The class of 1993: Earnings and occupations by college major, 1 and 10 years after graduation

by
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People with a bachelor's degree typically earn more and are unemployed less often than people without a degree. But that's only part of the story.

Earnings and employment vary by field of major, and they change over time. Data from the U.S. Department of Education show, for example, that 1992–93 college graduates with a career-related major often earned more than those with an academically focused one.

This article analyzes data on the earnings and occupations of workers 1 and 10 years after college graduation, by field of major. The first section compares earnings across all majors. A second section highlights 11 degree fields and shows the most common occupations of workers who have a bachelor's degree in those fields. The final section suggests additional resources.

As you read the article, keep in mind that a number of factors affects earnings and occupations. Averages are presented here, but each individual's experiences may vary.

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These data come from the Baccalaureate and Beyond Longitudinal Study, produced by the U.S. Department of Education's National Center for Education Statistics (NCES). The study follows a group of students who earned a bachelor's degree during the 1992–93 academic year and asks them questions about their employment experiences.

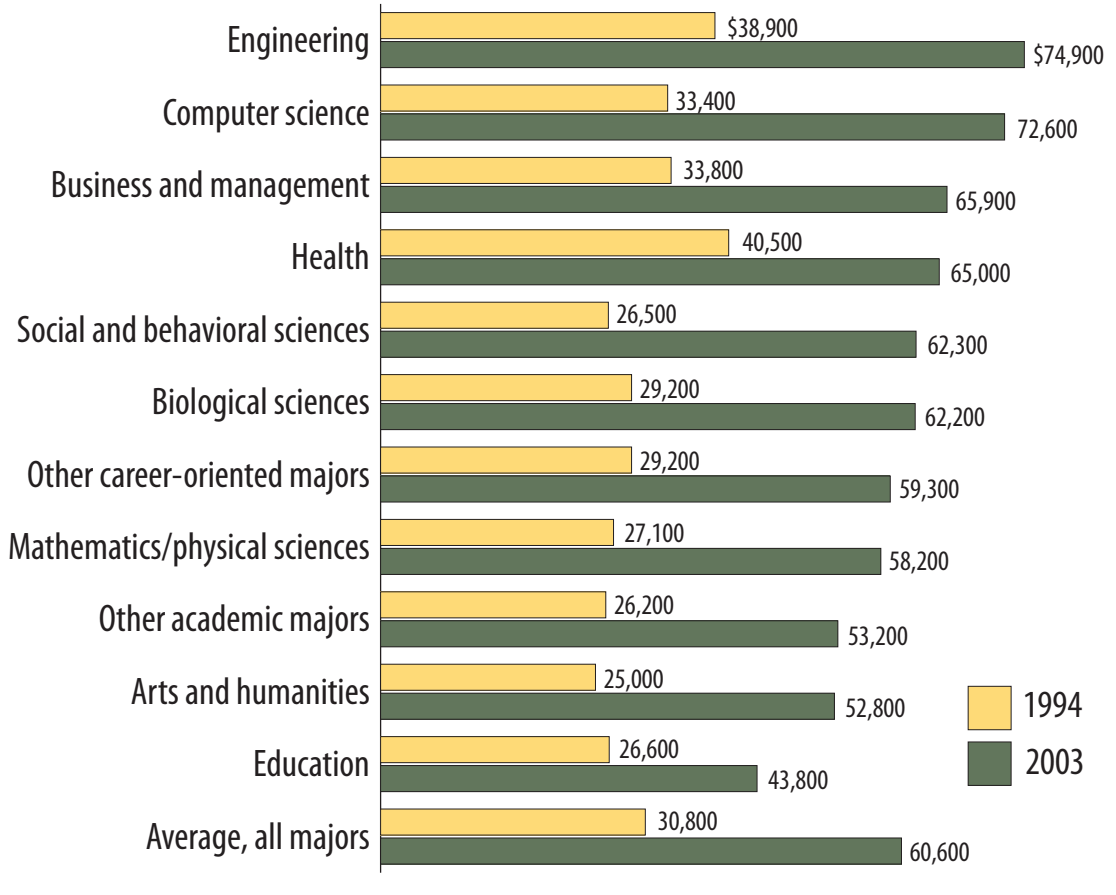
Earnings by major

Across all majors, earnings for the class of 1993 doubled between 1994 and 2003: On average, real earnings in 2003 dollars increased from $30,800 1 year after graduation to $60,600 10 years after graduation. (See chart below.)

