culture (Monbusho), *Monbusho Survey of Education* (Tokyo: annual series); **South Korea**—Ministry of Education, *Statistical Yearbook of Education* (Seoul:1998); **Taiwan**—Ministry of Education, *Educational Statistics of the Republic of China: 1998* (Taipei: 1998); **EUROPEAN UNION: Austria**—Austrian Central Statistical Office, unpublished tabulations; **Denmark**—Department of Higher Education, Ministry of Education, unpublished tabulations (1997); **Finland**—Central Statistical Office, unpublished tabulations (1997), and Organisation for Economic Co-operation and Development and Centre for Educational Research and Innovation (OECD/CERI); **France**—Ministère de l'Éducation National, *Rapport sur les Études Doctorales* (Paris: 1998); **Germany**—Statistisches Bundesamt, *Prüfungen an Hochschulen* (Wiesbaden: 1998); **Greece**—OECD/CERI; **Ireland**—OECD/CERI; **Italy**—OECD/CERI; **The Netherlands**—Department for Statistics of Education and Science, Netherlands Central Bureau of Statistics, unpublished tabulations (1997); **Spain**—OECD/CERI; **Sweden**—Statistics Sweden, unpublished tabulations (1997), and OECD/CERI; **United Kingdom**—Higher Education Statistical Agency, *Students in Higher Education Institutions, 97/98* (Cheltenham: 1999); **EUROPEAN FREE TRADE ASSOCIATION: Norway**—Institute for Studies in Research and Higher Education, the Norwegian Research Council, unpublished tabulations (1997); **Switzerland**—Swiss Federal Statistical Office, unpublished tabulations (1997); **THE AMERICAS: Argentina**—Ministry of Education and Culture, unpublished tabulations (1999); **Brazil**—Ministério de Educação e Cultura, Coordenação de Aperfeiçoamento de Pessoal de Nivel Superior (CAPES) (Brasilia); **Canada**—Association of Universities and Colleges of Canada, unpublished tabulations (1998); **Chile**—Consejo de Rectores Universidades Chilenas, unpublished tabulations; **Mexico**—Asociación Nacional de Universidades y Instituciones de Educación Superior, *Anuario Estadístico 1997 Posgrado* (Mexico, 1997); and **United States**—National Science Foundation, Division of Science Resources Studies (NSF/SRS), S*cience and Engineering Doctorate Awards: 1997*, NSF 99-323 (Arlington, VA: 1999).

See figure 4-18 in Volume 1.

Appendix table 4-28.
Doctoral degrees in science and engineering in selected Western industrialized countries, by field: 1975–97

Country/degree field	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
France																							
Total Ph.D.s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5,963	6,782	7,198	8,585	9,295	10,602	9,801	10,963	11,073
Total S&E	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4,888	5,158	5,384	6,377	6,820	7,555	7,027	8,511	8,962
Natural sciences[a]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2,615	2,841	2,883	3,525	3,631	3,866	3,572	4,052	4,394
Math/computer sciences	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	722	795	831	976	1,065	1,203	1,129	1,241	869
Agricultural sciences	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	37	53	38	38	52	94	84	194	207
Social sciences[b]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	672	488	539	663	797	1,018	815	1,285	1,629
Engineering	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	842	981	1,093	1,175	1,275	1,374	1,427	1,739	1,863
Germany[c]																							
Total Ph.D.s	11,418	11,531	11,386	11,755	11,939	12,222	12,283	12,963	13,637	14,133	14,951	15,530	16,064	17,321	17,901	22,372	22,462	21,438	22,000	22,000	22,387	22,849	24,174
Total S&E	4,588	4,742	4,922	4,677	4,821	4,780	4,710	4,937	4,978	5,153	5,738	6,091	6,576	7,101	7,568	10,762	10,465	10,148	10,200	10,200	10,889	11,472	11,728
Natural sciences[a]	2,238	2,364	2,443	2,287	2,380	2,462	2,444	2,313	2,404	2,315	2,986	3,184	3,440	3,844	4,095	5,319	5,326	5,638	5,700	5,700	5,868	6,078	6,418
Math/computer sciences	242	250	294	242	273	227	213	261	274	239	274	278	294	332	383	429	418	464	500	500	663	810	785
Agricultural sciences	338	347	323	327	281	331	317	361	361	411	414	406	468	450	518	997	709	602	500	500	507	512	521
Social sciences[b]	1,015	1,042	1,024	995	959	949	913	1,012	966	1,014	968	1,064	1,068	1,150	1,200	1,544	1,483	1,344	1,400	1,400	1,741	1,803	1,775
Engineering	755	739	838	826	928	811	823	990	973	1,174	1,096	1,159	1,306	1,325	1,372	2,473	2,529	2,100	2,100	2,100	2,110	2,269	2,229
United Kingdom																							
Total Ph.D.s	5,341	5,210	5,331	5,601	5,700	5,804	5,983	6,333	6,528	6,291	6,208	6,492	6,835	7,588	7,845	8,242	8,387	8,396	8,717	9,000	9,761	9,974	10,993
Total S&E	4,023	3,981	4,115	4,235	4,222	4,287	4,463	4,738	4,759	4,567	4,608	4,759	5,016	5,663	5,816	6,207	6,302	6,112	6,098	6,325	6,512	6,583	7,131
Natural sciences[a]	2,082	2,070	2,155	2,192	2,303	2,300	2,389	2,515	2,426	2,408	2,409	2,495	2,583	2,787	2,937	3,113	3,151	3,054	3,034	3,200	3,356	3,373	3,625
Math/computer sciences	242	264	282	277	273	256	311	296	289	290	282	290	321	374	415	471	535	519	528	600	602	581	565
Agricultural sciences	209	167	208	194	185	176	195	190	183	223	159	260	192	244	238	241	248	279	275	325	351	299	288
Social sciences[b]	431	475	513	539	495	532	541	603	663	657	687	686	732	899	878	916	914	935	739	700	646	674	816
Engineering	1,059	1,005	957	1,033	966	1,023	1,027	1,134	1,198	989	1,071	1,028	1,188	1,359	1,348	1,466	1,454	1,325	1,522	1,500	1,557	1,656	1,837
United States																							
Total Ph.D.s	32,952	32,946	31,716	30,875	31,239	31,020	31,356	31,111	31,282	31,337	31,298	31,899	32,367	33,499	34,324	36,068	37,517	38,853	39,754	41,011	41,743	42,415	42,705
Total S&E	18,799	18,472	18,008	17,653	17,872	17,775	18,257	18,275	18,635	18,748	18,935	19,437	19,894	20,932	21,732	22,868	24,023	24,675	25,443	26,205	26,535	27,229	27,180
Natural sciences[a]	8,103	7,863	7,676	7,601	7,817	7,864	7,995	8,195	8,195	8,336	7,326	7,486	7,679	8,157	8,099	8,589	9,086	9,372	9,562	9,996	9,997	10,355	10,414
Math/computer sciences	1,147	1,003	964	959	979	962	960	940	987	993	998	1,128	1,190	1,264	1,471	1,597	1,839	1,927	2,024	2,022	2,188	2,043	2,030
Agricultural sciences	905	788	782	853	855	912	982	951	1,015	997	1,111	998	977	1,015	1,086	1,176	1,074	1,063	969	1,078	1,036	1,037	978
Social sciences[b]	6,538	6,768	6,720	6,668	6,582	6,470	6,774	6,494	6,672	6,506	6,335	6,450	6,337	6,310	6,532	6,614	6,806	6,873	7,190	7,289	7,307	7,490	7,660
Engineering	3,011	2,838	2,648	2,425	2,494	2,479	2,528	2,646	2,781	2,913	3,166	3,376	3,712	4,187	4,543	4,894	5,215	5,439	5,696	5,822	6,008	6,305	6,098

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 4-28.
Doctoral degrees in science and engineering in selected Western industrialized countries, by field: 1975–97

Country/degree field	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Summary, S&E doctoral degrees, by country																							
Total all countries	27,410	27,123	27,045	26,912	26,915	27,067	27,430	28,175	28,372	28,468	29,282	30,288	31,487	33,697	40,003	44,997	46,171	47,311	48,559	50,287	50,964	53,796	54,668
France	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4,888	5,158	5,384	6,377	6,820	7,555	7,027	8,511	8,962
Germany	4,588	4,742	4,922	4,677	4,821	4,780	4,710	4,937	4,978	5,153	5,738	6,091	6,576	7,101	7,568	10,762	10,465	10,148	10,200	10,200	10,889	11,472	11,728
United Kingdom	4,023	3,981	4,115	4,235	4,222	4,287	4,463	4,738	4,759	4,567	4,608	4,759	5,016	5,663	5,816	6,207	6,302	6,112	6,098	6,325	6,512	6,583	7,131
United States	18,799	18,472	18,008	17,653	17,872	17,775	18,257	18,275	18,635	18,748	18,935	19,437	19,894	20,932	21,732	22,868	24,023	24,675	25,443	26,205	26,535	27,229	27,180

NA = not available

NOTE: French doctoral degrees are not available in the same data series before 1989.

[a]Natural sciences include physical, biological, earth, atmospheric, and oceanographic sciences.

[b]Social sciences include psychology, sociology, and other social sciences.

[c]The rise in the data from Germany in 1990 reflects the inclusion of degrees from former East Germany beginning in that year.

SOURCES: **France**—Ministère de l'Éducation Nationale, de la Recherche et de la Technologie, *Rapport sur les Éudes Doctorales* (Paris: 1998); **Germany**—*Statistisches Bundesamt, Prüfungen an Hochschulen* (Wiesbaden: 1998); **United Kingdom**—Higher Education Statistical Agency, *Students in Higher Education Institutions, 97/98* (Cheltenham: 1999); **United States**—National Science Foundation, Science Resources Studies Division, *Science and Engineering Doctorate Awards: 1997*, NSF 99-323 (Arlington, VA: 1999).

See figure 4-19 in Volume 1.

Appendix table 4-29.
Doctoral degrees in science and engineering in selected Asian countries, by field: 1975–97

Country/degree field	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
China																							
Total Ph.D.s	0	0	0	0	0	0	0	13	19	91	234	307	622	1,682	1,904	2,127	2,556	2,540	2,114	3,590	4,364	4,950	6,042
Total S&E	0	0	0	0	0	0	0	NA	NA	NA	125	127	218	797	1,024	1,069	1,198	1,357	1,895	2,741	3,417	4,428	5,328
Natural sciences[a]	0	0	0	0	0	0	0	NA	NA	NA	33	27	52	165	141	209	252	304	528	918	1,191	1,479	1,678
Math/computer sciences	0	0	0	0	0	0	0	NA	NA	NA	23	10	31	75	78	89	95	101	103	139	187	264	334
Agricultural sciences	0	0	0	0	0	0	0	NA	NA	NA	1	0	8	55	56	20	37	68	92	125	182	256	348
Social sciences[b]	0	0	0	0	0	0	0	NA	NA	NA	0	1	0	26	23	36	47	61	102	170	198	234	325
Engineering	0	0	0	0	0	0	0	NA	NA	NA	68	89	127	476	726	715	767	823	1,069	1,389	1,659	2,195	2,643
India																							
Total Ph.D.s	2,015	2,337	2,710	3,144	3,646	4,229	4,904	5,688	6,597	6,934	7,139	7,346	7,603	7,598	8,284	8,586	8,374	8,383	8,720	9,070	9,070	9,070	9,070
Total S&E	1,909	2,143	2,408	2,600	2,917	3,061	3,356	3,600	3,886	4,162	3,976	4,052	4,123	4,208	4,209	4,166	4,212	4,183	4,021	4,000	4,000	4,000	4,000
Natural sciences[a]	1,484	1,651	1,837	2,044	2,261	2,385	2,516	2,654	2,800	2,954	2,892	2,922	2,937	3,038	3,044	2,976	2,950	3,044	2,997	2,950	2,950	2,950	2,950
Math/computer sciences	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Agricultural sciences	289	317	348	422	480	483	558	566	575	698	575	576	583	576	579	583	633	688	701	715	715	715	715
Social sciences[b]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Engineering	136	174	223	134	176	193	282	380	511	510	509	554	603	594	586	607	629	451	323	335	335	335	335
Japan																							
Total Ph.D.s	4,592	5,138	5,322	5,648	5,812	6,269	6,599	6,810	7,233	7,477	7,978	8,533	9,157	9,602	10,036	10,633	10,758	10,885	11,576	12,160	12,645	13,820	13,921
Total S&E	2,127	2,371	2,492	2,478	2,515	2,611	2,632	2,631	2,676	2,802	3,088	3,095	3,248	3,511	3,561	3,704	3,874	4,056	4,438	4,877	5,205	6,006	6,157
Natural sciences[a]	676	717	843	782	814	822	791	762	774	807	860	820	837	881	876	835	863	892	1,009	1,132	1,182	1,243	1,315
Math/computer sciences	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Agricultural sciences	381	490	518	442	430	527	529	521	515	614	697	646	715	746	734	719	791	870	824	894	956	1,108	1,043
Social sciences[b]	84	85	88	88	76	76	76	93	97	90	127	136	149	167	177	183	191	200	243	241	276	358	388
Engineering	986	1,079	1,043	1,166	1,195	1,186	1,236	1,255	1,290	1,291	1,404	1,493	1,547	1,717	1,774	1,967	2,029	2,094	2,362	2,610	2,791	3,297	3,411
South Korea																							
Total Ph.D.s	557	557	566	574	583	592	601	610	845	1,109	1,400	1,645	1,906	2,125	2,458	2,481	2,984	3,211	3,583	3,999	4,462	4,723	4,999
Total S&E	128	128	99	116	139	169	212	269	281	360	548	631	759	871	984	945	1,135	1,228	1,421	1,650	1,920	2,046	2,189
Natural sciences[a]	29	29	22	30	41	55	75	102	83	124	212	201	277	207	192	170	225	202	244	296	358	391	427
Math/computer sciences	0	0	0	0	0	0	0	0	0	0	0	0	0	73	105	75	99	106	124	145	169	178	187
Agricultural sciences	48	48	40	43	45	48	52	55	60	77	89	105	110	155	175	154	156	151	172	196	223	199	178
Social sciences[b]	31	31	23	23	24	24	25	25	41	39	50	52	102	90	97	107	189	217	222	227	232	236	240
Engineering	20	20	14	20	29	42	60	87	97	120	197	273	270	346	415	439	466	552	659	786	938	1,042	1,157
Taiwan																							
Total Ph.D.s	37	37	45	28	43	64	64	74	86	99	115	200	225	249	314	410	410	608	701	808	848	1,053	1,187
Total S&E	21	21	24	17	26	30	49	44	58	85	109	172	197	197	257	312	370	450	513	592	650	783	839
Natural sciences[a]	2	2	4	7	4	6	8	5	8	14	20	22	35	35	42	47	62	82	97	115	115	154	163
Math/computer sciences	0	0	0	0	1	1	1	3	4	2	4	13	14	14	18	24	32	42	45	49	55	63	88
Agricultural sciences	4	4	4	5	7	5	15	8	17	15	10	28	28	28	36	33	36	39	48	60	63	65	79
Social sciences[b]	7	7	13	2	6	8	10	13	15	23	16	26	22	22	41	43	31	23	36	56	44	66	76
Engineering	8	8	3	3	8	10	15	15	14	31	59	83	98	98	120	165	209	264	287	312	373	435	433

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 4-29.
Doctoral degrees in science and engineering in selected Asian countries, by field: 1975–97

Country/degree field	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Summary, S&E doctoral degrees, by country																							
Total Asia	4,185	4,663	5,023	5,211	5,597	5,871	6,249	6,544	6,901	7,409	7,846	8,077	8,545	9,584	10,035	10,196	10,789	11,274	12,288	13,860	15,192	17,263	18,513
China	0	0	0	0	0	0	0	0	0	0	125	127	218	797	1,024	1,069	1,198	1,357	1,895	2,741	3,417	4,428	5,328
India	1,909	2,143	2,408	2,600	2,917	3,061	3,356	3,600	3,886	4,162	3,976	4,052	4,123	4,208	4,209	4,166	4,212	4,183	4,021	4,000	4,000	4,000	4,000
Japan	2,127	2,371	2,492	2,478	2,515	2,611	2,632	2,631	2,676	2,802	3,088	3,095	3,248	3,511	3,561	3,704	3,874	4,056	4,438	4,877	5,205	6,006	6,157
South Korea	128	128	99	116	139	169	212	269	281	360	548	631	759	871	984	945	1,135	1,228	1,421	1,650	1,920	2,046	2,189
Taiwan	21	21	24	17	26	30	49	44	58	85	109	172	197	197	257	312	370	450	513	592	650	783	839

NA = not available

NOTES: Japanese data include "thesis" doctorates, called *Ronbun Hakase,* earned by employees in industry. In Japanese higher education data, mathematics is included in natural sciences; computer science is included in engineering.

[a]Natural sciences include physical, biological, earth, atmospheric, and oceanographic sciences.

[b]Social sciences include psychology, sociology, and other social sciences.

SOURCES: **China**—National Research Center for Science and Technology for Development, unpublished tabulations; **India**—Department of Science and Technology, *Research and Development Statistics 1994–95* (New Delhi: 1996); **Japan**—Ministry of Education, Science, and Culture (Monbusho), *Monbusho Survey of Education* (Tokyo: annual series); **South Korea**—Ministry of Education, *Statistical Yearbook of Education* (Seoul:1998); **Taiwan**—Ministry of Education, *Educational Statistics of the Republic of China: 1998* (Taipei: 1998).

See figures 4-20 and 4-23 in Volume 1.

Appendix table 4-30.
Doctoral science and engineering degrees earned by Asian students within Asian and U.S. universities: 1975–97

Year	Within Asian universities[a]	Within U.S. universities[b]
1975	4,185	NA
1976	4,663	NA
1977	5,023	NA
1978	5,211	NA
1979	5,597	NA
1980	5,871	991
1981	6,249	1,031
1982	6,544	1,168
1983	6,901	1,339
1984	7,409	1,531
1985	7,846	1,761
1986	8,077	1,889
1987	8,545	2,218
1988	9,584	2,511
1989	10,035	2,872
1990	10,196	4,008
1991	10,789	4,911
1992	11,274	5,406
1993	12,288	5,628
1994	13,860	6,229
1995	15,192	6,352
1996	17,263	6,852
1997	18,513	5,575

NA = not available

[a]Data include S&E doctoral degrees earned within universities of selected Asian countries: China, India, Japan, South Korea, and Taiwan.

[b]Asian students in U.S. universities include those on either temporary or permanent visas from the above countries plus Hong Kong and Thailand.

SOURCES: **China**—National Research Center for Science and Technology for Development, unpublished tabulations (1997); **India**—Department of Science and Technology, *Research and Development Statistics 1994–95* (New Delhi: 1996); **Japan**—Ministry of Education, Science and Culture (Monbusho), *Monbusho Survey of Education* (Tokyo: annual series); **South Korea**—Ministry of Education, *Statistical Yearbook of Education,1998* (Seoul: 1999); **Taiwan**—Ministry of Education, *Education Statistics of the Republic of China*, 1997 (Taipei: 1998); **United States**—National Science Foundation, Division of Science Resources Studies (NSF/SRS), *Science and Engineering Degrees: 1960–84*, and *Science and Engineering Doctorate Awards: 1997*, NSF 99-323 (Arlington, VA: 1999).

See figure 4-21 in Volume 1. *Science & Engineering Indicators – 2000*

Appendix table 4-31.
Doctoral science and engineering degrees earned by Chinese students within Chinese and U.S. universities: 1987–97

Year	Within U.S. universities	Within Chinese universities
1987	293	218
1988	480	797
1989	620	1,024
1990	1,150	1,069
1991	1,793	1,198
1992	2,045	1,357
1993	2,227	1,704
1994	2,531	2,602
1995	2,752	3,230
1996	2,952	4,428
1997	2,223	5,328

SOURCES: **United States**—National Science Foundation, Science Resources Studies Division, Selected Tables from *Science and Engineering Doctorate Awards: 1997*, NSF 99-323 (Arlington, VA: 1999); and **China**—National Research Center for Science and Technology for Development, unpublished tabulations.

