

SIDEBAR

Projected Growth of Employment in S&E Occupations

According to Bureau of Labor Statistics (BLS) projections, the faster growth in S&E employment relative to overall employment is expected to continue through the 2016–26 period (13% versus 7%) (Table 3-A; Figure 3-A).^{*} In addition, occupations such as computer and mathematical scientists and health care practitioners and technicians, which employ the most workers in S&E and S&E-related occupations (4.2 million and 8.8 million workers, respectively), are expected to grow the most between 2016 and 2026.

TABLE 3-A

Bureau of Labor Statistics projections of employment and job openings in S&E and other selected occupations: 2016–26

(Thousands)

Occupation	BLS National Employment Matrix 2016 estimate	BLS projected 2026 employment	Occupational openings, 2016–26, annual average	10-year growth in total employment (%)
Total, all occupations	156,063.8	167,582.3	18,742.0	7.4
All S&E	6,952.6	7,825.3	591.5	12.6
Computer and mathematical scientists (excluding computer programmers, including logisticians)	4,248.7	4,882.3	364.7	14.9
Engineers, including ship engineers and sales engineers	1,765.8	1,911.0	136.1	8.2
Life scientists	325.4	358.0	32.4	10.0
Physical scientists	278.2	305.3	28.0	9.7
Social and related scientists (excluding historians)	334.5	368.7	30.3	10.2
S&E-related occupations				
S&E managers	956.6	1,088.4	88.0	13.8
S&E technicians and technologists, except computer programmers	1,125.2	1,203.7	113.5	7.0
Computer programmers	294.9	273.6	15.5	-7.2
Health care practitioners and technicians	8,751.5	10,088.1	625.1	15.3
Selected other occupations				
Lawyers	792.5	857.5	40.7	8.2
Postsecondary teachers	1,871.4	2,108.3	172.4	12.7

BLS = Bureau of Labor Statistics.

Note(s)

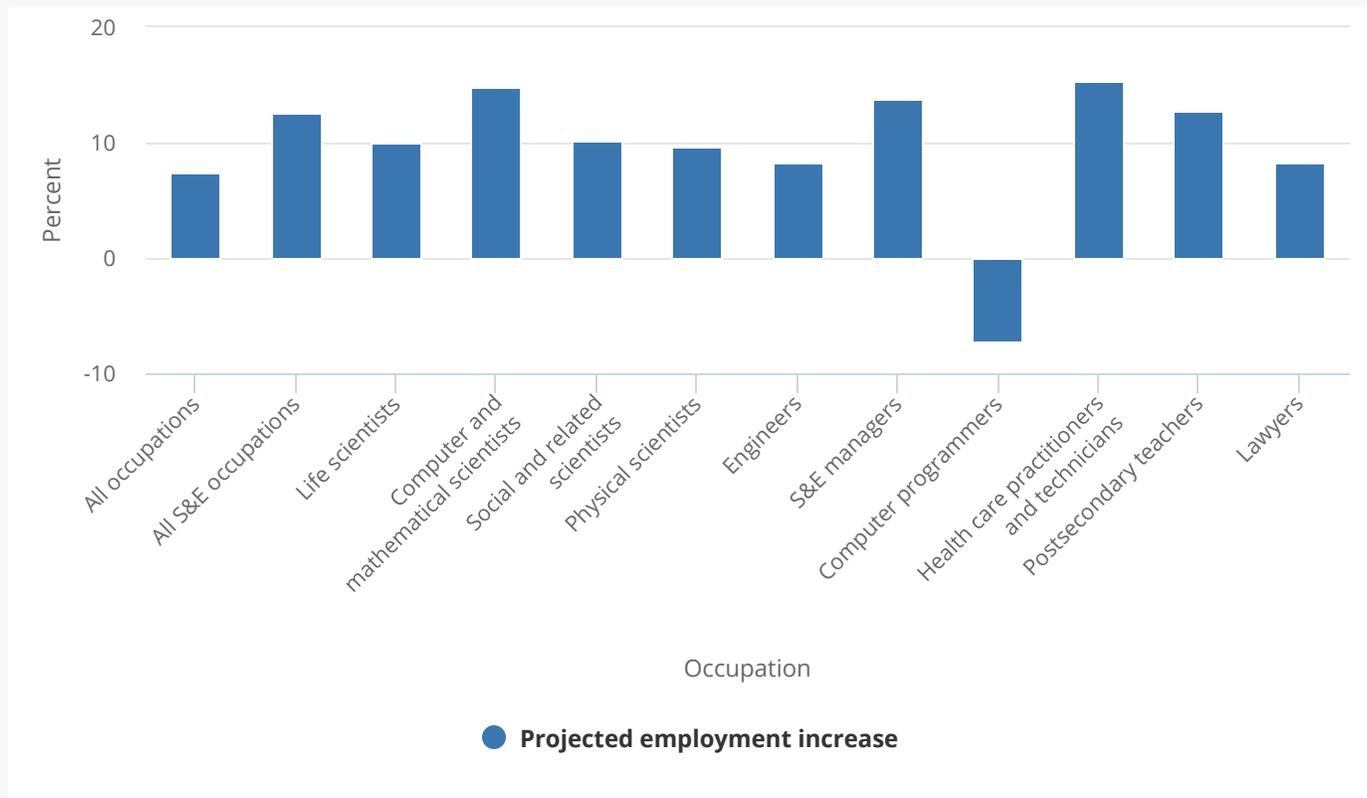
Estimates of current and projected employment for 2016–26 are from BLS's National Employment Matrix; data in the matrix are from the Occupational Employment Statistics (OES) Survey and the Current Population Survey (CPS). Together, these sources cover paid workers, self-employed workers, and unpaid family workers in all industries, agriculture, and private households. Because data are derived from multiple sources, they can often differ from employment data provided by the OES Survey, CPS, or other employment surveys alone. BLS does not make projections for S&E occupations as a group nor does it do so for some of the S&E and S&E-related occupational categories as defined by the National Science Foundation (NSF); numbers in the table are based on the sum of BLS projections for occupations that the NSF includes in the respective categories.