Majors that prepare students for specific careers, such as engineering or business and management, typically resulted in higher earnings for workers in those fields both 1 and 10 years after graduation. Students who majored in healthcare-related studies and engineering and who were working full time at one job had the highest earnings 1 year after graduation, averaging $40,500 and $38,900, respectively, in 1994. Workers in these two major fields were still among the highest annual earners in 2003, averaging $65,000 and $74,900, respectively.

By 2003, computer science and business and management majors also had average earnings above $65,000, and most other bachelor's degree groups had average earnings above $50,000. The only exception was education majors, who averaged $43,800 that year. Workers with this degree had the

Average earnings* of full-time employed 1992–93 bachelor's degree recipients 1 and 10 years after graduation, by undergraduate major



* Average earnings in constant 2003 dollars

smallest numeric change in earnings between 1994 and 2003.

Social and behavioral sciences majors had the biggest rate of change—a 135-percent increase—in their earnings, from $26,500 1 year after graduation to $62,300 10 years after. This increase likely reflects the large number of people in these fields who returned to school and got advanced degrees, which usually lead to higher earnings. Similarly, earnings for biological sciences and mathematics or physical sciences majors increased significantly, and people in these fields of study also were more likely to have completed additional degrees by 2003.

Variations in earnings. Many factors affect individual earnings. Getting additional education or training beyond a bachelor's degree, for example, often raises a worker's earnings. Conversely, leaving the labor force temporarily, such as to care for children or after losing a job, can have a negative impact on earnings.

Moreover, students in many bachelor's degree programs often take courses outside of their field. They might major in more than one subject and minor in another, for example. And some students complete an internship program or gain other work experience while in school.

Those and other differences, such as the selectivity of the undergraduate institution a student attended, are not taken into account in the earnings presented here. All of these factors may—or may not—lead to higher earnings for some workers. Also, remember that the earnings shown here are averages: Some people made more than these amounts, and some made less.

And, as nearly any worker might agree, money isn't everything when it comes to a career. Enjoying the job or being able to work a flexible schedule, for example, can be just as rewarding as a big paycheck.

Occupations by major

Bachelor's degree recipients worked in all types of occupations during their postcollege years. Ten years after graduation, the average worker had been at his or her job for more than 5 years. By 2003, more than three-fourths of full-time workers said that their job required a bachelor's degree. Sixty-three percent said that their undergraduate education was very important to their job.

Field of study made a difference in how quickly people settled into jobs that required or related to their degree. For example, among health majors in the first year after completing a degree, more than 90 percent working full time reported that their job was closely related to their major. Full-time workers with computer science and education majors reported the next highest rates of degree-related jobs shortly after graduation, with 78 and 72 percent, respectively.

In contrast, fewer full-time workers who majored in arts and humanities (33 percent) or in social and behavioral sciences (34 percent) felt that their job was closely related to their undergraduate major in 1994. By 2003, however, a fairly large proportion of workers who majored in these liberal arts fields reported that their undergraduate education was very important to their job (about 56 and 52 percent, respectively). Reporting that an undergraduate education is very important to a job is not the same as reporting that a job is closely related to an undergraduate major, but they are mentioned together here because 2003 data on whether respondents' jobs were closely related to their undergraduate majors were not available in the NCES study.

Undergraduate majors. Colleges and universities throughout the United States offer more than 100 different undergraduate majors. The charts on the pages that follow group these fields of study into 11 basic categories.

These major fields of study are categorized as either academic or career-oriented. Academic majors are shown on the following pages as yellow charts. They include arts and humanities, biological sciences, mathematics and physical sciences, social and behavioral sciences, and an "all other" category. On the following pages, charts for career-oriented majors are green and include business and management, computer science, education,

engineering, health, and all other. Sixty-five percent of 1992–93 graduates studied a career-related field.

Occupations. Choice of major affects choice of work. In some occupations, employers require or prefer that workers have a specific major. Fields such as engineering or computer science, for example, are more likely to require or prefer workers who have a degree in that subject.

Overall, people with career-oriented majors were more concentrated in occupations related to their undergraduate degree both 1 and 10 years after graduation. People with academic majors worked in a wider variety of occupations.

For more information

Data linking major fields of study with occupational categories are most useful if you know which occupations are included in each category and what type of work is involved with each occupation.

To learn more about which occupations are included in each of the broader groups discussed in this article, refer to the *Occupational Outlook Handbook*. For example, the *Handbook*'s section on management and business and financial operations (online at **www.bls.gov/oco/oco1001.htm**) includes detailed information about occupations in the career field of business and management. The *Handbook* is available at many libraries and online at **www.bls.gov/oco**.