See figure 4-22 in Volume 1. *Science & Engineering Indicators – 2000*

Appendix table 4-32.
Undergraduate enrollment, by race/ethnicity, citizenship, and sex: 1978–96 (selected years)

Race/ethnicity and citizenship	1978	1980	1982	1984	1986	1988	1990	1992	1993	1994	1995	1996
Total												
Total	9,808,815	9,821,513	10,205,475	10,081,336	10,952,167	11,453,788	12,011,657	12,693,778	12,482,813	12,417,701	12,399,826	12,424,570
White	7,872,635	7,827,035	8,060,213	7,635,957	8,406,100	8,737,576	9,232,090	9,388,226	9,101,085	8,905,614	8,806,202	8,731,457
Asian/Pacific Islander	206,065	225,422	280,062	296,123	384,004	431,053	491,134	620,463	642,893	683,131	700,828	721,773
Black	968,059	968,481	956,510	860,322	982,214	1,002,515	1,125,591	1,282,732	1,292,621	1,319,262	1,336,052	1,354,910
Hispanic	501,053	523,021	582,726	547,837	691,621	741,814	840,370	1,032,817	1,064,348	1,120,929	1,167,472	1,218,711
American Indian/Alaskan Native	71,891	70,553	74,123	66,120	81,356	84,108	95,135	110,879	112,727	117,856	120,728	122,943
Foreign citizen	170,517	201,034	212,999	200,146	199,921	202,815	227,337	258,661	269,139	270,909	268,544	274,776
Male												
Total	4,814,322	4,723,979	4,910,480	4,787,658	5,078,768	5,192,254	5,396,557	5,644,113	5,547,126	5,484,342	5,467,370	5,475,620
White	3,884,778	3,785,209	3,881,826	3,635,294	3,908,642	3,979,958	4,165,862	4,195,726	4,067,289	3,958,270	3,918,342	3,890,906
Asian/Pacific Islander	108,261	117,574	148,969	156,947	201,591	221,673	250,287	308,564	318,289	335,737	342,084	350,740
Black	416,816	407,497	400,746	352,703	396,749	395,359	440,209	496,123	500,194	503,381	507,380	513,676
Hispanic	244,149	244,444	270,386	250,043	313,108	329,866	371,232	453,488	467,155	490,827	505,162	523,717
American Indian/Alaskan Native	33,481	31,621	33,589	29,498	35,592	35,501	39,692	46,572	47,233	48,920	50,223	51,008
Foreign citizen	116,583	134,864	143,000	132,496	127,364	122,320	129,275	143,640	146,966	147,207	144,179	145,573
Female												
Total	4,994,493	5,097,534	5,294,995	5,293,678	5,873,399	6,261,534	6,615,100	7,049,665	6,935,687	6,933,359	6,932,456	6,948,950
White	3,987,857	4,041,826	4,178,387	4,000,663	4,497,458	4,757,618	5,066,228	5,192,500	5,033,796	4,947,344	4,887,860	4,840,551
Asian/Pacific Islander	97,804	107,848	131,093	139,176	182,413	209,380	240,847	311,899	324,604	347,394	358,744	371,033
Black	551,243	560,984	555,764	507,619	585,465	607,156	685,382	786,609	792,427	815,881	828,672	841,234
Hispanic	256,904	278,577	312,340	297,794	378,513	411,948	469,138	579,329	597,193	630,102	662,310	694,994
American Indian/Alaskan Native	38,410	38,932	40,534	36,622	45,764	48,607	55,443	64,307	65,494	68,936	70,505	71,935
Foreign citizen	53,934	66,170	69,999	67,650	72,557	80,495	98,062	115,021	122,173	123,702	124,365	129,203

SOURCES: National Center for Education Statistics (NCES), *Trends in Racial/Ethnic Enrollment in Higher Education: Fall 1982 Through Fall 1996* (Washington, DC: U.S. Government Printing Office, 1999); and NCES, unpublished tabulations.

See page 4-26 in Volume 1.

Appendix table 4-33.
Undergraduate enrollment in engineering, by sex, race/ethnicity, and citizenship: 1979–98

		Sex		Race/ethnicity for U.S. citizens						
							Underrepresented minorities			
	Total	Male	Female	White	Asian American	Total	Black	Hispanic	American Indian	Foreign National
				Number						
1979	366,299	321,868	44,431	302,566	12,243	28,729	15,842	12,068	819	22,761
1981	420,402	361,133	59,269	343,649	15,815	34,353	18,911	14,359	1,083	26,585
1983	441,205	372,374	68,831	354,329	23,007	37,432	19,698	16,462	1,272	26,437
1984	429,499	362,800	66,699	340,374	25,449	37,557	19,204	17,075	1,278	26,119
1985	420,864	354,612	66,252	323,899	28,767	39,657	19,819	18,598	1,240	28,541
1986	407,657	344,999	62,658	315,861	30,201	37,240	18,459	17,586	1,195	24,355
1987	392,198	331,917	60,281	296,749	32,795	38,640	19,142	18,253	1,245	24,014
1988	385,412	325,024	60,388	288,415	34,051	40,389	20,405	18,700	1,284	22,557
1989	378,277	318,067	60,210	281,948	33,360	41,338	21,013	19,007	1,318	21,631
1990	380,287	319,506	60,781	288,732	30,898	41,169	20,833	18,873	1,463	19,488
1991	379,977	316,719	63,258	271,906	37,803	48,692	24,563	22,441	1,688	21,576
1992	382,525	316,460	66,065	270,942	38,480	51,517	25,722	23,863	1,932	21,586
1993	375,944	309,412	66,532	263,073	37,835	52,437	25,920	24,586	1,931	22,599
1994	367,298	300,643	66,655	256,287	37,009	52,188	24,994	25,216	2,028	21,764
1995	363,315	296,029	67,286	249,896	38,329	53,670	25,569	25,998	2,103	21,420
1996	356,177	288,559	67,618	248,062	37,873	53,801	24,922	26,483	2,396	21,233
1997	365,358	294,593	70,765	246,950	39,475	57,811	24,809	30,580	2,422	21,122
1998	366,991	294,598	72,393	248,439	40,523	56,919	25,699	28,802	2,418	21,110
				Percent						
1979	100.0	87.9	12.1	82.6	3.3	7.8	4.3	3.3	0.2	6.2
1981	100.0	85.9	14.1	81.7	3.8	8.2	4.5	3.4	0.3	6.3
1983	100.0	84.4	15.6	80.3	5.2	8.5	4.5	3.7	0.3	6.0
1984	100.0	84.5	15.5	79.2	5.9	8.7	4.5	4.0	0.3	6.1
1985	100.0	84.3	15.7	77.0	6.8	9.4	4.7	4.4	0.3	6.8
1986	100.0	84.6	15.4	77.5	7.4	9.1	4.5	4.3	0.3	6.0
1987	100.0	84.6	15.4	75.7	8.4	9.9	4.9	4.7	0.3	6.1
1988	100.0	84.3	15.7	74.8	8.8	10.5	5.3	4.9	0.3	5.9
1989	100.0	84.1	15.9	74.5	8.8	10.9	5.6	5.0	0.3	5.7
1990	100.0	84.1	16.0	75.9	8.1	10.8	5.5	5.0	0.4	5.1
1991	100.0	83.4	16.6	71.6	9.9	12.8	6.5	5.9	0.4	5.7
1992	100.0	82.7	17.3	70.8	10.1	13.5	6.7	6.2	0.5	5.6
1993	100.0	82.3	17.7	70.0	10.1	13.9	6.9	6.5	0.5	6.0
1994	100.0	81.9	18.1	69.8	10.1	14.2	6.8	6.9	0.6	5.9
1995	100.0	81.5	18.5	68.8	10.5	14.8	7.0	7.2	0.6	5.9
1996	100.0	79.4	18.6	67.0	10.4	14.8	6.9	7.3	0.7	5.8
1997	100.0	80.6	19.4	67.6	10.8	15.8	6.8	8.4	0.7	5.8
1998	100.0	80.3	19.7	67.7	11.0	15.5	7.0	7.8	0.7	5.8

NOTE: The large jump in the percentage of engineering enrollment by minorities in 1990–91 may be an artifact of more careful reporting of race/ethnicity after the 1990 census rather than significant increases in engineering enrollment in one year. That is, in previous years, minorities may have underreported their race/ethnicity.

SOURCE: Engineering Workforce Commission, *Engineering and Technology Enrollments, Fall 1998* (Washington, DC: American Association of Engineering Societies,1999).

See figure 4-25 in Volume 1.

Science & Engineering Indicators – 2000

Appendix table 4-34.
Earned associate's degrees, by field and race/ethnicity: 1977–96 (selected years)

Field	1977	1979	1981	1985	1987	1989	1990	1991	1992	1993	1994	1995	1996
Total													
All degrees	409,942	407,471	420,910	459,087	440,816	440,375	459,048	486,297	508,704	519,098	546,574	544,094	540,644
Science and engineering	NA	NA	NA	25,957	22,167	19,479	19,406	19,154	22,361	23,118	25,172	23,644	23,829
Natural sciences[a]	NA	NA	NA	4,691	3,950	3,952	4,286	4,430	4,859	5,090	5,793	5,790	6,101
Math and computer sciences	NA	NA	NA	13,679	9,953	8,846	8,600	8,640	10,346	10,255	10,532	10,230	9,956
Social sciences[b]	NA	NA	NA	3,664	3,676	3,949	4,118	3,574	4,441	5,248	6,019	5,348	5,742
Engineering	NA	NA	NA	3,923	4,588	2,732	2,402	2,510	2,715	2,525	2,828	2,276	2,030
Engineering technology	38,244	40,891	51,661	51,579	47,434	46,180	44,739	42,595	38,015	38,473	39,889	36,956	33,597
Non-science and -engineering	NA	NA	NA	433,130	418,649	420,896	439,642	467,143	486,343	495,980	521,402	520,450	516,815
White													
All degrees	342,382	331,173	339,183	355,422	345,546	330,557	343,629	376,869	388,049	392,637	419,962	408,126	403,072
Science and engineering	NA	NA	NA	18,133	16,169	13,898	13,684	13,842	15,487	15,631	17,809	16,310	16,177
Natural sciences[a]	NA	NA	NA	3,548	3,078	3,231	3,458	3,574	3,878	3,989	4,493	4,326	4,606
Math and computer sciences	NA	NA	NA	10,255	7,360	6,044	5,704	6,054	6,631	6,515	7,133	6,809	6,535
Social sciences[b]	NA	NA	NA	2,070	2,496	2,637	2,752	2,347	2,892	3,241	4,050	3,524	3,552
Engineering	NA	NA	NA	2,260	3,235	1,986	1,770	1,867	2,086	1,886	2,133	1,651	1,484
Engineering technology	33,109	33,662	40,804	40,934	37,383	33,584	31,699	33,792	28,242	28,442	31,457	27,737	25,480
Non-science and -engineering	NA	NA	NA	337,289	329,377	316,659	329,945	363,027	372,562	377,006	402,153	391,816	386,895
Asian/Pacific Islander													
All degrees	7,174	7,617	8,757	10,165	11,329	11,761	12,687	15,069	15,369	16,280	18,555	20,976	22,630
Science and engineering	NA	NA	NA	828	1,051	834	851	842	1,118	1,108	1,283	1,353	1,469
Natural sciences[a]	NA	NA	NA	86	112	120	179	220	253	228	304	331	388
Math and computer sciences	NA	NA	NA	511	464	401	411	388	548	528	566	603	615
Social sciences[b]	NA	NA	NA	47	106	119	110	88	132	216	229	267	320
Engineering	NA	NA	NA	184	369	194	151	146	185	136	184	152	146
Engineering technology	781	1,132	1,641	1,570	1,989	1,663	1,499	1,496	1,311	1,358	1,258	1,387	1,391
Non-science and -engineering	NA	NA	NA	9,337	10,278	10,927	11,836	14,227	14,251	15,172	17,272	19,623	21,161
Black													
All degrees	33,176	34,985	35,330	35,861	33,858	32,185	32,882	37,854	38,721	41,260	45,597	45,923	49,245
Science and engineering	NA	NA	NA	1,653	1,766	1,460	1,540	1,631	1,809	1,963	2,069	2,033	2,109
Natural sciences[a]	NA	NA	NA	160	198	125	153	149	161	178	206	276	247
Math and computer sciences	NA	NA	NA	938	961	828	876	921	1,093	1,004	1,120	1,060	1,124
Social sciences[b]	NA	NA	NA	407	358	387	423	435	420	580	564	549	604
Engineering	NA	NA	NA	148	249	120	88	126	135	201	179	148	134
Engineering technology	1,990	2,022	2,903	3,395	3,100	2,829	2,648	3,030	2,445	2,698	3,197	2,932	2,883
Non-science and -engineering	NA	NA	NA	34,208	32,092	30,725	31,342	36,223	36,912	39,297	43,528	43,890	47,136

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 4-34.
Earned associate's degrees, by field and race/ethnicity: 1977–96 (selected years)

Field	1977	1979	1981	1985	1987	1989	1990	1991	1992	1993	1994	1995	1996
Hispanic													
All degrees	19,808	20,710	22,088	22,783	22,804	23,475	24,569	29,019	30,253	33,015	35,557	38,499	39,115
Science and engineering	NA	NA	NA	1,380	1,635	1,453	1,289	1,463	1,773	2,152	2,329	2,316	2,310
Natural sciences[a]	NA	NA	NA	248	281	236	215	232	238	300	404	425	419
Math and computer sciences	NA	NA	NA	676	620	609	591	677	918	1,086	1,074	1,131	1,031
Social sciences[b]	NA	NA	NA	330	365	432	385	401	485	613	703	599	728
Engineering	NA	NA	NA	126	369	176	98	153	132	153	148	161	132
Engineering technology	1,644	1,799	2,219	2,084	2,359	2,232	2,298	2,411	2,317	2,398	2,478	2,687	2,644
Non-science and -engineering	NA	NA	NA	21,403	21,169	22,022	23,280	27,556	28,480	30,863	33,228	36,183	36,805
American Indian/Alaskan Native													
All degrees	2,499	2,336	2,584	2,953	3,049	3,102	3,290	3,772	3,874	4,213	4,879	5,352	5,221
Science and engineering	NA	NA	NA	163	195	182	202	257	247	315	419	410	464
Natural sciences[a]	NA	NA	NA	45	49	44	38	66	58	73	125	123	116
Math and computer sciences	NA	NA	NA	56	49	67	84	91	69	116	116	124	136
Social sciences[b]	NA	NA	NA	51	70	59	68	79	106	118	160	142	201
Engineering	NA	NA	NA	11	27	12	12	21	14	8	18	21	11
Engineering technology	204	191	285	267	219	257	168	232	175	210	263	260	242
Non-science and -engineering	NA	NA	NA	2,790	2,854	2,920	3,088	3,515	3,627	3,898	4,460	4,942	4,757
Foreign citizen													
All degrees	3,331	4,554	6,645	6,426	4,485	5,969	5,937	6,977	8,027	9,024	10,169	9,911	10,022
Science and engineering	NA	NA	NA	616	408	461	362	368	520	637	707	707	718
Natural sciences[a]	NA	NA	NA	74	81	97	75	73	109	138	157	177	164
Math and computer sciences	NA	NA	NA	313	177	205	169	171	251	284	282	298	291
Social sciences[b]	NA	NA	NA	73	30	76	48	56	80	137	179	156	193
Engineering	NA	NA	NA	156	120	83	70	68	80	78	89	76	70
Engineering technology	393	585	1,055	680	575	533	467	526	504	380	414	412	332
Non-science and -engineering	NA	NA	NA	5,810	4,077	5,508	5,575	6,609	7,507	8,387	9,462	9,204	9,304

NA = not available

NOTES: Data on associate's degrees are not available for broad science and engineering fields before 1983. Data by racial/ethnic group were collected on a biennial schedule until 1990. Data by racial/ethnic group are collected by broad field of study only; therefore, these data cannot be adjusted to the exact field taxonomies used by the National Science Foundation.

[a]Natural sciences here include physical, earth, atmospheric, oceanographic, biological, and agricultural sciences.

[b]Social sciences include psychology, sociology, and other social sciences.

SOURCES: National Center for Education Statistics (NCES), Earned Degrees and Completion Surveys, unpublished tabulations; and National Science Foundation, Division of Science Resources Studies (NSF/SRS), unpublished tabulations.

See figure 4-34 in Volume 1.

Appendix table 4-35.
Earned bachelor's degrees, by field, race/ethnicity, and citizenship: 1977–96 (selected years)

Field and race/ethnicity	1977	1979	1981	1985	1987	1989	1991	1993	1994	1995	1996
Total											
All degrees	928,228	931,340	946,877	990,877	1,003,532	1,030,171	1,107,997	1,179,278	1,183,141	1,174,436	1,179,815
Science and engineering	337,834	334,632	337,739	342,970	343,070	337,431	356,785	388,435	395,380	399,809	405,921
Natural sciences[a]	98,342	96,186	90,254	75,670	68,929	63,073	65,401	77,395	83,903	91,026	98,520
Math and computer sciences	20,729	20,670	26,406	54,388	56,442	46,277	40,194	39,347	38,889	38,421	37,606
Social sciences[b]	169,086	154,976	145,684	135,341	143,276	161,134	189,004	209,023	209,626	207,032	206,729
Engineering	49,677	62,800	75,395	77,571	74,423	66,947	62,186	62,670	62,962	63,330	63,066
Engineering technology	NA	NA	NA	20,533	20,577	20,098	18,294	16,987	16,654	16,542	16,156
Non-science and -engineering	590,394	596,708	609,138	647,907	660,462	692,740	751,212	790,843	787,761	774,627	773,894
U.S. citizen or permanent resident											
All degrees	910,835	911,637	923,906	950,118	948,563	980,064	1,052,610	1,122,276	1,123,862	1,110,512	1,142,028
Science and engineering	329,351	324,750	324,724	325,172	319,963	317,950	335,424	366,357	372,858	375,745	391,074
Natural sciences[a]	96,268	94,101	88,001	72,860	65,632	60,423	62,117	73,571	80,096	86,688	96,179
Math and computer sciences	20,138	19,926	25,172	50,904	51,449	42,245	36,549	35,864	35,283	34,709	34,868
Social sciences[b]	166,852	152,720	143,165	131,499	135,722	154,321	180,423	199,948	200,256	197,120	201,705
Engineering	46,093	58,003	68,386	69,909	67,160	60,961	56,335	56,974	57,223	57,228	58,304
Engineering technology	NA	NA	NA	19,120	19,359	18,942	17,080	16,109	16,161	15,992	15,232
Non-science and -engineering	581,484	586,887	599,182	624,946	628,600	662,114	717,186	755,919	751,004	734,767	750,954
White, all degrees	807,857	802,665	807,509	826,356	819,477	840,326	892,363	931,603	918,124	892,785	884,128
Science and engineering	292,802	287,126	284,166	281,394	272,090	266,862	278,190	297,171	297,616	294,773	295,082
Natural sciences[a]	88,308	85,403	78,778	63,592	55,898	50,580	51,113	59,577	64,291	68,700	73,414
Math and computer sciences	18,110	17,633	22,013	43,484	42,446	33,998	28,998	27,824	26,905	25,875	25,293
Social sciences[b]	144,312	131,439	122,519	113,326	117,255	132,203	152,917	164,917	161,733	156,472	153,277
Engineering	42,072	52,651	60,856	60,992	56,491	50,081	45,162	44,853	44,687	43,726	43,098
Engineering technology	NA	NA	NA	16,673	16,541	16,156	14,279	13,245	12,909	12,616	12,032
Non-science and -engineering	515,055	515,539	523,343	544,962	547,387	573,464	614,173	634,432	620,508	598,012	589,046
Asian/Pacific Islander, all degrees	13,907	15,542	18,908	25,562	31,921	37,573	41,725	50,587	54,675	59,295	63,117
Science and engineering	6,203	7,171	9,145	13,323	16,934	19,138	20,552	24,504	26,420	29,128	31,031
Natural sciences[a]	1,935	2,227	2,406	2,880	3,641	3,973	4,670	6,364	7,228	8,677	9,829
Math and computer sciences	479	587	1,061	2,929	3,489	3,287	2,925	3,160	3,173	3,330	3,383
Social sciences[b]	2,578	2,499	2,612	3,032	4,214	5,803	6,737	8,573	9,503	10,336	11,020
Engineering	1,211	1,858	3,066	4,482	5,590	6,075	6,220	6,407	6,516	6,785	6,799
Engineering technology	0	0	0	542	807	839	768	768	720	727	730
Non-science and -engineering	7,704	8,371	9,763	12,239	14,987	18,435	21,173	26,083	28,255	30,167	32,086
Black, all degrees	58,700	60,301	60,729	57,563	55,103	56,837	65,009	76,667	82,316	85,287	89,554
Science and engineering	19,552	18,827	18,895	17,040	17,230	17,385	19,987	24,421	26,289	27,528	29,055
Natural sciences[a]	3,416	3,541	3,561	3,096	2,870	2,756	3,026	3,794	4,169	4,528	5,274
Math and computer sciences	1,073	1,159	1,371	2,913	3,654	3,249	2,808	3,178	3,390	3,493	3,396
Social sciences[b]	13,678	12,352	11,514	8,992	8,391	9,313	11,924	14,872	16,071	16,662	17,385
Engineering	1,385	1,775	2,449	2,039	2,315	2,067	2,229	2,577	2,659	2,845	3,000
Engineering technology	0	0	0	1,277	1,269	1,208	1,227	1,132	1,249	1,319	1,370
Non-science and -engineering	39,148	41,474	41,834	40,523	37,873	39,452	45,022	52,246	56,027	57,759	60,499