Past issues of the *Quarterly* have other articles related to bachelor's degree recipients' employment outcomes, career options, and earnings. See, for example, "The 2004–14 job outlook for college graduates," in the fall 2006 issue and available online at **www.bls.gov/opub/ooq/2006/fall/art03.pdf**, and "What can I do with my liberal arts degree?" in the winter 2007–08 issue and available online at **www.bls.gov/opub/ooq/2007/winter/art01.pdf**. For more information about earnings, see "Earnings data from BLS: What we have and how to find it," in the summer 2007 issue and available online at **www.bls.gov/opub/ooq/2007/summer/art04.pdf**.

Data in this article are from *Ten Years After College: Comparing the Employment Experiences of 1992–93 Bachelor's Degree Recipients With Academic and Career-Oriented Majors*. This NCES report contains other information from the Baccalaureate and Beyond Study, including industry employment, employment stability, and the career potential of 1992–93 bachelor's degree recipients. To get a copy of the report, write to NCES, 1990 K Street NW., Washington, DC 20006; call (202) 502–7300; or access the report online at **nces.ed.gov/pubs2008/2008155.pdf**.

Spotlight on majors

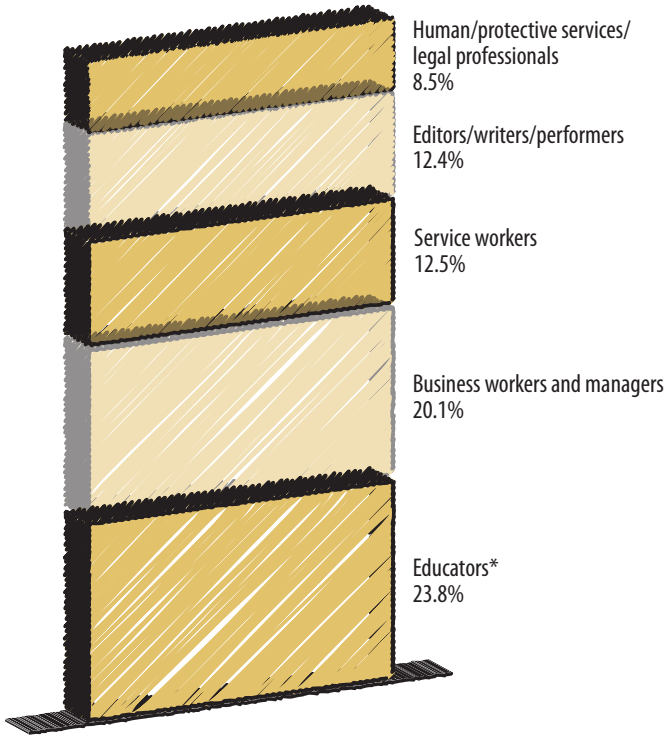
The charts on the following pages show the most significant occupations for each category of major. An asterisk indicates the occupational group that accounted for the most employment 1 year after graduation. (Note: Some workers in each category are in occupations that are not specified on the chart, so percentages do not sum to 100.)

Arts and humanities

About 10 percent of 1992–93 bachelor's degree recipients majored in the arts or the humanities. This group includes those who studied history, philosophy, religious studies, languages, design, music, or other performing and fine arts.

Both 1 and 10 years after graduation, people with these majors were most likely to work as educators or as business workers or managers.

The proportion of arts and humanities majors who were employed as administrative, clerical, and legal support workers declined from 12 percent in 1994 to 7 percent in 2003. And by 2003, nearly 22 percent of people with these majors had earned a master's degree; 6 percent had earned a doctoral or first-professional degree.