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 4-35.
Earned bachelor's degrees, by field, race/ethnicity, and citizenship: 1977–96 (selected years)

Field and race/ethnicity	1977	1979	1981	1985	1987	1989	1991	1993	1994	1995	1996
Hispanic, all degrees	27,043	29,719	33,167	36,391	38,196	41,361	49,027	57,845	62,683	66,691	71,015
Science and engineering	9,628	10,432	11,312	12,031	12,419	13,327	15,351	18,442	20,529	22,190	23,791
Natural sciences[a]	2,271	2,634	2,958	2,979	2,964	2,849	3,010	3,468	3,970	4,276	4,899
Math and computer sciences	435	495	688	1,380	1,696	1,568	1,695	1,566	1,678	1,843	1,865
Social sciences[b]	5,632	5,748	5,846	5,485	5,205	6,349	8,080	10,447	11,738	12,420	13,296
Engineering	1,290	1,555	1,820	2,187	2,554	2,561	2,566	2,961	3,143	3,651	3,731
Engineering technology	0	0	0	525	664	634	731	853	813	883	988
Non-science and -engineering	17,415	19,287	21,855	24,360	25,777	28,034	33,676	39,403	42,154	44,501	47,224
American Indian/Alaskan Native, all degrees	3,328	3,410	3,593	4,246	3,866	3,967	4,486	5,574	6,064	6,454	6,813
Science and engineering	1,166	1,194	1,206	1,384	1,290	1,238	1,344	1,819	2,004	2,126	2,268
Natural sciences[a]	338	296	298	313	259	265	298	368	438	507	559
Math and computer sciences	41	52	39	198	164	143	123	136	137	168	142
Social sciences[b]	652	682	674	664	657	653	765	1,139	1,211	1,230	1,324
Engineering	135	164	195	209	210	177	158	176	218	221	243
Engineering technology	0	0	0	103	78	105	75	111	98	115	112
Non-science and -engineering	2,162	2,216	2,387	2,862	2,576	2,729	3,142	3,755	4,060	4,328	4,545
Foreign citizen											
All degrees	15,744	17,853	22,631	29,258	28,592	26,457	29,657	32,371	34,227	37,012	37,787
Science and engineering	8,297	9,798	12,966	14,071	13,677	12,323	12,724	13,802	13,929	14,754	14,847
Natural sciences[a]	2,042	2,061	2,251	2,132	1,786	1,744	1,941	2,330	2,114	2,262	2,323
Math and computer sciences	583	741	1,233	2,879	3,233	2,678	2,615	2,756	2,835	2,888	2,738
Social sciences[b]	2,098	2,232	2,519	2,870	2,769	2,829	3,586	4,211	4,440	4,794	5,024
Engineering	3,574	4,764	6,963	6,190	5,889	5,072	4,582	4,505	4,540	4,810	4,762
Engineering technology	NA	NA	NA	1,277	986	659	712	441	493	550	585
Non-science and -engineering	7,447	8,055	9,665	15,187	14,915	14,134	16,933	18,569	20,298	22,258	22,940

NA = not available

NOTES: Data by racial/ethnic group were collected on a biennial schedule until 1990 and annually thereafter. Data for 1983 are not available. Data by racial/ethnic group are collected by broad fields of study only; therefore, these data cannot be adjusted to the exact field taxonomies used by the National Science Foundation.

[a]Natural sciences here include physical, earth, atmospheric, oceanographic, biological, and agricultural sciences.

[b]Social sciences include psychology, sociology, and other social sciences.

SOURCE: National Science Foundation, Division of Science Resources Studies (NSF/SRS), *Science and Engineering Degrees, by Race/Ethnicity of Recipients: 1977–96* (Arlington, VA: 1998).

See figures 4-28 and 4-34 in Volume 1.

Appendix table 4-36.
First university degrees, and ratio of first university degrees and science and engineering degrees to the 24-year-old population, in selected countries, by sex: 1997 or most recent year

Region/country	All first university degrees	Science & engineering degrees	Degree fields: Natural sciences[b]	Degree fields: Social sciences[c]	Degree fields: Engineering	Total number of 24-year-olds	Ratio of[a]: First university degrees to 24 year-old population	Ratio of[a]: NS&E degrees to 24 year-old population	Ratio of[a]: Social science degrees to 24 year-old population
Male									
Asia									
Japan	342,703	285,295	24,326	166,415	94,554	1,020,126	33.6	11.7	16.3
South Korea	115,634	66,149	19,358	11,145	35,646	452,956	25.5	12.1	2.5
Taiwan	38,473	21,425	7,185	2,172	12,068	176,512	21.8	10.9	1.2
Europe									
Germany	73,587	47,482	15,324	16,954	15,204	441,734	16.7	6.9	3.8
United Kingdom[d]	122,290	53,864	25,726	8,817	19,321	377,419	32.4	11.9	2.3
North America									
Canada	51,046	25,881	9,242	10,208	6,431	190,600	26.8	8.2	5.4
Mexico	99,136	47,637	12,568	8,391	26,678	1,043,000	9.5	3.8	0.8
United States	528,000	203,341	76,623	74,920	51,798	1,864,000	28.3	6.9	4.0
Female									
Asia									
Japan	181,809	66,058	10,457	47,204	8,397	970,675	18.7	1.9	4.9
South Korea	80,932	24,557	13,357	5,537	5,663	420,028	19.3	4.5	1.3
Taiwan	32,229	6,987	3,204	2,823	960	166,662	19.3	2.5	1.7
Europe									
Germany	63,742	23,472	9,970	10,769	2,733	461,415	13.8	2.8	2.3
United Kingdom[d]	136,463	35,823	20,651	11,919	3,253	359,418	38.0	6.7	3.3
North America									
Canada	67,444	28,509	9,141	17,787	1,581	184,200	36.6	5.8	9.7
Mexico	91,888	24,228	8,168	8,507	7,553	1,017,000	9.0	1.5	0.8
United States	651,815	181,333	59,320	110,697	11,316	1,807,000	36.1	3.9	6.1

NOTES: Mexican and U.S. data are for 1996. All other countries are for 1997.

[a]Ratios given in the last three columns are the number of degrees per 100 of the 24-year-old population.

[b]Natural sciences include physical, earth, atmospheric, oceanographic, biological sciences, as well as agriculture, mathematics, and computer science degrees.

[c]Social sciences include psychology, sociology, and other social sciences. Japanese social science data also include business administration. Mexican social science data are estimated.

[d]U.K. data include former colleges and polytechnics.

SOURCES: **ASIA: Japan**—Ministry of Education, Science, and Culture (Monbusho), *Monbusho Survey of Education* (Tokyo: annual series); **South Korea**—Ministry of Education, *Statistical Yearbook of Education* (Seoul: 1998); **Taiwan**—Ministry of Education, *Educational Statistics of the Republic of China* (Taipei: 1998); **EUROPE: France**—Ministère de l'Éducation Nationale, *Repères et Références Statistiques sur les Enseignements et la Formation* (Vanves, France: 1996); **Germany**—Statistisches Bundesamt Wiesbaden, *Prüfungen an Hochschulen* (Wiesbaden: 1998); **United Kingdom**—Higher Education Statistics Agency, *Students in Higher Education Institutions: 1997/98* (Cheltenham: 1999); **NORTH AMERICA: Canada**—Association of Universities and Colleges, unpublished tabulations, 1998; **Mexico**—Asociación Nacional de Universidades e Instituciones de Educación Superior, *Anuario Estadístico 1997: Población Escolar de Licenciatura en Universidades e Institutos Tecnológicos* (1998); **United States**—National Science Foundation, Division of Science Resources Studies (NSF/SRS), *Science and Engineering Degrees 1966–97* (Arlington, VA: 1999).

See figure 4-29 in Volume 1.

Appendix table 4-37.
Percentage distribution of first university degrees and science and engineering degrees earned by males and females in selected countries and regions: 1997 or most recent year

Region/country	All first university degrees	S&E degrees	Degree fields: Natural sciences[a]	Math and computer science	Agriculture	Social sciences[b]	Engineering
Male							
Asia	62.7	79.5	67.2	66.1	62.4	76.4	90.5
Japan	65.3	81.2	74.7	76.9	63.9	77.9	91.8
South Korea	58.8	74.5	57.4	59.9	61.1	66.8	86.3
Taiwan	54.4	75.0	74.4	72.4	55.7	43.5	92.6
Europe	50.5	64.0	53.6	70.6	48.1	53.9	85.0
Germany	53.6	66.9	59.6	66.4	47.0	61.2	84.8
United Kingdom[c]	47.3	59.9	47.9	73.0	48.9	42.5	85.6
North America	45.4	54.2	47.8	64.1	71.4	40.6	80.6
Canada	42.0	47.6	45.4	70.2	31.6	36.5	80.3
Mexico	51.9	66.3	49.9	55.9	75.6	49.7	77.9
United States	44.8	52.9	48.1	66.1	75.5	40.4	82.1
Female							
Asia	37.3	20.5	32.8	33.9	37.6	23.6	9.5
Japan	34.7	18.8	25.3	23.1	36.1	22.1	8.2
South Korea	41.2	25.5	42.6	40.1	38.9	33.2	13.7
Taiwan	45.6	25.0	25.6	27.6	44.3	56.5	7.4
Europe	49.5	36.0	46.4	29.4	51.9	46.1	15.0
Germany	46.4	33.1	40.4	33.6	53.0	38.8	15.2
United Kingdom[c]	52.7	40.1	52.1	27.0	51.1	57.5	14.4
North America	54.6	45.8	52.2	35.9	28.6	59.4	19.4
Canada	58.0	52.4	54.6	29.8	68.4	63.5	19.7
Mexico	48.1	33.7	50.1	44.1	24.4	50.3	22.1
United States	55.2	47.1	51.9	33.9	24.5	59.6	17.9

NOTES: Mexico data are for 1996. All other countries are for 1997.

[a]Natural sciences here include physical, earth, atmospheric, oceanographic, and biological sciences.

[b]Social sciences include psychology, sociology, and other social sciences. Japanese social science data also include business administration. Mexican social science data are estimated.

[c]U.K. data include former colleges and polytechnics.

SOURCES: **ASIA: Japan**—Ministry of Education, Science, and Culture (Monbusho), *Monbusho Survey of Education* (Tokyo: annual series); **South Korea**—Ministry of Education, *Statistical Yearbook of Education* (Seoul: 1996); **Taiwan**—Ministry of Education, *Educational Statistics of the Republic of China* (Taipei: 1996); **EUROPE: Germany**—Statistisches Bundesamt Wiesbaden, *Prüfungen an Hochschulen* (Wiesbaden: 1998); **United Kingdom**—Higher Education Statistics Agency, *Students in Higher Education Institutions: 1995/96* (Cheltenham: 1997); **NORTH AMERICA: Canada**—Association of Universities and Colleges, unpublished tabulations, 1998; **Mexico**—Asociación Nacional de Universidades e Instituciones de Educación Superior, *Anuario Estadístico 1997: Posgrado* (1998); **United States**—National Science Foundation, Division of Science Resources Studies (NSF/SRS), *Science and Engineering Degrees 1966–94*, NSF 96-321 (Arlington, VA: 1996).

See page 4-28 in Volume 1.

Appendix table 4-38.
Earned master's degrees, by field, race/ethnicity and citizenship: 1977–96 (selected years)

Field and race/ethnicity	1977	1979	1981	1985	1987	1989	1990	1991	1992	1993	1994	1995	1996
Total													
All degrees	318,241	302,075	296,798	287,213	290,532	311,050	324,947	338,498	354,207	370,973	389,008	399,428	408,932
Science and engineering	63,779	59,684	59,598	64,726	66,774	70,333	72,228	72,828	76,184	81,415	86,080	88,431	88,730
Natural sciences[a]	16,234	16,350	15,332	14,045	13,461	13,260	12,966	12,713	13,226	13,462	14,340	14,770	16,093
Math and computer sciences	6,496	6,101	6,787	9,989	11,808	12,829	13,327	12,956	13,549	14,251	14,529	14,522	14,260
Social sciences[b]	24,798	21,723	20,763	19,757	19,448	20,509	21,950	23,152	24,399	26,044	28,504	30,522	30,620
Engineering	16,251	15,510	16,716	20,935	22,057	23,735	23,985	24,007	25,010	27,658	28,707	28,617	27,757
Engineering technology	NA	NA	NA	816	883	1,135	1,188	1,555	1,547	1,577	1,547	1,577	1,651
Non-science and -engineering	254,462	242,391	237,200	222,487	223,758	240,717	252,719	265,670	278,023	289,558	302,928	310,997	320,202
U.S. citizen or permanent resident													
All degrees	300,334	281,811	273,184	254,401	246,939	278,927	290,345	300,887	314,555	326,864	342,502	350,672	360,682
Science and engineering	55,963	50,846	49,340	50,751	50,330	55,190	55,890	55,779	58,177	61,265	65,201	67,110	68,151
Natural sciences[a]	14,437	14,410	13,411	11,676	10,721	10,756	10,234	9,857	10,191	10,317	10,929	11,471	12,720
Math and computer sciences	5,760	5,099	5,342	7,385	8,179	9,411	9,729	9,078	9,268	9,334	9,522	9,486	9,308
Social sciences[b]	23,071	19,920	18,785	17,230	15,990	18,035	19,181	20,357	21,607	23,075	25,400	27,232	27,361
Engineering	12,695	11,417	11,802	14,460	15,440	16,988	16,746	16,487	17,111	18,539	19,350	18,921	18,762
Engineering technology	NA	NA	NA	596	712	909	959	1,175	1,256	1,268	1,152	1,168	1,249
Non-science and -engineering	244,371	230,965	223,844	203,650	196,609	223,737	234,455	245,108	256,378	265,599	277,301	283,562	292,531
White, all degrees	266,109	249,401	241,255	223,649	216,807	230,322	236,874	247,524	257,062	265,668	273,913	277,437	282,713
Science and engineering	50,420	45,748	43,967	43,982	43,360	43,945	44,450	44,513	45,649	47,975	50,711	51,417	51,791
Natural sciences[a]	13,405	13,282	12,411	10,559	9,623	9,262	8,722	8,300	8,393	8,504	8,859	9,242	10,332
Math and computer sciences	5,256	4,625	4,708	6,176	6,729	6,818	7,020	6,705	6,743	6,818	6,665	6,547	6,340
Social sciences[b]	20,315	17,759	16,701	15,061	14,171	15,033	15,849	16,873	17,761	18,733	20,718	21,807	21,546
Engineering	11,444	10,082	10,147	12,186	12,837	12,832	12,859	12,635	12,752	13,920	14,469	13,821	13,573
Engineering technology	NA	NA	NA	526	581	802	830	1,041	994	982	994	982	1,053
Non-science and -engineering	215,689	203,653	197,288	179,667	173,447	186,377	192,424	203,011	211,413	217,693	223,202	226,020	230,922
Asian/Pacific Islander, all degrees	5,145	5,519	6,304	7,805	8,129	10,174	9,994	11,070	12,293	13,169	14,559	15,906	17,281
Science and engineering	1,749	1,929	2,170	3,285	3,455	4,100	4,055	4,310	4,763	4,846	5,422	5,683	5,942
Natural sciences[a]	388	469	365	450	464	545	504	532	610	615	698	802	933
Math and computer sciences	198	253	376	779	962	1,072	1,125	1,203	1,306	1,303	1,461	1,478	1,472
Social sciences[b]	426	357	350	505	379	491	563	567	624	668	820	831	916
Engineering	737	850	1,079	1,551	1,650	1,992	1,863	2,008	2,223	2,260	2,443	2,572	2,621
Engineering technology	NA	NA	NA	25	46	40	60	40	46	55	46	55	61
Non-science and -engineering	3,396	3,590	4,134	4,520	4,674	6,074	5,939	6,760	7,530	8,323	9,137	10,223	11,339
Black, all degrees	21,041	19,422	17,152	13,960	13,173	13,455	14,473	15,857	17,420	18,897	20,936	22,954	24,588
Science and engineering	2,321	2,003	1,801	1,742	1,784	1,652	1,847	2,090	2,356	2,554	2,849	3,339	3,518
Natural sciences[a]	351	382	351	290	301	238	225	261	306	310	347	383	402
Math and computer sciences	200	136	137	233	280	257	302	383	393	406	474	498	530
Social sciences[b]	1,530	1,239	1,053	889	800	802	933	1,048	1,191	1,274	1,439	1,793	1,912
Engineering	240	246	260	330	403	355	387	398	466	564	589	665	674
Engineering technology	NA	NA	NA	37	42	55	47	61	72	85	72	85	81
Non-science and -engineering	18,720	17,419	15,351	12,218	11,389	11,803	12,626	13,767	15,064	16,343	18,087	19,615	21,070

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 4-38.
Earned master's degrees, by field, race/ethnicity and citizenship: 1977–96

Field	1977	1979	1981	1985	1987	1989	1990	1991	1992	1993	1994	1995	1996
Hispanic, all degrees	7,071	6,470	7,439	7,730	7,781	8,133	8,495	9,684	10,256	11,371	13,177	13,905	15,394
Science and engineering	1,325	1,001	1,237	1,514	1,584	1,585	1,587	1,736	1,806	2,092	2,514	2,585	2,730
Natural sciences[a]	245	227	251	332	310	266	262	281	288	334	436	392	413
Math and computer sciences	91	61	102	149	183	178	169	213	215	240	244	273	264
Social sciences[b]	738	498	599	687	579	673	710	774	815	937	1,115	1,209	1,305
Engineering	251	215	285	346	512	468	446	468	488	581	719	711	748
Engineering technology	NA	NA	NA	6	17	10	19	25	37	40	37	40	47
Non-science and -engineering	5,746	5,469	6,202	6,216	6,197	6,548	6,908	7,948	8,450	9,279	10,663	11,320	12,664
American Indian/Alaskan Native, all degrees	968	999	1,034	1,257	1,049	1,082	1,050	1,125	1,228	1,344	1,618	1,542	1,693
Science and engineering	148	165	165	228	147	209	181	200	198	253	273	299	304
Natural sciences[a]	48	50	33	45	23	41	31	34	37	46	44	52	41
Math and computer sciences	15	24	19	48	25	45	13	23	19	22	24	27	30
Social sciences[b]	62	67	82	88	61	90	102	103	100	135	145	177	177
Engineering	23	24	31	47	38	33	35	40	42	50	60	43	56
Engineering technology	NA	NA	NA	2	26	2	3	8	3	6	3	6	7
Non-science and -engineering	820	834	869	1,029	902	873	869	925	1,030	1,091	1,345	1,243	1,389
Foreign citizen													
All degrees	17,345	19,427	22,058	26,952	28,264	32,123	34,602	37,611	39,652	44,109	46,506	48,756	48,250
Science and engineering	7,805	8,544	9,749	12,506	13,045	15,143	16,338	17,049	18,007	20,150	20,879	21,321	20,579
Natural sciences[a]	1,797	1,895	1,864	2,178	2,132	2,504	2,732	2,856	3,035	3,145	3411	3299	3373
Math and computer sciences	736	937	1,368	2,394	2,903	3,418	3,598	3,878	4,281	4,917	5007	5036	4952
Social sciences[b]	1,727	1,752	1,954	2,240	2,229	2,474	2,769	2,795	2,792	2,969	3,104	3,290	3,259
Engineering	3,545	3,960	4,563	5,694	5,781	6,747	7,239	7,520	7,899	9,119	9,357	9,696	8,995
Engineering technology	NA	NA	NA	124	127	131	172	279	291	309	291	309	298
Non-science and -engineering	9,540	10,883	12,309	14,446	15,219	16,980	18,264	20,562	21,645	23,959	25,627	27,435	27,671

NA = not available

NOTES: Data by racial/ethnic group were collected on a biennial schedule until 1990 and annually thereafter. Data are not available for 1983. Data by racial/ethnic group are collected by broad fields of study only; therefore, these data cannot be adjusted to the exact field taxonomies used by the National Science Foundation.