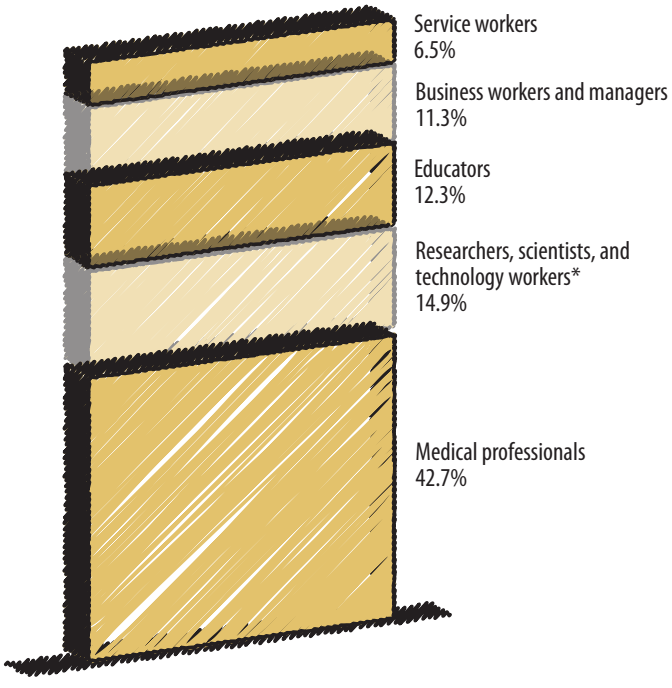


Biological sciences

This category accounted for about 4 percent of 1992–93 bachelor's degree recipients. In addition to biology majors, the category includes those in related fields such as zoology, botany, and biochemistry.

One year after earning their degree, nearly one-third of these majors worked as researchers, scientists, and technology workers. The proportion decreased to 15 percent by 2003.

Many people who majored in biological sciences earned higher degrees in fields such as medicine or dentistry. In fact, 20 percent of biological sciences majors were enrolled in school and were not working in the year after they finished their undergraduate degree. By 2003, this category had the highest proportion of graduates who had earned a doctoral or first-professional degree: more than 31 percent. And between 1994 and 2003, the proportion of biological sciences majors who worked as medical professionals increased from 12 percent to 43 percent.



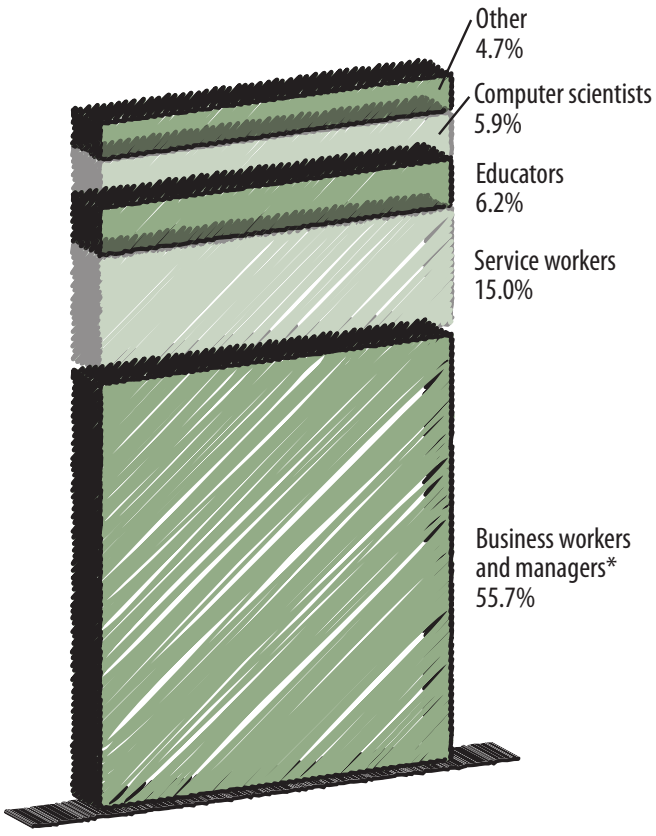
Business and management

Business and management were the most popular undergraduate majors, with 23 percent of 1992–93 graduates focusing on one of these fields. This group includes majors such as accounting, finance, business administration, and marketing.

One year after graduation, 1992–93 bachelor's degree recipients with this major were the most likely to be employed and not enrolled in school (about 85 percent). Ten years afterward, the rate was still among the highest.

More than half of the people with this major were employed as business workers or managers both 1 and 10 years after earning their undergraduate degree. This occupational group includes business or financial support services; financial services; midlevel and executive management; and supervisory, office, and other administration.

The proportion of business and management majors employed as service workers—which includes customer service, personal services, and health services workers—declined from about 21 percent in 1994 to about 15 percent in 2003, reflecting an overall trend of decreasing service work as bachelor's degree recipients progressed in their careers.

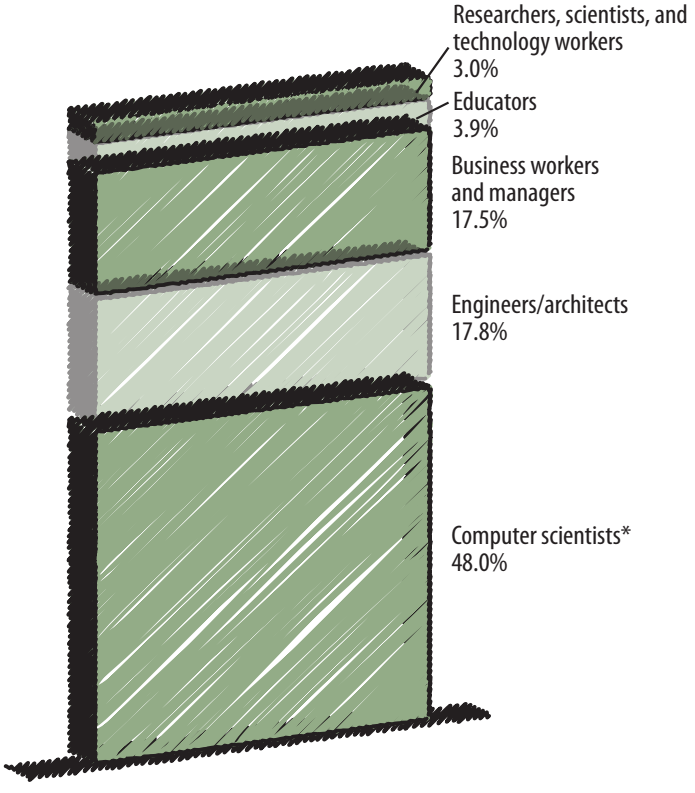


Computer science

Computer science was the smallest of all the major categories, accounting for 2 percent of all 1992–93 bachelor's degree recipients. This field includes majors such as computer programming, data processing, and computer and information sciences.

People with computer science majors had among the highest rates of being employed and not enrolled in school both 1 and 10 years after graduation. Ten years after graduation, they also had been at their jobs the longest—an average of about 6 years.

As might be expected, computer science majors were most likely to work as computer scientists. However, in both 1994 and 2003, more than half worked in occupations ranging from engineers to managers. Many others were researchers, scientists, and technology workers. The computer science category includes technical workers and computer equipment operators.

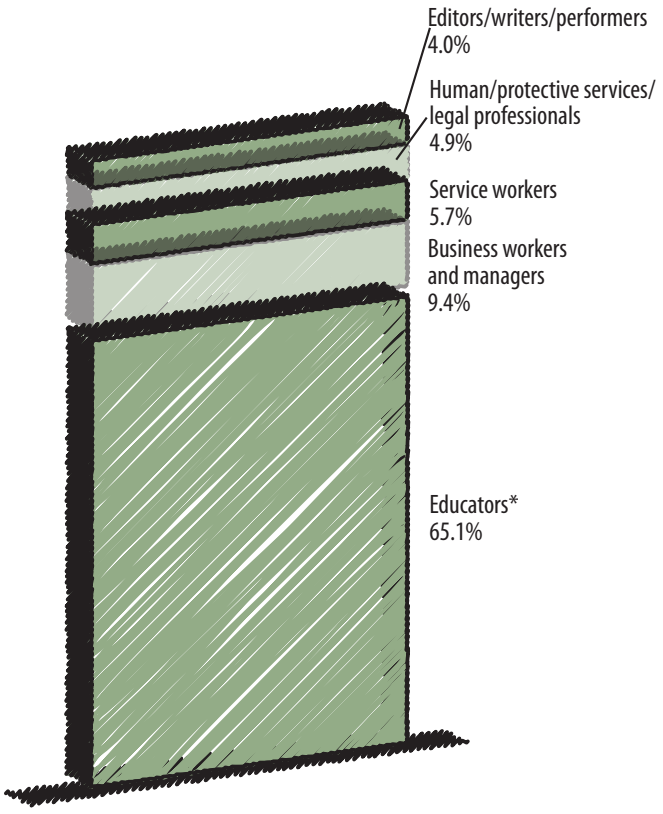


Education

Thirteen percent of 1992–93 bachelor's degree recipients earned their degrees in education. This category includes all types and levels of education, such as early childhood, elementary, and special education.

About two-thirds of education majors worked as educators in both 1994 and 2003. Twenty-eight percent had earned a master's degree by 2003, the highest proportion of any major. Education majors also reported one of the highest rates of job security 10 years after completing their degree, with 86 percent of these full-time workers reporting satisfaction with the stability of their jobs in 2003, compared with an average of 81 percent for all major groups.

In 2003, almost 19 percent of education majors were neither working nor enrolled in school—the greatest proportion of any major. One year after completing their degree, however, the 5 percent of these majors who were not working or enrolled in school was among the lowest of any major.