[a]Natural sciences here include physical, earth, atmospheric, oceanographic, biological, and agricultural sciences.

[b]Social sciences include psychology, sociology, and other social sciences.

SOURCES: National Science Foundation, Division of Science Resources Studies (NSF/SRS), *Science and Engineering Degrees, by Race/Ethnicity of Recipients:1989-96,* Early Release Tables, Web page <<http://www.nsf.gov/sbc/srs>>; and previous editions.

See figures 4-27, 4-30, and 4-34 in Volume 1.

Appendix table 4-39.
Earned doctoral degrees, by field, race/ethnicity, and citizenship: 1977–97 (selected years)

Field and race/ethnicity	1977	1979	1981	1983	1985	1987	1989	1991	1992	1993	1994	1995	1996	1997
Total[a]														
All degrees	31,716	31,239	31,356	31,281	31,297	32,370	34,327	37,534	38,890	39,801	41,034	41,743	42,415	42,705
Science and engineering	18,008	17,872	18,257	18,635	18,935	19,894	21,732	24,023	24,675	25,443	26,205	26,535	27,230	26,847
Natural sciences[b]	7,676	7,817	7,995	8,194	8,436	8,655	9,186	10,164	10,437	10,530	11,082	11,033	11,392	11,256
Math and computer sciences	964	979	960	987	998	1,190	1,471	1,839	1,927	2,026	2,021	2,187	2,043	2,001
Social sciences[c]	6,720	6,582	6,774	6,673	6,335	6,337	6,532	6,806	6,873	7,189	7,280	7,307	7,490	7,538
Engineering	2,648	2,494	2,528	2,781	3,166	3,712	4,543	5,214	5,438	5,698	5,822	6,008	6,305	6,052
Non-science and -engineering	13,708	13,367	13,099	12,646	12,362	12,476	12,595	13,511	14,215	14,358	14,829	15,208	15,185	15,858
U.S. citizen or permanent resident														
All degrees	27,487	26,784	26,341	25,634	24,694	24,562	25,027	27,430	27,990	28,708	30,894	32,059	31,506	30,601
Science and engineering	14,881	14,711	14,654	14,518	14,065	14,055	14,592	15,914	15,942	16,573	18,187	18,996	18,628	18,005
Natural sciences[b]	6,427	6,604	6,640	6,706	6,634	6,450	6,629	7,063	7,039	7,092	8,106	8,362	8,067	7,809
Math and computer sciences	769	778	713	664	631	671	824	969	996	1,099	1,200	1,387	1,159	1,122
Social sciences[c]	5,886	5,712	5,830	5,666	5,206	5,021	4,910	5,408	5,387	5,685	5,828	5,905	6,019	5,793
Engineering	1,799	1,617	1,471	1,482	1,594	1,913	2,229	2,474	2,520	2,697	3,053	3,342	3,383	3,281
Non-science and -engineering	12,606	12,073	11,687	11,116	10,629	10,507	10,435	11,516	12,048	12,135	12,707	13,063	12,878	12,596
White, all degrees	23,654	22,396	22,470	22,251	21,306	21,122	21,570	23,185	23,625	24,052	24,594	24,719	24,685	23,789
Science and engineering	12,875	12,314	12,573	12,671	12,169	12,052	12,501	13,323	13,326	13,737	13,889	13,902	13,999	13,623
Natural sciences[b]	5,598	5,620	5,771	5,981	5,903	5,663	5,800	6,111	6,019	5,950	6,123	5,978	5,952	5,866
Math and computer sciences	671	658	610	569	527	548	688	774	803	886	880	988	834	827
Social sciences[c]	5,177	4,879	5,099	4,993	4,551	4,383	4,287	4,601	4,624	4,876	4,866	4,846	4,953	4,668
Engineering	1,429	1,157	1,093	1,128	1,188	1,458	1,726	1,837	1,880	2,025	2,020	2,090	2,260	2,262
Non-science and -engineering	10,779	10,082	9,897	9,580	9,137	9,070	9,069	9,862	10,299	10,315	10,705	10,817	10,686	10,166
Asian/Pacific Islander, all degrees	910	1,102	1,073	1,042	1,070	1,168	1,268	1,531	1,764	2,017	3,546	4,309	3,697	3,140
Science and engineering	745	884	827	780	809	925	986	1,180	1,345	1,610	2,989	3,671	3,091	2,527
Natural sciences[b]	342	377	344	359	346	369	403	474	560	686	1,481	1,858	1,550	1,255
Math and computer sciences	42	55	56	54	50	67	76	123	138	156	259	345	251	205
Social sciences[c]	112	146	142	120	132	162	146	178	196	241	382	435	395	363
Engineering	249	306	285	247	281	327	361	405	451	527	867	1,033	895	704
Non-science and -engineering	165	218	246	262	261	243	282	351	419	407	557	638	606	613
Black, all degrees	1,191	1,112	1,110	1,005	1,043	910	963	1,166	1,116	1,280	1,279	1,477	1,457	1,476
Science and engineering	342	347	346	338	374	319	367	464	408	469	500	560	576	607
Natural sciences[b]	85	84	89	84	100	95	106	116	107	136	153	171	187	191
Math and computer sciences	9	12	11	6	10	13	9	19	9	14	21	16	20	11
Social sciences[c]	233	231	227	219	230	186	219	274	243	269	272	302	295	308
Engineering	15	20	19	29	34	25	33	55	49	50	54	71	74	97
Non-science and -engineering	849	765	764	667	669	591	596	702	708	811	779	917	881	869

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 4-39.
Earned doctoral degrees, by field, race/ethnicity, and citizenship: 1977–97 (selected years)

Field and race/ethnicity	1977	1979	1981	1983	1985	1987	1989	1991	1992	1993	1994	1995	1996	1997
Hispanic, all degrees	489	547	529	608	634	708	694	867	909	973	1,030	1,061	1,105	1,181
Science and engineering	203	234	240	284	296	357	382	492	513	542	548	571	623	645
Natural sciences[b]	76	84	93	86	107	138	157	191	208	226	254	234	229	251
Math and computer sciences	12	12	5	7	18	15	15	21	20	23	20	21	26	34
Social sciences[c]	91	114	126	162	149	170	163	220	214	227	208	239	270	265
Engineering	24	24	16	29	22	34	47	60	71	66	66	77	98	95
Non-science and -engineering	286	313	289	324	338	351	312	375	396	431	482	490	482	536
American Indian/Alaskan Native, all degrees	66	81	85	82	96	115	94	132	149	120	143	149	187	151
Science and engineering	31	29	28	30	41	53	53	56	69	43	64	69	96	71
Natural sciences[b]	14	6	8	13	21	20	25	27	26	17	24	26	34	24
Math and computer sciences	1	1	1	1	0	3	2	1	4	2	3	2	5	2
Social sciences[c]	15	19	15	15	19	23	19	22	28	22	31	31	43	33
Engineering	1	3	4	1	1	7	7	6	11	2	6	10	14	12
Non-science and -engineering	35	52	57	52	55	62	41	76	80	77	79	80	91	80
Temporary resident														
Total, all degrees	3,448	3,587	3,940	4,498	5,227	5,612	6,648	9,311	9,953	9,932	9,406	8,810	9,610	8,463
Science and engineering	2,675	2,689	2,983	3,412	4,047	4,468	5,391	7,641	8,092	8,113	7,521	6,994	7,802	6,948
Natural sciences[b]	1,079	1,046	1,140	1,273	1,517	1,704	1,975	2,936	3,213	3,191	2,815	2,501	3,026	2,786
Math and computer sciences	170	181	226	281	327	445	524	846	876	865	791	747	817	730
Social sciences[c]	651	645	675	688	784	787	952	1,226	1,260	1,273	1,262	1,222	1,243	1,036
Engineering	775	817	942	1,170	1,419	1,532	1,940	2,633	2,743	2,784	2,653	2,524	2,716	2,396
Non-science and -engineering	773	898	957	1,086	1,180	1,144	1,257	1,670	1,861	1,819	1,885	1,816	1,808	1,515
Citizenship unknown														
Total, all degrees	781	868	1,075	1,149	1,376	2,196	2,652	793	947	1,161	734	874	1,299	3,641
Science and engineering	452	472	620	705	823	1,371	1,749	468	641	757	497	545	800	1,894
Natural sciences[b]	170	167	215	215	285	501	582	165	185	247	161	170	299	661
Math and computer sciences	25	20	21	42	40	74	123	24	55	62	30	53	67	149
Social sciences[c]	183	225	269	319	345	529	670	172	226	231	190	180	228	709
Engineering	74	60	115	129	153	267	374	107	175	217	116	142	206	375
Non-science and -engineering	329	396	455	444	553	825	903	325	306	404	237	329	499	1,747

[a]Data include all doctorates awarded to U.S. citizens and permanent residents, temporary residents, and persons whose citizenship is unknown.

[b]Natural sciences here include physical, earth, atmospheric, oceanographic, biological, and agricultural sciences.

[c]Social sciences include psychology, sociology, and other social sciences.

SOURCES: National Science Foundation, Division of Science Resources Studies (NSF/SRS), *Science and Engineering Degrees, by Race/Ethnicity of Recipients: 1989–96,* Early Release Tables; previous editions; and Selected Tables from *Science and Engineering Doctorate Awards: 1997*, Advanced Release.

See figures 4-27, 4-32, and 4-34 in Volume 1.

Appendix table 4-40.
Earned doctoral degrees in science and engineering in selected countries and regions, by sex and field: 1997 or most recent year

Region/country	All doctoral degrees	All S&E doctoral degrees	Degree fields: Natural sciences[a]	Math and computer science	Agriculture	Social sciences[b]	Engineering	Non S&E
Number								
Male								
Asia total	13,090	7,151	1,365	327	810	769	3,880	5,939
Japan[c]	8,206	4,489	888	144	617	514	2,326	3,717
South Korea	4,008	1,966	349	129	153	206	1,129	2,042
Taiwan	876	696	128	54	40	49	425	180
Europe total	30,388	19,991	9,642	1,777	634	2,837	5,101	10,397
France	6,743	5,825	2,573	670	101	1,038	1,443	918
Germany	16,404	9,132	4,758	651	336	1,286	2,101	7,272
United Kingdom	7,241	5,034	2,311	456	197	513	1,557	2,207
The Americas total	28,359	19,847	7,207	1,781	883	4,047	5,929	8,512
Canada	2,519	1,802	596	175	137	314	580	717
Mexico	457	249	76	9	35	85	44	208
United States	25,383	17,796	6,535	1,597	711	3,648	5,305	7,587
Female								
Asia total	2,822	835	205	79	165	206	180	1,987
Japan[c]	1,654	520	101	12	115	157	135	1,134
South Korea	991	231	81	58	25	32	35	760
Taiwan	177	84	23	9	25	17	10	93
Europe total	15,852	7,892	4,795	442	382	1,382	891	7,961
France	4,330	3,137	1,821	199	106	591	420	1,194
Germany	7,770	2,658	1,660	134	185	488	191	5,112
United Kingdom	3,752	2,097	1,314	109	91	303	280	1,655
The Americas total	18,994	9,579	3,709	435	348	4,272	815	9,415
Canada	1,395	656	172	29	80	317	58	739
Mexico	277	127	37	2	13	65	10	150
United States	17,322	8,796	3,500	404	255	3,890	747	8,526
Percent								
Male								
Asia total	82.3	89.5	86.9	80.5	83.1	78.9	95.6	74.9
Japan[c]	83.2	89.6	89.8	92.3	84.3	76.6	94.5	76.6
South Korea	80.2	89.5	81.2	69.0	86.0	86.6	97.0	72.9
Taiwan	83.2	89.2	84.8	85.7	61.5	74.2	97.7	65.9
Europe total	65.7	72.1	67.3	80.3	61.9	68.1	85.6	56.6
France	60.9	65.0	58.6	77.1	48.8	63.7	77.5	43.5
Germany	67.9	77.5	74.1	82.9	64.5	72.5	91.7	58.7
United Kingd/om	65.9	72.3	65.6	81.6	68.4	67.3	86.6	57.2
The Americas total	59.9	66.9	64.5	80.4	71.7	48.6	87.9	48.2
Canada	64.4	73.3	77.6	85.8	63.1	49.8	90.9	49.2
Mexico	62.3	66.2	67.3	81.8	72.9	56.7	81.5	58.1
United States	59.4	66.3	65.1	79.8	73.6	48.4	87.7	47.8

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 4-40.
Earned doctoral degrees in science and engineering in selected countries and regions, by sex and field: 1997 or most recent year

Region/country	All doctoral degrees	All S&E doctoral degrees	Degree fields: Natural sciences[a]	Math and computer science	Agriculture	Social sciences[b]	Engineering	Non S&E
			Female					
Asia total	17.7	10.5	13.1	19.5	16.9	21.1	4.4	25.1
Japan[c]	16.8	10.4	10.2	7.7	15.7	23.4	5.5	23.4
South Korea	19.8	10.5	18.8	31.0	14.0	13.4	3.0	27.1
Taiwan	16.8	10.8	15.2	14.3	38.5	25.8	2.3	34.1
Europe total	34.3	27.9	32.7	19.7	38.1	31.9	14.4	43.4
France	39.1	35.0	41.4	22.9	51.2	36.3	22.5	56.5
Germany	32.1	22.5	25.9	17.1	35.5	27.5	8.3	41.3
United Kingdom	34.1	27.7	34.4	18.4	31.6	32.7	13.4	42.8
The Americas total	40.1	33.1	35.5	19.6	28.3	51.4	12.1	51.8
Canada	35.6	26.7	22.4	14.2	36.9	50.2	9.1	50.8
Mexico	37.7	33.8	32.7	18.2	27.1	43.3	18.5	41.9
United States	40.6	33.7	34.9	20.2	26.4	51.6	12.3	52.2

NOTES: Data are compiled from numerous national and international sources, and degree fields may not be strictly comparable. Data for Canada, France, Germany, Japan, Taiwan, the United Kingdom, and the United States are for 1997. Data for Mexico are for 1996.

[a]Natural sciences here include physical, earth, atmospheric, oceanographic, and biological sciences.

[b]Social sciences include psychology, sociology, and other social sciences.

[c]Japanese social science data also include business administration.

SOURCES: **ASIA: Japan**—Ministry of Education, Science, and Culture (Monbusho), *Monbusho Survey of Education* (Tokyo: annual series); **South Korea**—Ministry of Education, *Statistical Yearbook of Education* (Seoul: 1998); **Taiwan**—Ministry of Education, *Educational Statistics of the Republic of China: 1998* (Taipei: 1998); **EUROPE: France**—Ministère de l'Éducation National, *Rapport sur les Études Doctorales* (Paris: 1998); **Germany**—Statistisches Bundesamt, *Prüfungen an Hochschulen* (Wiesbaden: 1998); **United Kingdom**—Higher Education Statistical Agency, *Students in Higher Education Institutions, 1997/98* (Cheltenham: 1999); **THE AMERICAS: Canada**—Association of Universities and Colleges of Canada, unpublished tabulations (1998); **Mexico**—Asociación Nacional de Universidades e Instituciones de Educación Superior, *Anuario Estadístico 1997 Posgrado* (1997); and **United States**—National Science Foundation, Division of Science Resources Studies (NSF/SRS), *Science and Engineering Doctorate Awards: 1997*, NSF 99-323 (Arlington, VA: 1999).

See text table 4-9 in Volume 1.

Appendix table 4-41.
U.S. doctoral degrees in S&E fields earned by U.S. and foreign citizens: 1986–97

	U.S. citizens	Total foreign students	Asian foreign students[a]	Other foreign students
1986	13,022	6,415	2,139	4,276
1987	12,966	6,928	2,473	4,455
1988	13,369	7,564	2,762	4,802
1989	13,467	8,264	3,099	5,165
1990	14,166	8,701	4,315	4,386
1991	14,624	9,395	5,239	4,156
1992	14,558	10,115	5,725	4,390
1993	14,929	10,512	5,943	4,569
1994	15,162	11,040	6,549	4,491
1995	15,460	11,055	6,687	4,368
1996	15,621	11,609	6,852	4,757
1997	15,744	11,103	5,575	5,528
Cumulative:				
1986–97	173,088	112,701	57,358	55,343

[a]Includes China, Hong Kong, Japan, South Korea, Taiwan, Thailand, other East Asian countries, and India.

SOURCE: National Science Foundation, Division of Science Resources Studies (NSF/SRS), *Science and Engineering Doctorate Awards: 1997*, NSF 99-323 (Arlington, VA: 1999).

See figure 4-33 in Volume 1.