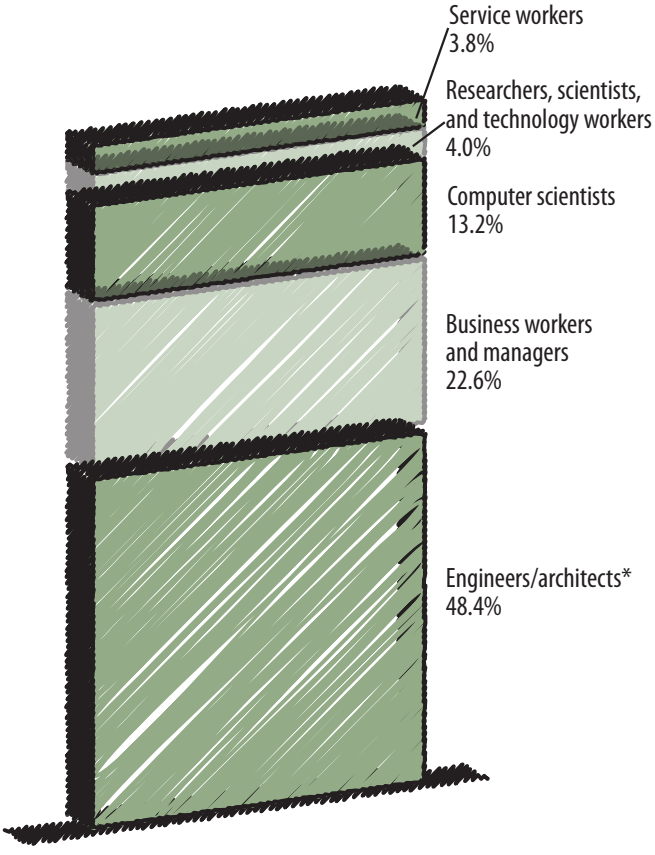
Engineering

Engineering accounted for about 6 percent of degrees awarded among 1992–93 graduates. This category includes fields such as electrical, civil, and chemical engineering.

One year after earning their undergraduate degree, about 8 percent of engineering majors were enrolled in school and not working. About 13 percent were working while attending school. But by 2003, this major group had the highest proportion of people who were working and not enrolled in school: almost 87 percent. And nearly one-fourth of engineering majors had earned a master's degree by that year.

Nearly half of all engineering majors worked as engineers or architects 10 years after graduation. One year after graduation, more than 12 percent of engineering majors were employed as researchers, scientists, and technology workers. By 2003, the rate had declined to 4 percent.

A shift also occurred in the proportion of engineering graduates employed as business workers or managers or as computer scientists. In 1994, these occupational groups accounted for about 7 percent and 6 percent of graduates, respectively. In 2003, they increased to about 23 percent and 13 percent, respectively.



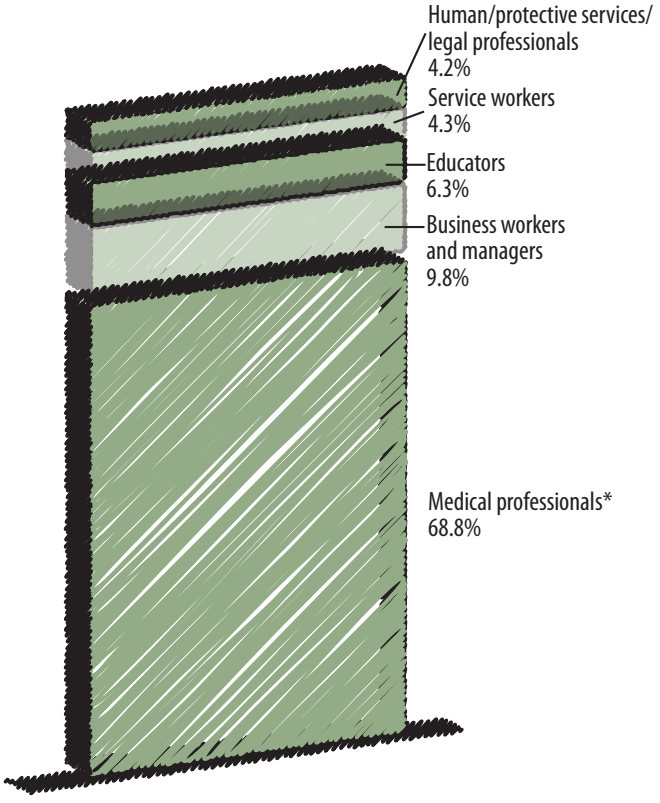
Health

Health majors made up about 7 percent of degree recipients among 1992–93 graduates. This group includes medical technology, nursing, veterinary medicine, dentistry, and other medical and allied health fields.

This major had the greatest proportion of people who were 30 or more years old when they earned their bachelor's degree (29 percent). It also had the largest proportion of graduates who had part-time or multiple jobs in 2003. And compared with graduates in other majors, health majors had the lowest proportion unemployed at any time the survey was conducted in the 10 years after earning their degree—along with one of the shortest average durations of unemployment.

Most health majors worked as medical professionals both 1 and 10 years after earning a degree. The proportion in business and management increased from about 4 percent to about 10 percent over this period.

By 2003, about 19 percent of health majors had earned a master's degree; another 3 percent had earned a higher degree, including a first-professional degree.



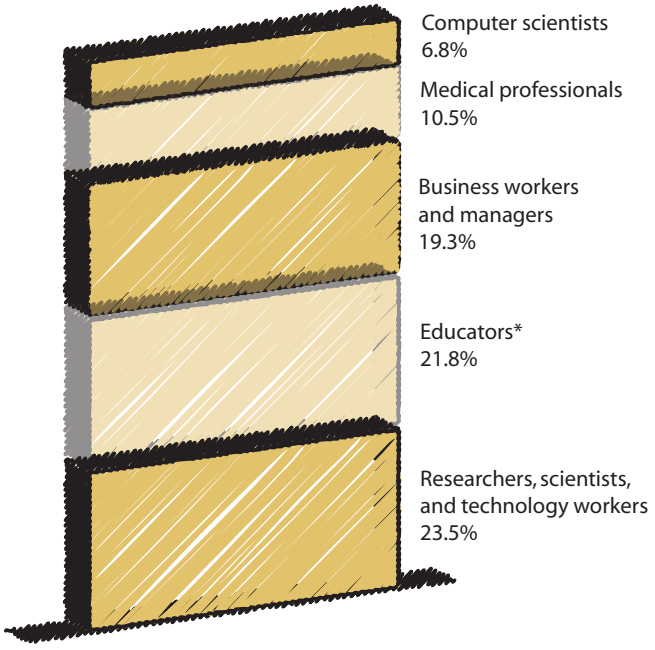
Mathematics and physical sciences

Mathematics and physical sciences were less popular than other fields, with about 3 percent of 1992–93 bachelor's degree recipients majoring in them. This group includes those majoring in mathematics, statistics, or any of the physical sciences, such as chemistry, earth science, and physics.

Nearly half of all mathematics and physical science majors had earned a higher degree by 2003, the highest rate of any major. More than 20 percent had earned a doctoral or first-professional degree. And as more mathematics and physical science graduates earned medical or other advanced degrees, the proportion of these undergraduate majors who worked as medical professionals increased from 2 percent to 10 percent between 1994 and 2003.

One year after earning a bachelor's degree, about one-third of mathematics and physical science majors worked as educators. This occupational category includes graduate teaching assistants as well as other teachers and instructors. Ten years after earning their undergraduate degree, the proportion of mathematics and physical sciences majors working as educators decreased to 22 percent.

Researchers, scientists, and technology workers made up the top occupational category in 2003 for graduates with this major. This category employed about the same proportion of mathematics and physical sciences graduates in 2003 as it did in 1994.



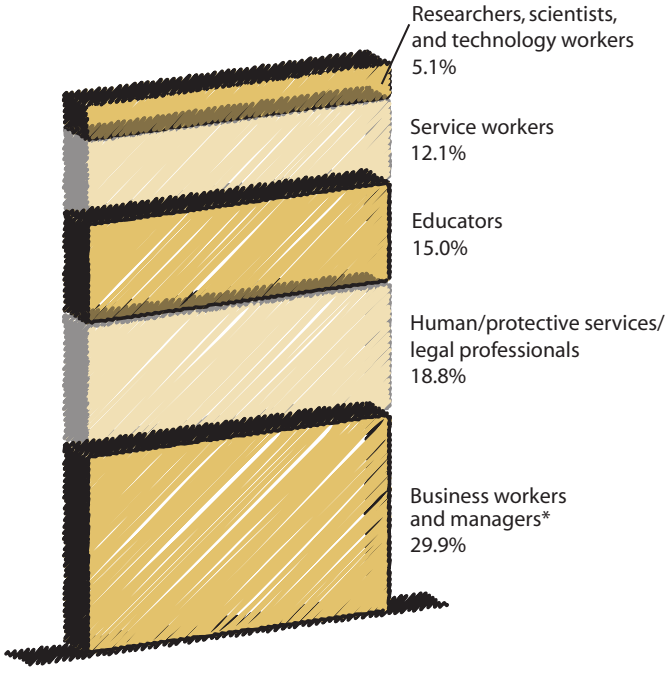
Social and behavioral sciences

The social and behavioral sciences accounted for about 13 percent of degrees earned by 1992–93 graduates. Psychology, anthropology, economics, geography, sociology, and political science are fields within this category.