Appendix table 4-42.
Foreign doctoral recipients from U.S. universities who plan to stay in the United States, by field and region/country of origin: 1990–97

Region /country of origin	1990 Total Ph.D. recipients	1990 Plan to stay in U.S. No.	1990 Plan to stay in U.S. %	1990 Firm plans to stay in U.S. No.	1990 Firm plans to stay in U.S. %	1991 Total Ph.D. recipients	1991 Plan to stay in U.S. No.	1991 Plan to stay in U.S. %	1991 Firm plans to stay in U.S. No.	1991 Firm plans to stay in U.S. %	1992 Total Ph.D. recipients	1992 Plan to stay in U.S. No.	1992 Plan to stay in U.S. %	1992 Firm plans to stay in U.S. No.	1992 Firm plans to stay in U.S. %	1993 Total Ph.D. recipients	1993 Plan to stay in U.S. No.	1993 Plan to stay in U.S. %	1993 Firm plans to stay in U.S. No.	1993 Firm plans to stay in U.S. %
All fields																				
East/South Asia	5,139	2,349	45.7	1,703	33.1	6,181	3,555	57.5	2,249	36.4	6,852	4,309	62.9	2,496	36.4	7,063	4,345	61.5	2,340	33.1
China	1,244	730	58.7	506	40.7	1,939	1,529	78.9	924	47.7	2,265	2,000	88.3	1,090	48.1	2,430	2,143	88.2	1,080	44.4
Taiwan	1,149	477	41.5	314	27.3	1,321	635	48.1	367	27.8	1,431	702	49.1	364	25.4	1,456	584	40.1	304	20.9
Japan	186	73	39.2	55	29.6	164	66	40.2	45	27.4	172	74	43.0	46	26.7	182	66	36.3	43	23.6
South Korea	1,259	367	29.2	272	21.6	1,396	454	32.5	285	20.4	1,474	464	31.5	272	18.5	1,409	462	32.8	236	16.7
India	881	586	66.5	470	53.3	924	689	74.6	518	56.1	1,072	880	82.1	609	56.8	1,139	920	80.8	577	50.7
Other	420	116	27.6	86	20.5	437	182	41.6	110	25.2	438	189	43.2	115	26.3	447	170	38.0	100	22.4
West Asia	1,167	465	39.8	293	25.1	1,101	505	45.9	258	23.4	1,237	647	52.3	316	25.5	1,188	593	49.9	265	22.3
Iran	290	156	53.8	89	30.7	256	174	68.0	81	31.6	232	171	73.7	73	31.5	239	171	71.5	67	28.0
Israel	118	47	39.8	38	32.2	120	53	44.2	34	28.3	120	62	51.7	37	30.8	126	65	51.6	37	29.4
Turkey	121	71	58.7	48	39.7	107	47	43.9	29	27.1	143	72	50.3	39	27.3	158	67	42.4	34	21.5
Other	638	191	29.9	118	18.5	618	231	37.4	114	18.4	742	342	46.1	167	22.5	665	290	43.6	127	19.1
Pacifica/Australasia	271	87	32.1	62	22.9	338	134	39.6	88	26.0	318	138	43.4	91	28.6	330	141	42.7	88	26.7
Australia	95	33	34.7	23	24.2	80	34	42.5	25	31.3	80	41	51.3	28	35.0	91	45	49.5	33	36.3
Indonesia	77	13	16.9	10	13.0	106	16	15.1	12	11.3	102	18	17.6	12	11.8	109	22	20.2	13	11.9
New Zealand	24	11	45.8	9	37.5	35	16	45.7	13	37.1	24	10	41.7	8	33.3	32	11	34.4	8	25.0
Other	75	30	40.0	20	26.7	117	68	58.1	38	32.5	112	69	61.6	43	38.4	98	63	64.3	34	34.7
Africa	743	239	32.2	139	18.7	698	275	39.4	126	18.1	717	332	46.3	164	22.9	678	328	48.4	131	19.3
Egypt	192	34	17.7	19	9.9	136	37	27.2	17	12.5	126	44	34.9	19	15.1	107	47	43.9	21	19.6
Nigeria	148	78	52.7	42	28.4	133	78	58.6	32	24.1	128	90	70.3	40	31.3	117	81	69.2	18	15.4
South Africa	49	19	38.8	12	24.5	51	18	35.3	14	27.5	63	27	42.9	18	28.6	58	26	44.8	18	31.0
Other Africa	354	108	30.5	66	18.6	378	142	37.6	63	16.7	400	171	42.8	87	21.8	396	174	43.9	74	18.7
Europe	1,097	540	49.2	411	37.5	1,329	740	55.7	534	40.2	1,335	812	60.8	545	40.8	1,485	861	58.0	564	38.0
Greece	137	67	48.9	50	36.5	185	96	51.9	66	35.7	168	94	56.0	58	34.5	199	116	58.3	78	39.2
United Kingdom	172	119	69.2	90	52.3	207	142	68.6	101	48.8	216	161	74.5	117	54.2	230	169	73.5	120	52.2
Germany	169	85	50.3	65	38.5	181	109	60.2	80	44.2	189	116	61.4	72	38.1	250	148	59.2	91	36.4
Italy	88	35	39.8	24	27.3	115	56	48.7	44	38.3	99	51	51.5	29	29.3	101	43	42.6	31	30.7
France	94	41	43.6	30	31.9	107	55	51.4	40	37.4	116	63	54.3	42	36.2	136	62	45.6	40	29.4
Spain	73	27	37.0	24	32.9	103	52	50.5	39	37.9	91	57	62.6	41	45.1	100	54	54.0	34	34.0
Other	364	166	45.6	128	35.2	431	230	53.4	164	38.1	456	270	59.2	186	40.8	469	269	57.4	170	36.2
North/South America	1,099	434	39.5	329	29.9	1,293	599	46.3	434	33.6	1,302	615	47.2	393	30.2	1,279	589	46.1	382	29.9
Canada	419	191	45.6	153	36.5	511	241	47.2	187	36.6	509	260	51.1	191	37.5	486	239	49.2	176	36.2
Mexico	130	47	36.2	32	24.6	156	71	45.5	51	32.7	149	49	32.9	27	18.1	162	66	40.7	35	21.6
Argentina	78	32	41.0	24	30.8	73	46	63.0	33	45.2	101	47	46.5	28	27.7	68	37	54.4	25	36.8
Brazil	129	22	17.1	18	14.0	149	49	32.9	33	22.1	163	46	28.2	22	13.5	181	44	24.3	26	14.4
Chile	56	23	41.1	15	26.8	70	25	35.7	20	28.6	65	35	53.8	25	38.5	64	30	46.9	17	26.6
Colombia	46	24	52.2	18	39.1	64	33	51.6	19	29.7	54	29	53.7	14	25.9	47	21	44.7	17	36.2
Peru	28	14	50.0	12	42.9	40	27	67.5	16	40.0	42	27	64.3	19	45.2	48	27	56.3	17	35.4
Other	213	81	38.0	57	26.8	230	107	46.5	75	32.6	219	122	55.7	67	30.6	223	125	56.1	69	30.9

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 4-42.
Foreign doctoral recipients from U.S. universities who plan to stay in the United States, by field and region/country of origin: 1990–97

Region /country of origin	1994 Total Ph.D. recipients	1994 Plan to stay in U.S. No.	1994 Plan to stay in U.S. %	1994 Firm plans to stay in U.S. No.	1994 Firm plans to stay in U.S. %	1995 Total Ph.D. recipients	1995 Plan to stay in U.S. No.	1995 Plan to stay in U.S. %	1995 Firm plans to stay in U.S. No.	1995 Firm plans to stay in U.S. %	1996 Total Ph.D. recipients	1996 Plan to stay in U.S. No.	1996 Plan to stay in U.S. %	1996 Firm plans to stay in U.S. No.	1996 Firm plans to stay in U.S. %	1997 Total Ph.D. recipients	1997 Plan to stay in U.S. No.	1997 Plan to stay in U.S. %	1997 Firm plans to stay in U.S. No.	1997 Firm plans to stay in U.S. %
All fields																				
East/South Asia	7,833	5,052	64.5	2,625	33.5	7,922	5,341	67.4	2,791	35.2	8,107	5,544	68.4	3,464	42.7	6,632	4,353	65.6	3,060	46.1
China	2,788	2,560	91.8	1,227	44.0	2,992	2,748	91.8	1,343	44.9	3,221	2,905	90.2	1,794	55.7	2,440	1,976	81.0	1,392	57.0
Taiwan	1,576	654	41.5	322	20.4	1,485	669	45.1	293	19.7	1,404	653	46.5	344	24.5	1,217	639	52.5	400	32.9
Japan	235	95	40.4	57	24.3	233	102	43.8	69	29.6	245	104	42.4	67	27.3	214	96	44.9	70	32.7
South Korea	1,475	522	35.4	267	18.1	1,306	466	35.7	244	18.7	1,260	441	35.0	270	21.4	1,074	387	36.0	273	25.4
India	1,289	1,049	81.4	662	51.4	1,425	1,179	82.7	746	52.4	1,500	1,264	84.3	882	58.8	1,382	1,131	81.8	839	60.7
Other	470	172	36.6	90	19.1	481	177	36.8	96	20.0	477	177	37.1	107	22.4	305	124	40.7	86	28.2
West Asia	1,200	580	48.3	269	22.4	1,171	628	53.6	312	26.6	1,067	569	53.3	319	29.9	803	402	50.1	270	33.6
Iran	193	129	66.8	42	21.8	196	155	79.1	65	33.2	161	130	80.7	64	39.8	114	76	66.7	54	47.4
Israel	143	71	49.7	42	29.4	114	55	48.2	36	31.6	119	66	55.5	48	40.3	73	39	53.4	32	43.8
Turkey	163	55	33.7	32	19.6	188	104	55.3	59	31.4	167	94	56.3	55	32.9	160	82	51.3	53	33.1
Other	701	325	46.4	153	21.8	673	314	46.7	152	22.6	620	279	45.0	152	24.5	456	205	45.0	131	28.7
Pacifica/Australasia	317	157	49.5	92	29.0	303	122	40.3	71	23.4	318	160	50.3	90	28.3	269	123	45.7	81	30.1
Australia	98	55	56.1	40	40.8	90	43	47.8	31	34.4	75	43	57.3	28	37.3	80	36	45.0	28	35.0
Indonesia	98	22	22.4	12	12.2	107	18	16.8	6	5.6	86	20	23.3	8	9.3	80	15	18.8	9	11.3
New Zealand	29	15	51.7	12	41.4	34	19	55.9	13	38.2	44	27	61.4	20	45.5	30	17	56.7	14	46.7
Other	92	65	70.7	28	30.4	72	42	58.3	21	29.2	113	70	61.9	34	30.1	79	55	69.6	30	38.0
Africa	784	384	49.0	136	17.3	622	329	52.9	109	17.5	629	312	49.6	142	22.6	441	218	49.4	138	31.3
Egypt	124	56	45.2	24	19.4	91	36	39.6	10	11.0	107	51	47.7	30	28.0	75	35	46.7	25	33.3
Nigeria	114	95	83.3	30	26.3	99	84	84.8	23	23.2	79	54	68.4	20	25.3	42	27	64.3	14	33.3
South Africa	56	26	46.4	17	30.4	60	23	38.3	12	20.0	70	29	41.4	22	31.4	33	10	30.3	9	27.3
Other Africa	490	207	42.2	65	13.3	372	186	50.0	64	17.2	373	178	47.7	70	18.8	291	146	50.2	90	30.9
Europe	1,565	938	59.9	620	39.6	1,702	1,071	62.9	684	40.2	1,720	1,120	65.1	768	44.7	1,646	1,075	65.3	819	49.8
Greece	188	85	45.2	60	31.9	197	111	56.3	60	30.5	152	85	55.9	57	37.5	117	73	62.4	60	51.3
United Kingdom	219	156	71.2	97	44.3	222	167	75.2	116	52.3	206	154	74.8	107	51.9	164	125	76.2	96	58.5
Germany	257	167	65.0	113	44.0	306	194	63.4	120	39.2	246	150	61.0	102	41.5	246	145	58.9	109	44.3
Italy	108	57	52.8	30	27.8	116	60	51.7	33	28.4	102	48	47.1	31	30.4	111	58	52.3	43	38.7
France	132	77	58.3	45	34.1	117	65	55.6	36	30.8	102	58	56.9	38	37.3	109	57	52.3	39	35.8
Spain	113	59	52.2	43	38.1	102	64	62.7	50	49.0	120	84	70.0	58	48.3	86	46	53.5	37	43.0
Other	548	337	61.5	232	42.3	642	410	63.9	269	41.9	792	541	68.3	375	47.3	943	672	71.3	514	54.5
North/South America	1,368	641	46.9	405	29.6	1,326	620	46.8	384	29.0	1,426	672	47.1	450	31.6	1,167	575	49.3	439	37.6
Canada	490	239	48.8	174	35.5	524	278	53.1	171	32.6	505	269	53.3	190	37.6	415	239	57.6	197	47.5
Mexico	178	67	37.6	37	20.8	162	57	35.2	34	21.0	180	72	40.0	41	22.8	162	68	42.0	45	27.8
Argentina	68	45	66.2	33	48.5	77	38	49.4	26	33.8	91	60	65.9	39	42.9	91	56	61.5	45	49.5
Brazil	202	60	29.7	33	16.3	175	48	27.4	32	18.3	262	66	25.2	46	17.6	160	42	26.3	32	20.0
Chile	54	19	35.2	14	25.9	50	20	40.0	11	22.0	42	14	33.3	10	23.8	35	17	48.6	10	28.6
Colombia	59	35	59.3	14	23.7	56	24	42.9	15	26.8	54	27	50.0	18	33.3	52	26	50.0	23	44.2
Peru	42	30	71.4	16	38.1	39	23	59.0	14	35.9	45	31	68.9	21	46.7	35	25	71.4	17	48.6
Other	275	146	53.1	84	30.5	243	132	54.3	81	33.3	247	133	53.8	85	34.4	217	102	47.0	70	32.3

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 4-42.
Foreign doctoral recipients from U.S. universities who plan to stay in the United States, by field and region/country of origin: 1990–97

Region /country of origin	1990 Total Ph.D. recipients	1990 Plan to stay in U.S. No.	1990 Plan to stay in U.S. %	1990 Firm plans to stay in U.S. No.	1990 Firm plans to stay in U.S. %	1991 Total Ph.D. recipients	1991 Plan to stay in U.S. No.	1991 Plan to stay in U.S. %	1991 Firm plans to stay in U.S. No.	1991 Firm plans to stay in U.S. %	1992 Total Ph.D. recipients	1992 Plan to stay in U.S. No.	1992 Plan to stay in U.S. %	1992 Firm plans to stay in U.S. No.	1992 Firm plans to stay in U.S. %	1993 Total Ph.D. recipients	1993 Plan to stay in U.S. No.	1993 Plan to stay in U.S. %	1993 Firm plans to stay in U.S. No.	1993 Firm plans to stay in U.S. %
Science & engineering																				
East/South Asia	4,305	2,074	48.2	1,497	34.8	5,224	3,155	60.4	1,980	37.9	5,717	3,732	65.3	2,144	37.5	5,935	3,836	64.6	2,057	34.7
China	1,166	692	59.3	482	41.3	1,809	1,434	79.3	865	47.8	2,068	1,825	88.2	997	48.2	2,240	1,984	88.6	1,011	45.1
Taiwan	1,012	451	44.6	299	29.5	1,123	581	51.7	340	30.3	1,240	640	51.6	329	26.5	1,213	530	43.7	282	23.2
Japan	147	60	40.8	48	32.7	125	50	40.0	35	28.0	132	51	38.6	28	21.2	132	43	32.6	27	20.5
South Korea	971	307	31.6	226	23.3	1,107	390	35.2	243	22.0	1,123	373	33.2	220	19.6	1,118	394	35.2	201	18.0
India	709	467	65.9	371	52.3	752	554	73.7	408	54.3	860	703	81.7	485	56.4	932	759	81.4	462	49.6
Other	300	97	32.3	71	23.7	308	146	47.4	89	28.9	294	140	47.6	85	28.9	300	126	42.0	74	24.7
West Asia	938	407	43.4	257	27.4	911	439	48.2	225	24.7	1,019	554	54.4	267	26.2	966	504	52.2	220	22.8
Iran	258	139	53.9	80	31.0	227	154	67.8	72	31.7	199	147	73.9	64	32.2	203	142	70.0	55	27.1
Israel	79	33	41.8	27	34.2	89	41	46.1	26	29.2	87	46	52.9	28	32.2	89	48	53.9	28	31.5
Turkey	106	66	62.3	43	40.6	100	42	42.0	26	26.0	132	66	50.0	36	27.3	136	60	44.1	29	21.3
Other	495	169	34.1	107	21.6	495	202	40.8	101	20.4	601	295	49.1	139	23.1	538	254	47.2	108	20.1
Pacifica/Australasia	173	64	37.0	45	26.0	213	94	44.1	62	29.1	220	100	45.5	68	30.9	227	111	48.9	70	30.8
Australia	45	21	46.7	15	33.3	35	16	45.7	12	34.3	40	22	55.0	16	40.0	47	32	68.1	23	48.9
Indonesia	53	12	22.6	9	17.0	66	13	19.7	11	16.7	78	16	20.5	11	14.1	78	18	23.1	12	15.4
New Zealand	16	7	43.8	6	37.5	23	11	47.8	8	34.8	16	6	37.5	5	31.3	24	8	33.3	6	25.0
Other	59	24	40.7	15	25.4	89	54	60.7	31	34.8	86	56	65.1	36	41.9	78	53	67.9	29	37.2
Africa	536	161	30.0	95	17.7	500	200	40.0	88	17.6	507	229	45.2	110	21.7	470	224	47.7	89	18.9
Egypt	159	28	17.6	14	8.8	112	30	26.8	13	11.6	101	32	31.7	16	15.8	88	38	43.2	16	18.2
Nigeria	82	41	50.0	24	29.3	83	49	59.0	21	25.3	67	53	79.1	23	34.3	54	40	74.1	9	16.7
South Africa	31	14	45.2	9	29.0	30	12	40.0	9	30.0	39	16	41.0	12	30.8	36	14	38.9	8	22.2
Other Africa	264	78	29.5	48	18.2	275	109	39.6	45	16.4	300	128	42.7	59	19.7	292	132	45.2	56	19.2
Europe	802	383	47.8	288	35.9	971	524	54.0	385	39.6	950	550	57.9	377	39.7	1,103	611	55.4	415	37.6
Greece	125	65	52.0	48	38.4	168	90	53.6	62	36.9	149	82	55.0	49	32.9	174	101	58.0	68	39.1
United Kingdom	104	73	70.2	53	51.0	134	91	67.9	66	49.3	139	101	72.7	75	54.0	157	113	72.0	86	54.8
Germany	123	59	48.0	46	37.4	118	67	56.8	51	43.2	124	67	54.0	44	35.5	164	86	52.4	55	33.5
Italy	63	23	36.5	15	23.8	86	37	43.0	30	34.9	73	37	50.7	25	34.2	76	30	39.5	23	30.3
France	65	25	38.5	16	24.6	67	28	41.8	21	31.3	77	31	40.3	20	26.0	93	29	31.2	17	18.3
Spain	40	11	27.5	11	27.5	59	26	44.1	19	32.2	45	27	60.0	20	44.4	63	27	42.9	21	33.3
Other	282	127	45.0	99	35.1	339	185	54.6	136	40.1	343	205	59.8	144	42.0	376	225	59.8	145	38.6
North/South America	786	312	39.7	236	30.0	909	438	48.2	328	36.1	909	435	47.9	277	30.5	900	415	46.1	282	31.3
Canada	252	121	48.0	99	39.3	296	162	54.7	127	42.9	304	171	56.3	132	43.4	285	164	57.5	131	46.0
Mexico	104	34	32.7	21	20.2	128	58	45.3	45	35.2	115	39	33.9	22	19.1	139	54	38.8	30	21.6
Argentina	65	28	43.1	22	33.8	62	39	62.9	29	46.8	86	39	45.3	22	25.6	53	26	49.1	17	32.1
Brazil	98	17	17.3	13	13.3	118	35	29.7	25	21.2	133	37	27.8	18	13.5	151	34	22.5	19	12.6
Chile	50	18	36.0	12	24.0	54	21	38.9	17	31.5	48	25	52.1	18	37.5	52	24	46.2	15	28.8
Colombia	40	21	52.5	16	40.0	49	24	49.0	13	26.5	37	20	54.1	9	24.3	35	11	31.4	10	28.6
Peru	22	10	45.5	8	36.4	35	23	65.7	15	42.9	31	22	71.0	15	48.4	34	21	61.8	12	35.3
Other	155	63	40.6	45	29.0	167	76	45.5	57	34.1	155	82	52.9	41	26.5	151	81	53.6	48	31.8

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 4-42.
Foreign doctoral recipients from U.S. universities who plan to stay in the United States, by field and region/country of origin: 1990–97