These undergraduate majors frequently earned higher degrees: About 22 percent had earned a master's degree by 2003, and another 9 percent had earned a doctoral or first-professional degree.

One year after graduation, more than 18 percent of social and behavioral sciences majors were working as service workers; nearly 16 percent were employed as administrative, clerical, or legal support workers. Ten years after graduation, the proportions had declined to about 12 percent and 4 percent, respectively.

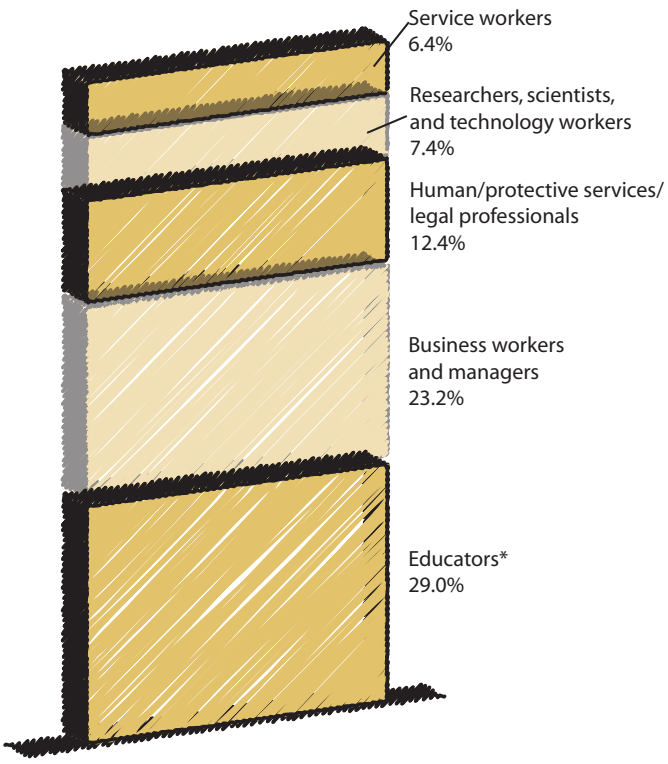
Although graduates with these majors decreased their shares in some occupations, they increased in others. Social and behavioral sciences majors working as educators, for example, increased from 9 percent to 15 percent between 1994 and 2003. The proportion working in human services, protective services, or legal professions increased from 15 percent to 19 percent. And business workers or managers, the most significant occupational group in both 1994 and 2003, increased from 26 percent to nearly 30 percent.



Other academic

This general category accounted for about 4 percent of degrees earned by 1992–93 bachelor's degree recipients. The category includes majors such as African-American studies, women's studies, and interdisciplinary studies.

Ten years after completing their degree, more than half of all graduates in these majors worked as educators or as business workers or managers. These two occupational groups also were the largest employers of graduates with other academic majors 1 year after they had earned their degree. Reflecting the general trend for graduates in all major categories, a smaller proportion of people was employed as service workers or administrative, clerical, or legal support workers in 2003 than in 1994, with shifts from 16 percent in 1994 to 6 percent in 2003 for service workers and 11 percent to 5 percent for administrative, clerical, or legal support workers.



Other career

This large category accounted for 14 percent of degrees earned by 1992–93 bachelor's degree recipients. It includes a wide range of majors, including agricultural science, communications, cosmetology, prelaw, library science, protective services, commercial art, air transportation, and social work. None of the individual majors within this group accounted for more than 1 percent of all 1992–93 graduates.

Within the category, people's occupations were as varied as their majors. Nearly one-fourth worked as business workers or managers 10 years after earning their bachelor's degree. One year after earning their degree, more than 18 percent were service workers—the second most popular occupational category in that year—but by 2003, the proportion had declined to about 14 percent.

About 15 percent of all people with these majors had earned a master's degree by 2003, with nearly 4 percent earning a higher degree.