Region /country of origin	1994 Total Ph.D. recipients	1994 Plan to stay in U.S. No.	1994 Plan to stay in U.S. %	1994 Firm plans to stay in U.S. No.	1994 Firm plans to stay in U.S. %	1995 Total Ph.D. recipients	1995 Plan to stay in U.S. No.	1995 Plan to stay in U.S. %	1995 Firm plans to stay in U.S. No.	1995 Firm plans to stay in U.S. %	1996 Total Ph.D. recipients	1996 Plan to stay in U.S. No.	1996 Plan to stay in U.S. %	1996 Firm plans to stay in U.S. No.	1996 Firm plans to stay in U.S. %	1997 Total Ph.D. recipients	1997 Plan to stay in U.S. No.	1997 Plan to stay in U.S. %	1997 Firm plans to stay in U.S. No.	1997 Firm plans to stay in U.S. %
Science & engineering																				
East/South Asia	6,532	4,458	68.2	2,328	35.6	6,688	4,756	71.1	2,485	37.2	6,879	4,960	72.1	3,130	45.5	5,618	3,891	69.3	2,754	49.0
China	2,540	2,351	92.6	1,143	45.0	2,763	2,548	92.2	1,247	45.1	2,970	2,697	90.8	1,689	56.9	2,251	1,843	81.9	1,301	57.8
Taiwan	1,297	593	45.7	296	22.8	1,240	615	49.6	275	22.2	1,153	596	51.7	320	27.8	1,000	576	57.6	366	36.6
Japan	182	79	43.4	51	28.0	155	63	40.6	48	31.0	165	71	43.0	44	26.7	146	62	42.5	48	32.9
South Korea	1,143	436	38.1	230	20.1	1,000	388	38.8	210	21.0	977	368	37.7	237	24.3	813	332	40.8	244	30.0
India	1,065	871	81.8	536	50.3	1,206	1,003	83.2	632	52.4	1,276	1,084	85.0	753	59.0	1,173	968	82.5	714	60.9
Other	305	128	42.0	72	23.6	324	139	42.9	73	22.5	338	144	42.6	87	25.7	235	110	46.8	81	34.5
West Asia	1,004	501	49.9	235	23.4	966	549	56.8	272	28.2	883	509	57.6	284	32.2	655	361	55.1	243	37.1
Iran	173	114	65.9	37	21.4	173	138	79.8	58	33.5	149	119	79.9	58	38.9	106	72	67.9	52	49.1
Israel	106	60	56.6	38	35.8	80	38	47.5	23	28.8	80	51	63.8	39	48.8	49	33	67.3	28	57.1
Turkey	144	48	33.3	27	18.8	166	96	57.8	57	34.3	148	88	59.5	52	35.1	141	78	55.3	50	35.5
Other	581	279	48.0	133	22.9	547	277	50.6	134	24.5	506	251	49.6	135	26.7	359	178	49.6	113	31.5
Pacifica/Australasia	230	117	50.9	69	30.0	231	97	42.0	53	22.9	236	121	51.3	66	28.0	191	89	46.6	63	33.0
Australia	56	33	58.9	26	46.4	61	29	47.5	19	31.1	43	26	60.5	17	39.5	47	22	46.8	22	46.8
Indonesia	83	20	24.1	12	14.5	83	18	21.7	6	7.2	69	18	26.1	8	11.6	60	12	20.0	7	11.7
New Zealand	15	9	60.0	7	46.7	26	15	57.7	11	42.3	32	20	62.5	15	46.9	21	13	61.9	11	52.4
Other	76	55	72.4	24	31.6	61	35	57.4	17	27.9	92	57	62.0	26	28.3	63	42	66.7	23	36.5
Africa	581	271	46.6	96	16.5	422	225	53.3	76	18.0	446	217	48.7	101	22.6	323	163	50.5	111	34.4
Egypt	104	47	45.2	20	19.2	78	32	41.0	9	11.5	89	43	48.3	26	29.2	68	32	47.1	22	32.4
Nigeria	60	51	85.0	15	25.0	52	48	92.3	12	23.1	40	27	67.5	9	22.5	21	15	71.4	9	42.9
South Africa	42	21	50.0	13	31.0	28	12	42.9	9	32.1	46	22	47.8	16	34.8	23	8	34.8	7	30.4
Other Africa	375	152	40.5	48	12.8	264	133	50.4	46	17.4	271	125	46.1	50	18.5	211	108	51.2	73	34.6
Europe	1,148	668	58.2	466	40.6	1,253	776	61.9	513	40.9	1,265	807	63.8	568	44.9	1,255	825	65.7	640	51.0
Greece	166	75	45.2	54	32.5	174	98	56.3	57	32.8	133	76	57.1	51	38.3	97	64	66.0	54	55.7
United Kingdom	131	90	68.7	59	45.0	134	102	76.1	77	57.5	119	86	72.3	61	51.3	91	65	71.4	50	54.9
Germany	196	124	63.3	93	47.4	208	124	59.6	83	39.9	171	103	60.2	75	43.9	177	101	57.1	77	43.5
Italy	83	42	50.6	21	25.3	81	37	45.7	22	27.2	77	34	44.2	22	28.6	84	42	50.0	32	38.1
France	96	51	53.1	30	31.3	83	38	45.8	23	27.7	69	31	44.9	22	31.9	74	37	50.0	22	29.7
Spain	58	23	39.7	20	34.5	51	29	56.9	24	47.1	66	41	62.1	28	42.4	51	23	45.1	17	33.3
Other	418	263	62.9	189	45.2	522	348	66.7	227	43.5	630	436	69.2	309	49.0	754	545	72.3	430	57.0
North/South America	955	462	48.4	302	31.6	862	417	48.4	276	32.0	989	484	48.9	322	32.6	828	407	49.2	312	37.7
Canada	275	160	58.2	123	44.7	273	173	63.4	119	43.6	277	182	65.7	130	46.9	246	159	64.6	135	54.9
Mexico	142	49	34.5	29	20.4	128	45	35.2	26	20.3	158	59	37.3	32	20.3	130	50	38.5	35	26.9
Argentina	56	37	66.1	28	50.0	49	22	44.9	17	34.7	67	43	64.2	27	40.3	67	41	61.2	32	47.8
Brazil	157	45	28.7	26	16.6	137	39	28.5	28	20.4	207	53	25.6	37	17.9	135	34	25.2	26	19.3
Chile	42	14	33.3	11	26.2	38	14	36.8	7	18.4	36	12	33.3	8	22.2	28	12	42.9	7	25.0
Colombia	48	28	58.3	9	18.8	45	15	33.3	10	22.2	42	20	47.6	13	31.0	39	20	51.3	18	46.2
Peru	32	20	62.5	12	37.5	26	16	61.5	10	38.5	30	21	70.0	14	46.7	27	19	70.4	12	44.4
Other	203	109	53.7	64	31.5	166	93	56.0	59	35.5	172	94	54.7	61	35.5	156	72	46.2	47	30.1

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 4-42.
Foreign doctoral recipients from U.S. universities who plan to stay in the United States, by field and region/country of origin: 1990–97

Region /country of origin	1990 Total Ph.D. recipients	1990 Plan to stay in U.S. No.	1990 Plan to stay in U.S. %	1990 Firm plans to stay in U.S. No.	1990 Firm plans to stay in U.S. %	1991 Total Ph.D. recipients	1991 Plan to stay in U.S. No.	1991 Plan to stay in U.S. %	1991 Firm plans to stay in U.S. No.	1991 Firm plans to stay in U.S. %	1992 Total Ph.D. recipients	1992 Plan to stay in U.S. No.	1992 Plan to stay in U.S. %	1992 Firm plans to stay in U.S. No.	1992 Firm plans to stay in U.S. %	1993 Total Ph.D. recipients	1993 Plan to stay in U.S. No.	1993 Plan to stay in U.S. %	1993 Firm plans to stay in U.S. No.	1993 Firm plans to stay in U.S. %
Natural sciences																				
East/South Asia	2,173	1,162	53.5	885	40.7	2,589	1,765	68.2	1,182	45.7	2,923	2,174	74.4	1,354	46.3	3,006	2,215	73.7	1,297	43.1
China	770	475	61.7	358	46.5	1,238	1,003	81.0	656	53.0	1,438	1,282	89.2	767	53.3	1,516	1,354	89.3	753	49.7
Taiwan	458	221	48.3	153	33.4	421	247	58.7	152	36.1	504	291	57.7	175	34.7	514	270	52.5	164	31.9
Japan	58	31	53.4	25	43.1	46	25	54.3	17	37.0	50	26	52.0	17	34.0	48	17	35.4	15	31.3
South Korea	407	168	41.3	134	32.9	422	187	44.3	132	31.3	418	192	45.9	127	30.4	402	195	48.5	125	31.1
India	319	220	69.0	180	56.4	304	225	74.0	174	57.2	365	307	84.1	220	60.3	382	315	82.5	200	52.4
Other	161	47	29.2	35	21.7	158	78	49.4	51	32.3	148	76	51.4	48	32.4	144	64	44.4	40	27.8
West Asia	350	141	40.3	93	26.6	328	171	52.1	100	30.5	378	213	56.3	115	30.4	369	206	55.8	100	27.1
Iran	84	48	57.1	31	36.9	83	58	69.9	33	39.8	59	45	76.3	21	35.6	82	59	72.0	24	29.3
Israel	35	15	42.9	13	37.1	33	22	66.7	16	48.5	32	18	56.3	15	46.9	43	26	60.5	16	37.2
Turkey	28	16	57.1	9	32.1	24	9	37.5	6	25.0	35	22	62.9	13	37.1	33	15	45.5	8	24.2
Other	203	62	30.5	40	19.7	188	82	43.6	45	23.9	252	128	50.8	66	26.2	211	106	50.2	52	24.6
Pacifica/Australasia	94	34	36.2	23	24.5	100	54	54.0	39	39.0	120	63	52.5	42	35.0	122	60	49.2	38	31.1
Australia	19	8	42.1	5	26.3	15	9	60.0	7	46.7	16	8	50.0	5	31.3	24	15	62.5	10	41.7
Indonesia	23	5	21.7	3	13.0	23	4	17.4	4	17.4	35	6	17.1	4	11.4	34	4	11.8	3	8.8
New Zealand	10	5	50.0	5	50.0	11	4	36.4	3	27.3	7	3	42.9	3	42.9	17	6	35.3	5	29.4
Other	42	16	38.1	10	23.8	51	37	72.5	25	49.0	62	46	74.2	30	48.4	47	35	74.5	20	42.6
Africa	218	62	28.4	33	15.1	218	85	39.0	36	16.5	247	107	43.3	52	21.1	224	106	47.3	47	21.0
Egypt	62	11	17.7	5	8.1	42	12	28.6	5	11.9	44	16	36.4	8	18.2	30	16	53.3	7	23.3
Nigeria	26	13	50.0	6	23.1	31	20	64.5	9	29.0	22	20	90.9	11	50.0	18	13	72.2	3	16.7
South Africa	6	1	16.7	0	0.0	10	5	50.0	5	50.0	19	8	42.1	7	36.8	18	8	44.4	5	27.8
Other Africa	124	37	29.8	22	17.7	135	48	35.6	17	12.6	162	63	38.9	26	16.0	158	69	43.7	32	20.3
Europe	422	203	48.1	159	37.7	542	301	55.5	227	41.9	510	294	57.6	207	40.6	612	343	56.0	241	39.4
Greece	50	27	54.0	22	44.0	69	42	60.9	32	46.4	66	36	54.5	24	36.4	77	46	59.7	30	39.0
United Kingdom	54	40	74.1	31	57.4	75	54	72.0	45	60.0	70	48	68.6	37	52.9	95	69	72.6	55	57.9
Germany	76	35	46.1	25	32.9	82	45	54.9	37	45.1	78	42	53.8	30	38.5	100	49	49.0	32	32.0
Italy	34	11	32.4	9	26.5	45	23	51.1	17	37.8	43	19	44.2	13	30.2	44	16	36.4	13	29.5
France	27	9	33.3	5	18.5	37	16	43.2	9	24.3	40	16	40.0	11	27.5	49	15	30.6	11	22.4
Spain	18	4	22.2	4	22.2	37	15	40.5	9	24.3	16	12	75.0	8	50.0	30	20	66.7	15	50.0
Other	163	77	47.2	63	38.7	197	106	53.8	78	39.6	197	121	61.4	84	42.6	217	128	59.0	85	39.2
North/South America	419	157	37.5	118	28.2	514	245	47.7	189	36.8	503	232	46.1	153	30.4	470	225	47.9	165	35.1
Canada	130	61	46.9	49	37.7	154	93	60.4	76	49.4	163	91	55.8	72	44.2	140	87	62.1	73	52.1
Mexico	65	19	29.2	12	18.5	80	35	43.8	26	32.5	69	25	36.2	16	23.2	84	31	36.9	19	22.6
Argentina	42	17	40.5	13	31.0	34	21	61.8	18	52.9	45	18	40.0	12	26.7	31	16	51.6	13	41.9
Brazil	44	10	22.7	8	18.2	66	14	21.2	11	16.7	79	19	24.1	9	11.4	75	16	21.3	10	13.3
Chile	22	9	40.9	6	27.3	33	16	48.5	12	36.4	24	18	75.0	13	54.2	34	17	50.0	12	35.3
Colombia	27	12	44.4	10	37.0	26	10	38.5	6	23.1	22	10	45.5	3	13.6	21	6	28.6	5	23.8
Peru	11	4	36.4	4	36.4	18	9	50.0	6	33.3	12	8	66.7	6	50.0	12	8	66.7	7	58.3
Other	78	25	32.1	16	20.5	103	47	45.6	34	33.0	89	43	48.3	22	24.7	73	44	60.3	26	35.6

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 4-42.
Foreign doctoral recipients from U.S. universities who plan to stay in the United States, by field and region/country of origin: 1990–97

Region /country of origin	1994 Total Ph.D. recipients	1994 Plan to stay in U.S. No.	1994 Plan to stay in U.S. %	1994 Firm plans to stay in U.S. No.	1994 Firm plans to stay in U.S. %	1995 Total Ph.D. recipients	1995 Plan to stay in U.S. No.	1995 Plan to stay in U.S. %	1995 Firm plans to stay in U.S. No.	1995 Firm plans to stay in U.S. %	1996 Total Ph.D. recipients	1996 Plan to stay in U.S. No.	1996 Plan to stay in U.S. %	1996 Firm plans to stay in U.S. No.	1996 Firm plans to stay in U.S. %	1997 Total Ph.D. recipients	1997 Plan to stay in U.S. No.	1997 Plan to stay in U.S. %	1997 Firm plans to stay in U.S. No.	1997 Firm plans to stay in U.S. %
Natural sciences																				
East/South Asia	3,342	2,560	76.6	1,466	43.9	3,427	2,702	78.8	1,517	44.3	3,585	2,832	79.0	1,847	51.5	2,921	2,224	76.1	1,620	55.5
China	1,671	1,558	93.2	836	50.0	1,807	1,672	92.5	883	48.9	1,969	1,813	92.1	1,164	59.1	1,486	1,237	83.2	895	60.2
Taiwan	509	266	52.3	154	30.3	502	290	57.8	140	27.9	462	259	56.1	155	33.5	463	307	66.3	219	47.3
Japan	59	34	57.6	23	39.0	51	25	49.0	19	37.3	54	28	51.9	21	38.9	37	26	70.3	20	54.1
South Korea	473	242	51.2	152	32.1	414	220	53.1	147	35.5	430	208	48.4	146	34.0	328	181	55.2	145	44.2
India	474	389	82.1	251	53.0	499	417	83.6	281	56.3	520	454	87.3	316	60.8	484	403	83.3	287	59.3
Other	156	71	45.5	50	32.1	154	78	50.6	47	30.5	150	70	46.7	45	30.0	123	70	56.9	54	43.9
West Asia	395	205	51.9	112	28.4	411	227	55.2	124	30.2	365	216	59.2	126	34.5	237	140	59.1	100	42.2
Iran	60	39	65.0	16	26.7	73	58	79.5	24	32.9	68	55	80.9	29	42.6	41	30	73.2	21	51.2
Israel	52	36	69.2	25	48.1	36	19	52.8	15	41.7	41	32	78.0	25	61.0	20	17	85.0	16	80.0
Turkey	63	23	36.5	15	23.8	64	40	62.5	24	37.5	48	26	54.2	16	33.3	33	14	42.4	8	24.2
Other	220	107	48.6	56	25.5	238	110	46.2	61	25.6	208	103	49.5	56	26.9	143	79	55.2	55	38.5
Pacifica/Australasia	123	75	61.0	45	36.6	107	52	48.6	31	29.0	138	82	59.4	45	32.6	95	49	51.6	36	37.9
Australia	31	20	64.5	16	51.6	33	17	51.5	11	33.3	27	15	55.6	10	37.0	24	13	54.2	13	54.2
Indonesia	33	9	27.3	6	18.2	25	6	24.0	3	12.0	39	16	41.0	7	17.9	20	4	20.0	2	10.0
New Zealand	9	6	66.7	5	55.6	13	6	46.2	5	38.5	21	16	76.2	13	61.9	10	6	60.0	5	50.0
Other	50	40	80.0	18	36.0	36	23	63.9	12	33.3	51	35	68.6	15	29.4	41	26	63.4	16	39.0
Africa	267	119	44.6	51	19.1	187	106	56.7	36	19.3	185	88	47.6	39	21.1	153	76	49.7	46	30.1
Egypt	32	13	40.6	5	15.6	21	12	57.1	2	9.5	19	8	42.1	4	21.1	20	12	60.0	8	40.0
Nigeria	27	26	96.3	11	40.7	16	16	100.0	5	31.3	11	6	54.5	3	27.3	8	5	62.5	2	25.0
South Africa	20	13	65.0	9	45.0	11	7	63.6	5	45.5	21	8	38.1	7	33.3	8	1	12.5	1	12.5
Other Africa	188	67	35.6	26	13.8	139	71	51.1	24	17.3	134	66	49.3	25	18.7	117	58	49.6	35	29.9
Europe	661	392	59.3	288	43.6	707	425	60.1	299	42.3	751	502	66.8	358	47.7	796	533	67.0	414	52.0
Greece	84	36	42.9	26	31.0	87	43	49.4	30	34.5	64	34	53.1	20	31.3	49	32	65.3	29	59.2
United Kingdom	74	51	68.9	37	50.0	68	51	75.0	39	57.4	59	44	74.6	32	54.2	52	38	73.1	29	55.8
Germany	115	69	60.0	53	46.1	129	72	55.8	51	39.5	114	70	61.4	52	45.6	116	64	55.2	48	41.4
Italy	41	18	43.9	9	22.0	49	20	40.8	13	26.5	39	21	53.8	15	38.5	47	22	46.8	18	38.3
France	53	28	52.8	19	35.8	47	21	44.7	16	34.0	32	12	37.5	8	25.0	45	27	60.0	15	33.3
Spain	35	15	42.9	13	37.1	33	19	57.6	16	48.5	37	25	67.6	19	51.4	26	12	46.2	7	26.9
Other	259	175	67.6	131	50.6	294	199	67.7	134	45.6	406	296	72.9	212	52.2	501	368	73.5	292	58.3
North/South America	515	265	51.5	184	35.7	483	246	50.9	166	34.4	521	258	49.5	176	33.8	448	221	49.3	175	39.1
Canada	153	99	64.7	75	49.0	130	91	70.0	65	50.0	145	96	66.2	73	50.3	128	92	71.9	81	63.3
Mexico	84	30	35.7	21	25.0	86	31	36.0	17	19.8	94	34	36.2	17	18.1	71	27	38.0	19	26.8
Argentina	35	21	60.0	16	45.7	29	11	37.9	7	24.1	45	31	68.9	21	46.7	34	19	55.9	17	50.0
Brazil	82	26	31.7	15	18.3	77	27	35.1	22	28.6	108	23	21.3	16	14.8	77	17	22.1	14	18.2
Chile	23	9	39.1	7	30.4	23	12	52.2	6	26.1	19	9	47.4	7	36.8	18	7	38.9	4	22.2
Colombia	28	15	53.6	6	21.4	21	10	47.6	6	28.6	20	11	55.0	8	40.0	29	15	51.7	13	44.8
Peru	10	7	70.0	5	50.0	12	8	66.7	6	50.0	11	6	54.5	4	36.4	7	5	71.4	4	57.1
Other	100	58	58.0	39	39.0	105	56	53.3	37	35.2	79	48	60.8	30	38.0	84	39	46.4	23	27.4

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 4-42.
Foreign doctoral recipients from U.S. universities who plan to stay in the United States, by field and region/country of origin: 1990–97

Region /country of origin	1990 Total Ph.D. recipients	1990 Plan to stay in U.S. No.	1990 Plan to stay in U.S. %	1990 Firm plans to stay in U.S. No.	1990 Firm plans to stay in U.S. %	1991 Total Ph.D. recipients	1991 Plan to stay in U.S. No.	1991 Plan to stay in U.S. %	1991 Firm plans to stay in U.S. No.	1991 Firm plans to stay in U.S. %	1992 Total Ph.D. recipients	1992 Plan to stay in U.S. No.	1992 Plan to stay in U.S. %	1992 Firm plans to stay in U.S. No.	1992 Firm plans to stay in U.S. %	1993 Total Ph.D. recipients	1993 Plan to stay in U.S. No.	1993 Plan to stay in U.S. %	1993 Firm plans to stay in U.S. No.	1993 Firm plans to stay in U.S. %
Social sciences																				
East/South Asia	552	166	30.1	117	21.2	649	254	39.1	156	24.0	688	269	39.1	146	21.2	748	318	42.5	162	21.7
China	63	36	57.1	24	38.1	88	63	71.6	31	35.2	114	95	83.3	45	39.5	179	141	78.8	61	34.1
Taiwan	78	22	28.2	12	15.4	105	40	38.1	25	23.8	99	29	29.3	11	11.1	107	25	23.4	13	12.1
Japan	72	24	33.3	19	26.4	50	18	36.0	12	24.0	57	19	33.3	8	14.0	61	20	32.8	11	18.0
South Korea	204	36	17.6	26	12.7	251	55	21.9	33	13.1	268	50	18.7	28	10.4	232	38	16.4	13	5.6
India	76	36	47.4	29	38.2	91	57	62.6	43	47.3	90	61	67.8	43	47.8	102	76	74.5	53	52.0
Other	59	12	20.3	7	11.9	64	21	32.8	12	18.8	60	15	25.0	11	18.3	67	18	26.9	11	16.4
West Asia	162	57	35.2	42	25.9	172	58	33.7	26	15.1	183	79	43.2	35	19.1	156	71	45.5	32	20.5
Iran	35	16	45.7	9	25.7	21	16	76.2	5	23.8	30	19	63.3	6	20.0	26	18	69.2	5	19.2
Israel	22	8	36.4	7	31.8	29	12	41.4	8	27.6	29	15	51.7	8	27.6	23	11	47.8	9	39.1
Turkey	19	12	63.2	10	52.6	12	5	41.7	3	25.0	16	6	37.5	3	18.8	29	16	55.2	7	24.1
Other	86	21	24.4	16	18.6	110	25	22.7	10	9.1	108	39	36.1	18	16.7	78	26	33.3	11	14.1
Pacifica/Australasia	54	15	27.8	11	20.4	68	19	27.9	11	16.2	52	15	28.8	10	19.2	62	30	48.4	19	30.6
Australia	23	11	47.8	8	34.8	13	4	30.8	2	15.4	13	5	38.5	5	38.5	17	13	76.5	10	58.8
Indonesia	16	0	0.0	0	0.0	24	1	4.2	1	4.2	19	3	15.8	1	5.3	15	2	13.3	1	6.7
New Zealand	4	0	0.0	0	0.0	10	6	60.0	4	40.0	8	2	25.0	1	12.5	7	2	28.6	1	14.3
Other	11	4	36.4	3	27.3	21	8	38.1	4	19.0	12	5	41.7	3	25.0	23	13	56.5	7	30.4
Africa	131	44	33.6	26	19.8	127	56	44.1	29	22.8	122	57	46.7	21	17.2	125	58	46.4	19	15.2
Egypt	15	1	6.7	0	0.0	13	4	30.8	2	15.4	11	1	9.1	0	.	10	3	30.0	1	10.0
Nigeria	33	16	48.5	10	30.3	32	15	46.9	6	18.8	34	23	67.6	7	20.6	24	19	79.2	4	16.7
South Africa	13	6	46.2	3	23.1	11	5	45.5	3	27.3	14	6	42.9	3	21.4	12	3	25.0	1	8.3
Other Africa	70	21	30.0	13	18.6	71	32	45.1	18	25.4	63	27	42.9	11	17.5	79	33	41.8	13	16.5
Europe	175	88	50.3	65	37.1	229	126	55.0	97	42.4	238	149	62.6	102	42.9	247	124	50.2	85	34.4
Greece	18	10	55.6	6	33.3	29	12	41.4	8	27.6	24	15	62.5	8	33.3	29	18	62.1	11	37.9
United Kingdom	35	23	65.7	15	42.9	44	27	61.4	15	34.1	52	39	75.0	27	51.9	44	28	63.6	19	43.2
Germany	32	19	59.4	17	53.1	28	18	64.3	14	50.0	28	15	53.6	7	25.0	41	23	56.1	16	39.0
Italy	15	6	40.0	3	20.0	29	12	41.4	11	37.9	20	14	70.0	10	50.0	22	7	31.8	5	22.7
France	11	4	36.4	3	27.3	11	6	54.5	6	54.5	12	5	41.7	5	41.7	12	3	25.0	2	16.7
Spain	14	6	42.9	6	42.9	18	10	55.6	9	50.0	23	12	52.2	10	43.5	25	5	20.0	4	16.0
Other	50	20	40.0	15	30.0	70	41	58.6	34	48.6	79	49	62.0	35	44.3	74	40	54.1	28	37.8
North/South America	199	80	40.2	62	31.2	225	97	43.1	72	32.0	246	119	48.4	69	28.0	251	107	42.6	72	28.7
Canada	81	38	46.9	34	42.0	88	37	42.0	27	30.7	95	53	55.8	40	42.1	103	51	49.5	40	38.8
Mexico	14	5	35.7	2	14.3	26	13	50.0	10	38.5	30	9	30.0	2	6.7	28	9	32.1	5	17.9
Argentina	11	5	45.5	5	45.5	16	9	56.3	5	31.3	27	12	44.4	5	18.5	12	4	33.3	1	8.3
Brazil	23	2	8.7	1	4.3	18	6	33.3	5	27.8	23	9	39.1	5	21.7	30	10	33.3	6	20.0
Chile	17	5	29.4	3	17.6	13	3	23.1	3	23.1	14	5	35.7	3	21.4	13	3	23.1	2	15.4
Colombia	5	4	80.0	2	40.0	12	6	50.0	4	33.3	6	4	66.7	2	33.3	6	2	33.3	2	33.3
Peru	5	3	60.0	1	20.0	10	7	70.0	5	50.0	14	9	64.3	6	42.9	12	6	50.0	2	16.7
Other	43	18	41.9	14	32.6	42	16	38.1	13	31.0	37	18	48.6	6	16.2	47	22	46.8	14	29.8

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 4-42.
Foreign doctoral recipients from U.S. universities who plan to stay in the United States, by field and region/country of origin: 1990–97

Region /country of origin	1994 Total Ph.D. recipients	1994 Plan to stay in U.S. No.	1994 Plan to stay in U.S. %	1994 Firm plans to stay in U.S. No.	1994 Firm plans to stay in U.S. %	1995 Total Ph.D. recipients	1995 Plan to stay in U.S. No.	1995 Plan to stay in U.S. %	1995 Firm plans to stay in U.S. No.	1995 Firm plans to stay in U.S. %	1996 Total Ph.D. recipients	1996 Plan to stay in U.S. No.	1996 Plan to stay in U.S. %	1996 Firm plans to stay in U.S. No.	1996 Firm plans to stay in U.S. %	1997 Total Ph.D. recipients	1997 Plan to stay in U.S. No.	1997 Plan to stay in U.S. %	1997 Firm plans to stay in U.S. No.	1997 Firm plans to stay in U.S. %
Social sciences																				
East/South Asia	823	397	48.2	198	24.1	820	376	45.9	190	23.2	810	369	45.6	211	26.0	672	305	45.4	196	29.2
China	212	189	89.2	81	38.2	177	150	84.7	69	39.0	192	155	80.7	89	46.4	137	102	74.5	70	51.1
Taiwan	118	21	17.8	9	7.6	122	30	24.6	9	7.4	116	27	23.3	6	5.2	117	37	31.6	16	13.7
Japan	77	33	42.9	22	28.6	74	32	43.2	25	33.8	79	35	44.3	19	24.1	72	28	38.9	22	30.6
South Korea	241	51	21.2	26	10.8	242	48	19.8	17	7.0	221	41	18.6	22	10.0	193	43	22.3	28	14.5
India	111	80	72.1	50	45.0	135	97	71.9	59	43.7	131	91	69.5	61	46.6	105	79	75.2	53	50.5
Other	64	23	35.9	10	15.6	70	19	27.1	11	15.7	71	20	28.2	14	19.7	48	16	33.3	7	14.6
West Asia	181	71	39.2	30	16.6	166	78	47.0	40	24.1	149	57	38.3	36	24.2	113	40	35.4	23	20.4
Iran	21	14	66.7	3	14.3	15	13	86.7	5	33.3	13	11	84.6	4	30.8	7	5	71.4	4	57.1
Israel	38	17	44.7	9	23.7	29	15	51.7	7	24.1	22	10	45.5	8	36.4	20	12	60.0	9	45.0
Turkey	17	5	29.4	2	11.8	29	11	37.9	9	31.0	27	11	40.7	9	33.3	22	5	22.7	2	9.1
Other	105	35	33.3	16	15.2	93	39	41.9	19	20.4	87	25	28.7	15	17.2	64	18	28.1	8	12.5
Pacifica/Australasia	57	19	33.3	12	21.1	80	26	32.5	12	15.0	59	19	32.2	10	16.9	51	21	41.2	13	25.5
Australia	14	7	50.0	7	50.0	21	7	33.3	4	19.0	10	6	60.0	4	40.0	15	7	46.7	7	46.7
Indonesia	22	2	9.1	1	4.5	29	3	10.3	1	3.4	15	0	0.0	0	0.0	19	1	5.3	0	0.0
New Zealand	5	2	40.0	2	40.0	10	7	70.0	4	40.0	9	3	33.3	2	22.2	5	4	80.0	4	80.0
Other	16	8	50.0	2	12.5	20	9	45.0	3	15.0	25	10	40.0	4	16.0	12	9	75.0	2	16.7
Africa	146	66	45.2	15	10.3	113	57	50.4	16	14.2	118	43	36.4	13	11.0	67	29	43.3	18	26.9
Egypt	9	3	33.3	2	22.2	9	4	44.4	1	11.1	11	4	36.4	1	9.1	4	3	75.0	2	50.0
Nigeria	27	20	74.1	2	7.4	22	19	86.4	3	13.6	18	10	55.6	1	5.6	6	3	50.0	2	33.3
South Africa	14	6	42.9	3	21.4	10	3	30.0	3	30.0	12	5	41.7	2	16.7	6	2	33.3	1	16.7
Other Africa	96	37	38.5	8	8.3	72	31	43.1	9	12.5	77	24	31.2	9	11.7	51	21	41.2	13	25.5
Europe	230	127	55.2	84	36.5	249	150	60.2	103	41.4	275	148	53.8	98	35.6	222	135	60.8	100	45.0
Greece	24	8	33.3	5	20.8	26	13	50.0	7	26.9	22	13	59.1	9	40.9	18	12	66.7	10	55.6
United Kingdom	42	27	64.3	15	35.7	46	33	71.7	26	56.5	50	35	70.0	24	48.0	27	17	63.0	14	51.9
Germany	52	36	69.2	29	55.8	42	29	69.0	22	52.4	41	23	56.1	15	36.6	34	18	52.9	14	41.2
Italy	31	19	61.3	10	32.3	23	12	52.2	7	30.4	30	10	33.3	6	20.0	26	15	57.7	12	46.2
France	11	7	63.6	4	36.4	12	5	41.7	2	16.7	11	5	45.5	2	18.2	17	7	41.2	4	23.5
Spain	14	6	42.9	6	42.9	12	8	66.7	7	58.3	21	10	47.6	5	23.8	16	8	50.0	7	43.8
Other	56	24	42.9	15	26.8	88	50	56.8	32	36.4	100	52	52.0	37	37.0	107	72	67.3	51	47.7
North/South America	239	103	43.1	67	28.0	209	101	48.3	68	32.5	253	124	49.0	82	32.4	205	91	44.4	63	30.7
Canada	86	40	46.5	30	34.9	102	55	53.9	38	37.3	87	55	63.2	36	41.4	73	36	49.3	28	38.4
Mexico	28	8	28.6	4	14.3	16	5	31.3	3	18.8	27	10	37.0	7	25.9	33	9	27.3	5	15.2
Argentina	14	10	71.4	7	50.0	13	7	53.8	6	46.2	14	5	35.7	2	14.3	18	9	50.0	5	27.8
Brazil	26	8	30.8	6	23.1	14	6	42.9	3	21.4	32	11	34.4	9	28.1	18	6	33.3	4	22.2
Chile	11	2	18.2	1	9.1	7	0	0.0	0	0.0	9	2	22.2	1	11.1	9	5	55.6	3	33.3
Colombia	8	6	75.0	3	37.5	14	2	14.3	1	7.1	15	6	40.0	2	13.3	6	2	33.3	2	33.3
Peru	12	4	33.3	3	25.0	9	3	33.3	2	22.2	14	11	78.6	8	57.1	12	8	66.7	5	41.7
Other	54	25	46.3	13	24.1	34	23	67.6	15	44.1	55	24	43.6	17	30.9	36	16	44.4	11	30.6

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 4-42.
Foreign doctoral recipients from U.S. universities who plan to stay in the United States, by field and region/country of origin: 1990–97

Region /country of origin	1990 Total Ph.D. recipients	1990 Plan to stay in U.S. No.	1990 Plan to stay in U.S. %	1990 Firm plans to stay in U.S. No.	1990 Firm plans to stay in U.S. %	1991 Total Ph.D. recipients	1991 Plan to stay in U.S. No.	1991 Plan to stay in U.S. %	1991 Firm plans to stay in U.S. No.	1991 Firm plans to stay in U.S. %	1992 Total Ph.D. recipients	1992 Plan to stay in U.S. No.	1992 Plan to stay in U.S. %	1992 Firm plans to stay in U.S. No.	1992 Firm plans to stay in U.S. %	1993 Total Ph.D. recipients	1993 Plan to stay in U.S. No.	1993 Plan to stay in U.S. %	1993 Firm plans to stay in U.S. No.	1993 Firm plans to stay in U.S. %
Engineering																				
East/South Asia	1,580	746	47.2	495	31.3	1,986	1,136	57.2	642	32.3	2,106	1,289	61.2	644	30.6	2,181	1,303	59.7	598	27.4
China	333	181	54.4	100	30.0	483	368	76.2	178	36.9	516	448	86.8	185	35.9	545	489	89.7	197	36.1
Taiwan	476	208	43.7	134	28.2	597	294	49.2	163	27.3	637	320	50.2	143	22.4	592	235	39.7	105	17.7
Japan	17	5	29.4	4	23.5	29	7	24.1	6	20.7	25	6	24.0	3	12.0	23	6	26.1	1	4.3
South Korea	360	103	28.6	66	18.3	434	148	34.1	78	18.0	437	131	30.0	65	14.9	484	161	33.3	63	13.0
India	314	211	67.2	162	51.6	357	272	76.2	191	53.5	405	335	82.7	222	54.8	448	368	82.1	209	46.7
Other	80	38	47.5	29	36.3	86	47	54.7	26	30.2	86	49	57.0	26	30.2	89	44	49.4	23	25.8
West Asia	426	209	49.1	122	28.6	411	210	51.1	99	24.1	458	262	57.2	117	25.5	441	227	51.5	88	20.0
Iran	139	75	54.0	40	28.8	123	80	65.0	34	27.6	110	83	75.5	37	33.6	95	65	68.4	26	27.4
Israel	22	10	45.5	7	31.8	27	7	25.9	2	7.4	26	13	50.0	5	19.2	23	11	47.8	3	13.0
Turkey	59	38	64.4	24	40.7	64	28	43.8	17	26.6	81	38	46.9	20	24.7	74	29	39.2	14	18.9
Other	206	86	41.7	51	24.8	197	95	48.2	46	23.4	241	128	53.1	55	22.8	249	122	49.0	45	18.1
Pacifica/Australasia	25	15	60.0	11	44.0	45	21	46.7	12	26.7	48	22	45.8	16	33.3	43	21	48.8	13	30.2
Australia	3	2	66.7	2	66.7	7	3	42.9	3	42.9	11	9	81.8	6	54.5	6	4	66.7	3	50.0
Indonesia	14	7	50.0	6	42.9	19	8	42.1	6	31.6	24	7	29.2	6	25.0	29	12	41.4	8	27.6
New Zealand	2	2	100.0	1	50.0	2	1	50.0	1	50.0	1	1	100.0	1	100.0	8	5	62.5	2	25.0
Other	6	4	66.7	2	33.3	17	9	52.9	2	11.8	12	5	41.7	3	25.0	121	60	49.6	23	19.0
Africa	187	55	29.4	36	19.3	155	59	38.1	23	14.8	138	65	47.1	37	26.8	48	19	39.6	8	16.7
Egypt	82	16	19.5	9	11.0	57	14	24.6	6	10.5	46	15	32.6	8	17.4	12	8	66.7	2	16.7
Nigeria	23	12	52.2	8	34.8	20	14	70.0	6	30.0	11	10	90.9	5	45.5	6	3	50.0	2	33.3
South Africa	12	7	58.3	6	50.0	9	2	22.2	1	11.1	6	2	33.3	2	33.3	55	30	54.5	11	20.0
Other Africa	70	20	28.6	13	18.6	69	29	42.0	10	14.5	75	38	50.7	22	29.3	244	144	59.0	89	36.5
Europe	205	92	44.9	64	31.2	200	97	48.5	61	30.5	202	107	53.0	68	33.7	244	144	59.0	89	36.5
Greece	57	28	49.1	20	35.1	70	36	51.4	22	31.4	59	31	52.5	17	28.8	68	37	54.4	27	39.7
United Kingdom	15	10	66.7	7	46.7	15	10	66.7	6	40.0	17	14	82.4	11	64.7	18	16	88.9	12	66.7
Germany	15	5	33.3	4	26.7	8	4	50.0	0	.	18	10	55.6	7	38.9	23	14	60.9	7	30.4
Italy	14	6	42.9	3	21.4	12	2	16.7	2	16.7	10	4	40.0	2	20.0	10	7	70.0	5	50.0
France	27	12	44.4	8	29.6	19	6	31.6	6	31.6	25	10	40.0	4	16.0	32	11	34.4	4	12.5
Spain	8	1	12.5	1	12.5	4	1	25.0	1	25.0	6	3	50.0	2	33.3	8	2	25.0	2	25.0
Other	69	30	43.5	21	30.4	72	38	52.8	24	33.3	67	35	52.2	25	37.3	85	57	67.1	32	37.6
North/South America	168	75	44.6	56	33.3	170	96	56.5	67	39.4	160	84	52.5	55	34.4	179	83	46.4	45	25.1
Canada	41	22	53.7	16	39.0	54	32	59.3	24	44.4	46	27	58.7	20	43.5	42	26	61.9	18	42.9
Mexico	25	10	40.0	7	28.0	22	10	45.5	9	40.9	16	5	31.3	4	25.0	27	14	51.9	6	22.2
Argentina	12	6	50.0	4	33.3	12	9	75.0	6	50.0	14	9	64.3	5	35.7	10	6	60.0	3	30.0
Brazil	31	5	16.1	4	12.9	34	15	44.1	9	26.5	31	9	29.0	4	12.9	46	8	17.4	3	6.5
Chile	11	4	36.4	3	27.3	8	2	25.0	2	25.0	10	2	20.0	2	20.0	5	4	80.0	1	20.0
Colombia	8	5	62.5	4	50.0	11	8	72.7	3	27.3	9	6	66.7	4	44.4	8	3	37.5	3	37.5
Peru	6	3	50.0	3	50.0	7	7	100.0	4	57.1	5	5	100.0	3	60.0	10	7	70.0	3	30.0
Other	34	20	58.8	15	44.1	22	13	59.1	10	45.5	29	21	72.4	13	44.8	31	15	48.4	8	25.8

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 4-42.
Foreign doctoral recipients from U.S. universities who plan to stay in the United States, by field and region/country of origin: 1990–97

Region /country of origin	1994 Total Ph.D. recipients	1994 Plan to stay in U.S. No.	1994 Plan to stay in U.S. %	1994 Firm plans to stay in U.S. No.	1994 Firm plans to stay in U.S. %	1995 Total Ph.D. recipients	1995 Plan to stay in U.S. No.	1995 Plan to stay in U.S. %	1995 Firm plans to stay in U.S. No.	1995 Firm plans to stay in U.S. %	1996 Total Ph.D. recipients	1996 Plan to stay in U.S. No.	1996 Plan to stay in U.S. %	1996 Firm plans to stay in U.S. No.	1996 Firm plans to stay in U.S. %	1997 Total Ph.D. recipients	1997 Plan to stay in U.S. No.	1997 Plan to stay in U.S. %	1997 Firm plans to stay in U.S. No.	1997 Firm plans to stay in U.S. %
Engineering																				
East/South Asia	2,367	1,501	63.4	664	28.1	2,441	1,678	68.7	778	31.9	2,484	1,759	70.8	1,072	43.2	2,025	1,362	67.3	938	46.3
China	657	604	91.9	226	34.4	779	726	93.2	295	37.9	809	729	90.1	436	53.9	628	504	80.3	336	53.5
Taiwan	670	306	45.7	133	19.9	616	295	47.9	126	20.5	575	310	53.9	159	27.7	420	232	55.2	131	31.2
Japan	46	12	26.1	6	13.0	30	6	20.0	4	13.3	32	8	25.0	4	12.5	37	8	21.6	6	16.2
South Korea	429	143	33.3	52	12.1	344	120	34.9	46	13.4	326	119	36.5	69	21.2	292	108	37.0	71	24.3
India	480	402	83.8	235	49.0	572	489	85.5	292	51.0	625	539	86.2	376	60.2	584	486	83.2	374	64.0
Other	85	34	40.0	12	14.1	100	42	42.0	15	15.0	117	54	46.2	28	23.9	64	24	37.5	20	31.3
West Asia	428	225	52.6	93	21.7	389	244	62.7	108	27.8	369	236	64.0	122	33.1	305	181	59.3	120	39.3
Iran	92	61	66.3	18	19.6	85	67	78.8	29	34.1	68	53	77.9	25	36.8	58	37	63.8	27	46.6
Israel	16	7	43.8	4	25.0	15	4	26.7	1	6.7	17	9	52.9	6	35.3	9	4	44.4	3	33.3
Turkey	64	20	31.3	10	15.6	73	45	61.6	24	32.9	73	51	69.9	27	37.0	86	59	68.6	40	46.5
Other	256	137	53.5	61	23.8	216	128	59.3	54	25.0	211	123	58.3	64	30.3	152	81	53.3	50	32.9
Pacifica/Australasia	50	23	46.0	12	24.0	44	19	43.2	10	22.7	39	20	51.3	11	28.2	45	19	42.2	14	31.1
Australia	11	6	54.5	3	27.3	7	5	71.4	4	57.1	6	5	83.3	3	50.0	8	2	25.0	2	25.0
Indonesia	28	9	32.1	5	17.9	29	9	31.0	2	6.9	15	2	13.3	1	6.7	21	7	33.3	5	23.8
New Zealand	1	1	100.0	0	0.0	3	2	66.7	2	66.7	2	1	50.0	0	0.0	6	3	50.0	2	33.3
Other	10	7	70.0	4	40.0	5	3	60.0	2	40.0	16	12	75.0	7	43.8	10	7	70.0	5	50.0
Africa	168	86	51.2	30	17.9	122	62	50.8	24	19.7	143	86	60.1	49	34.3	103	58	56.3	47	45.6
Egypt	63	31	49.2	13	20.6	48	16	33.3	6	12.5	59	31	52.5	21	35.6	44	17	38.6	12	27.3
Nigeria	6	5	83.3	2	33.3	14	13	92.9	4	28.6	11	11	100.0	5	45.5	7	7	100.0	5	71.4
South Africa	8	2	25.0	1	12.5	7	2	28.6	1	14.3	13	9	69.2	7	53.8	9	5	55.6	5	55.6
Other Africa	91	48	52.7	14	15.4	53	31	58.5	13	24.5	60	35	58.3	16	26.7	43	29	67.4	25	58.1
Europe	257	149	58.0	94	36.6	297	201	67.7	111	37.4	239	157	65.7	112	46.9	237	157	66.2	126	53.2
Greece	58	31	53.4	23	39.7	61	42	68.9	20	32.8	47	29	61.7	22	46.8	30	20	66.7	15	50.0
United Kingdom	15	12	80.0	7	46.7	20	18	90.0	12	60.0	10	7	70.0	5	50.0	12	10	83.3	7	58.3
Germany	29	19	65.5	11	37.9	37	23	62.2	10	27.0	16	10	62.5	8	50.0	27	19	70.4	15	55.6
Italy	11	5	45.5	2	18.2	9	5	55.6	2	22.2	8	3	37.5	1	12.5	11	5	45.5	2	18.2
France	32	16	50.0	7	21.9	24	12	50.0	5	20.8	26	14	53.8	12	46.2	12	3	25.0	3	25.0
Spain	9	2	22.2	1	11.1	6	2	33.3	1	16.7	8	6	75.0	4	50.0	9	3	33.3	3	33.3
Other	103	64	62.1	43	41.7	140	99	70.7	61	43.6	124	88	71.0	60	48.4	146	105	71.9	87	59.6
North/South America	201	94	46.8	51	25.4	170	70	41.2	42	24.7	215	102	47.4	64	29.8	175	95	54.3	74	42.3
Canada	36	21	58.3	18	50.0	41	27	65.9	16	39.0	45	31	68.9	21	46.7	45	31	68.9	26	57.8
Mexico	30	11	36.7	4	13.3	26	9	34.6	6	23.1	37	15	40.5	8	21.6	26	14	53.8	11	42.3
Argentina	7	6	85.7	5	71.4	7	4	57.1	4	57.1	8	7	87.5	4	50.0	15	13	86.7	10	66.7
Brazil	49	11	22.4	5	10.2	46	6	13.0	3	6.5	67	19	28.4	12	17.9	40	11	27.5	8	20.0
Chile	8	3	37.5	3	37.5	8	2	25.0	1	12.5	8	1	12.5	0	0.0	1	0	0.0	0	0.0
Colombia	12	7	58.3	0	0.0	10	3	30.0	3	30.0	7	3	42.9	3	42.9	4	3	75.0	3	75.0
Peru	10	9	90.0	4	40.0	5	5	100.0	2	40.0	5	4	80.0	2	40.0	8	6	75.0	3	37.5
Other	49	26	53.1	12	24.5	27	14	51.9	7	25.9	38	22	57.9	14	36.8	36	17	47.2	13	36.1

NOTES: Data include foreign doctoral recipients with either permanent or temporary visas. Doctoral recipients who "plan to stay" think that they will locate in the United States; those with "firm plans" have a postdoctoral research appointment or academic, industrial, or other firm offers of employment in the United States.

SOURCE: National Science Foundation, Division of Science Resources Studies (NSF/SRS), Survey of Earned Doctorates, unpublished tabulations, 1999.

See page 4-34 in Volume 1.

Appendix table 4-43.
Foreign science and engineering doctoral recipients from major countries of origin and their plans to stay in the United States: 1985–97

Year	Total S&E doctoral recipients	Foreign S&E doctoral recipients[a]				
		Total	Plans to stay		Firm plans	
			Number	Percent	Number	Percent
1985	18,113	2,401	1,201	50.0	963	40.1
1986	19,437	2,613	1,322	50.6	1,111	42.5
1987	19,894	3,018	1,479	49.0	1,257	41.7
1988	20,933	3,383	1,729	51.1	1,444	42.7
1989	21,731	3,795	1,873	49.4	1,575	41.5
1990	22,867	5,002	2,449	49.0	1,778	35.5
1991	24,019	6,167	3,690	59.8	2,397	38.9
1992	24,673	6,625	4,274	64.5	2,541	38.4
1993	25,441	7,014	4,480	63.9	2,516	35.9
1994	26,202	7,590	5,108	67.3	2,805	37.0
1995	26,515	7,842	5,533	70.6	3,000	38.3
1996	27,230	8,026	5,781	72.0	3,713	46.3
1997	26,847	7,014	4,815	68.6	3,483	49.7

[a]Foreign doctoral recipients from selected countries of Asia, Europe, and North America. Asia includes China, India, Japan, South Korea, and Taiwan. Europe includes all Scandinavian, Western, and Eastern European countries. North America includes Canada and Mexico.

SOURCE: National Science Foundation, Division of Science Resources Studies (NSF/SRS), Survey of Earned Doctorates, special tabulations.

See figure 4-35 in Volume 1.

Science & Engineering Indicators – 2000

Appendix table 4-44.
Foreign doctoral recipients in science and engineering in 1992/93 who were working in the United States, by field and country: 1994–97

Country of origin and degree field	Foreign doctoral recipients[a]	Percent in the United States			
		1994	1995	1996	1997
S&E fields total	16,391	48	51	52	53
Taiwan	2,149	33	34	36	36
Korea	2,056	13	11	9	9
Japan	214	17	20	21	21
China (PRC)	4,010	82	88	90	92
India	1,549	77	80	82	83
Iran	228	52	54	56	55
Australia & New Zealand	104	19	22	28	28
Egypt	180	30	29	32	33
Israel	140	31	34	36	36
South Africa	70	35	39	41	39
United Kingdom	184	46	50	51	56
France	145	22	26	28	28
Germany	204	30	40	39	38
Greece	280	42	42	44	46
Brazil	251	14	14	15	15
Mexico	213	25	25	25	27
Canada	455	40	45	47	48
All other	3,959	36	39	41	40
Physical sciences total[b]	4,821	55	59	60	61
Taiwan	489	35	36	36	36
South Korea	437	12	11	9	9
Japan	48	14	19	22	22
China (PRC)	1,698	82	89	90	94
India	423	72	77	80	81
Iran	46	54	60	67	67
Australia & New Zealand	34	30	34	41	37
Egypt	20	34	31	34	34
Israel	49	36	37	41	43
South Africa	22	45	50	55	50
United Kingdom	67	48	55	59	59
France	57	14	11	15	17
Germany	94	33	41	41	36
Greece	98	38	44	46	48
Brazil	56	19	15	15	15
Mexico	49	34	34	29	32
Canada	137	35	44	48	50
All other	997	41	46	46	43
Life sciences total	3,765	48	51	53	54
Taiwan	421	36	38	40	41
South Korea	350	25	21	18	17
Japan	45	29	34	37	44
China (PRC)	1,074	82	85	88	92
India	237	70	75	82	79
Iran	44	54	51	51	47
Australia & New Zealand	25	11	13	17	20
Egypt	54	27	29	31	35
Israel	16	22	29	27	25
South Africa	17	S	27	27	27
United Kingdom	44	28	31	31	50
France	23	25	35	32	28
Germany	39	27	39	30	32
Greece	30	53	42	46	53
Brazil	86	7	9	12	13
Mexico	85	18	19	22	22
Canada	123	40	41	45	45
All other	1,052	29	32	35	35

See explanatory notes, if any, and SOURCE at end of table.

Appendix table 4-44.
Foreign doctoral recipients in science and engineering in 1992/93 who were working in the United States, by field and country: 1994–97

Country of origin and degree field	Foreign doctoral recipients[a]	Percent in the United States			
		1994	1995	1996	1997
Social sciences total[c]	2,278	29	31	32	32
Taiwan	163	14	12	12	12
South Korea	416	6	5	6	5
Japan	78	9	8	8	5
China (PRC)	255	62	67	67	70
India	149	56	56	58	58
Iran	20	39	40	40	41
Australia & New Zealand	32	11	13	17	20
Egypt	18	18	18	24	18
Israel	37	22	29	27	25
South Africa	20	24	30	31	31
United Kingdom	50	42	42	43	43
France	15	25	35	32	28
Germany	38	19	25	32	29
Greece	35	47	35	32	36
Brazil	35	10	14	14	14
Mexico	41	18	19	22	22
Canada	124	38	41	40	41
All other	752	27	29	31	30
Engineering total	5,199	50	53	53	54
Taiwan	1,076	33	36	37	37
South Korea	853	11	10	7	8
Japan	43	24	27	27	27
China (PRC)	983	89	94	96	97
India	740	85	89	89	90
Iran	118	52	55	56	55
Australia & New Zealand	13	30	34	41	37
Egypt	88	34	31	34	34
Israel	38	36	37	41	43
South Africa	11	45	50	55	50
United Kingdom	23	86	92	86	87
France	50	28	35	39	42
Germany	33	37	56	55	59
Greece	117	40	43	46	46
Brazil	74	21	19	21	17
Mexico	38	40	34	31	34
Canada	71	56	61	57	61
All other	980	45	48	50	50

S = suppressed

[a]Foreign doctoral recipients on temporary visas; does not include non-U.S. citizens with permanent resident visas.

[b]Physical sciences include earth, atmospheric, and oceanographic sciences, mathematics, and computer sciences.

[c]Social sciences include psychology, sociology, and other social sciences.

NOTES: Australia and New Zealand, Egypt, Israel, and South Africa are shown with separate estimates for each of the four major discipline groups. However, to preserve confidentiality, for each of these countries, physical sciences was combined with engineering and life sciences was combined with social sciences in estimating the percentages shown above.

SOURCE: Finn, Michael, *Stay Rates of Foreign Doctorate Recipients from U.S. Universities, 1997* (Oak Ridge, TN: Oak Ridge Institute for Science and Education, 2000).

See page 4-36 in Volume 1.

Appendix table 4-45.
Postdoctoral appointments in science and engineering, by citizenship status: 1988–97

Field	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
All postdoctoral appointments										
Total, all surveyed fields[a]	26,083	27,878	29,515	30,800	32,682	34,263	36,301	35,379	37,019	37,928
Total, science and engineering fields	19,687	20,864	21,770	22,808	23,825	24,599	25,727	25,995	26,518	26,806
Total sciences	18,002	18,952	19,831	20,565	21,474	22,165	23,137	23,367	23,847	23,868
Total engineering	1,685	1,912	1,939	2,243	2,351	2,434	2,590	2,628	2,671	2,938
U.S. citizen										
Total, all surveyed fields[a]	14,392	14,826	15,090	15,097	15,764	16,684	17,939	18,002	18,371	18,640
Total, science and engineering fields	10,423	10,654	10,651	10,775	11,154	11,591	12,433	12,778	12,910	12,585
Total sciences	9,838	10,003	10,043	10,130	10,393	10,750	11,429	11,791	11,854	11,511
Total engineering	585	651	608	645	761	841	1,004	987	1,056	1,074
Non-U.S. citizen										
Total, all surveyed fields[a]	11,691	13,052	14,425	15,703	16,918	17,579	18,362	17,377	18,648	19,288
Total, science and engineering fields	9,264	10,210	11,119	12,033	12,671	13,008	13,294	13,217	13,608	14,221
Total sciences	8,164	8,949	9,788	10,435	11,081	11,415	11,708	11,576	11,993	12,357
Total engineering	1,100	1,261	1,331	1,598	1,590	1,593	1,586	1,641	1,615	1,864

[a]Survey includes all science, engineering, and health fields.

SOURCE: National Science Foundation, Division of Science Resources Studies (NSF/SRS), *Graduate Students and Postdoctorates in Science and Engineering, Fall 1997*, NSF 99-325, Project Officer, Joan Burrelli (Arlington, VA: 1999).

See page 4-37 in Volume 1.

Appendix table 4-46.
Science and engineering faculty in U.S. higher education, by teaching field and region of origin: 1997

Region of origin	Total S&E	Physical sciences	Life sciences	Math & computer sciences	Social sciences	Engineering
			Number			
Total S&E faculty	224,707	37,020	53,055	44,375	65,509	24,748
U.S. origin	179,698	29,598	45,502	32,976	55,870	15,753
Foreign origin	45,009	7,422	7,553	11,399	9,639	8,995
Asia	23,559	3,541	3,250	6,315	4,630	5,823
Europe	11,822	2,738	2,377	2,825	2,338	1,544
North America	2,307	209	596	544	878	80
Central & South America	3,164	370	655	714	880	545
Africa	3,060	309	468	743	662	878
Abroad, not specified	1,097	255	207	258	251	125
			Percent			
Total S&E faculty	100.0	100.0	100.0	100.0	100.0	100.0
U.S. origin	80.0	80.0	85.8	74.3	85.3	63.7
Foreign origin	20.0	20.0	14.2	25.7	14.7	36.3
Asia	10.5	9.6	6.1	14.2	7.1	23.5
Europe	5.3	7.4	4.5	6.4	3.6	6.2
North America	1.0	0.6	1.1	1.2	1.3	0.3
Central & South America	1.4	1.0	1.2	1.6	1.3	2.2
Africa	1.4	0.8	0.9	1.7	1.0	3.5
Abroad, not specified	0.5	0.7	0.4	0.6	0.4	0.5

NOTES: Data include scientists and engineers whose first job is in science and engineering postsecondary teaching at four-year colleges and universities in the United States. Data exclude scientists and engineers who teach in science and engineering fields in two-year or community colleges, or who teach as a secondary job.

SOURCE: National Science Foundation, Division of Science Resources Studies (NSF/SRS), database on scientists and engineers (SESTAT), unpublished tabulations.

See figure 4-36 in Volume 1.

Science & Engineering Indicators – 2000

Appendix table 4-47.
Foreign-born female science and engineering faculty in U.S. higher education, by teaching field and region of origin: 1997

Region of origin	Total S&E	Physical sciences	Life sciences	Math & computer sciences	Social sciences	Engineering
Total foreign-born female S&E faculty	6,447	1,156	2,043	1,182	1,845	221
Asia	3,104	612	826	730	876	60
Europe	1,791	322	591	304	530	44
North America	283	24	113	7	135	4
Central & South America	630	38	394	24	126	48
Africa	439	160	119	117	12	31
Abroad, not specified	200	0	0	0	166	34

NOTES: Data include scientists and engineers whose first job is in science and engineering postsecondary teaching at four-year colleges and universities in the United States. Data exclude scientists and engineers who teach in science and engineering fields in two-year or community colleges, or who teach as a secondary job.

SOURCE: National Science Foundation, Division of Science Resources Studies (NSF/SRS) database on scientists and engineers (SESTAT), unpublished tabulations.

See page 4-37 in Volume 1. *Science & Engineering Indicators – 2000*

Appendix table 4-48.
Major places of origin for foreign-born science and engineering faculty in U.S. higher education, by field and sex: 1997

Place of origin	Total S&E	Physical sciences	Life sciences	Math & computer sciences	Social sciences	Engineering
Total S&E faculty	224,707	37,020	53,055	44,375	65,509	24,748
			Total			
Total S&E faculty from major places of origin	21,545	3,665	3,340	5,261	4,495	4,784
India	6,876	688	1014	2,086	1,491	1,597
China	4,830	939	591	1,745	642	913
United Kingdom	3,426	942	848	318	607	711
Taiwan	1,820	122	177	431	351	739
Germany	1,309	422	227	137	463	60
South Korea	1,218	336	189	96	451	146
Greece	1,044	196	190	163	353	142
Japan	1,022	20	104	285	137	476
			Female			
Total S&E faculty from major places of origin	2,561	343	888	431	865	34
India	832	115	320	289	94	14
China	246	66	85	71	17	7
United Kingdom	405	15	238	23	126	3
Taiwan	215	17	113	20	58	7
South Korea	256	23	14	4	215	0
Germany	278	9	118	24	127	0
Greece	329	98	0	0	228	3
Japan	32	0	13	7	12	0

NOTES: Data include scientists and engineers whose first job is in science and engineering postsecondary teaching at four-year colleges and universities in the United States. Data exclude scientists and engineers who teach in science and engineering fields in two-year or community colleges, or who teach as a secondary job.

SOURCE: National Science Foundation, Division of Science Resources Studies (NSF/SRS) database on scientists and engineers (SESTAT), unpublished tabulations.

See text table 4-11 in Volume 1.