Source(s)

National Center for Science and Engineering Statistics, National Science Foundation, special tabulations (2018) of the 2016–26 BLS Employment Projections. See Table S3-1.

FIGURE 3-A

Projected increases in employment for S&E and other selected occupations: 2016–26

**Note(s)**

The computer and mathematical scientists category excludes computer programmers and mathematical technicians and includes logisticians. The social and related scientists category excludes historians. The engineers category includes ship engineers and sales engineers.

Source(s)

National Center for Science and Engineering Statistics, National Science Foundation, special tabulations (2018) of the 2016–26 Bureau of Labor Statistics Employment Projections.

Science and Engineering Indicators

Employment projections are dependent on assumptions about labor markets and overall economic activity and are difficult to forecast long in advance. In addition, technological and other innovations will influence demand for workers in specific occupations. BLS routinely evaluates the accuracy of the employment projections and recently found that their projections for 2006, 2008, and 2010 performed relatively well in comparison to other agency projections and to other models (Byun, Henderson, and Toossi 2015). These projections are based only on the demand for narrowly defined S&E occupations and do not include the wider range of occupations in which S&E degree holders use their training.

The occupation groups of computer and mathematical scientists and health care practitioners and technicians are each projected to grow 15% from 2016 to 2026 (Table 3-A; Figure 3-A). These occupation groups are also expected to have the largest numbers of job openings (projected annual averages of about 365,000 and 625,000, respectively).[†] Projected growth of engineers and occupations in life, physical, and social sciences is smaller (8% to 10%), but still exceeds the growth for all occupations (7%) (Table 3-A; Figure 3-A). In contrast, BLS projects a loss of employment for computer programmers[‡] and slow growth in employment for S&E technicians and technologists relative to all S&E and health care occupations. The projected decline in employment of computer programmers follows a long-term decline in employment in this occupation since the early 2000s (BLS *OES 1999–2019*). Several studies have projected declines in demand for computer programmers in the United States and suggested as a possible reason the ability of companies to offshore these activities to countries where wages are lower (see Levine 2012 for a review).

The proportion of total employment in S&E occupations and in the broad S&E categories is projected to change little between 2016 and 2026. S&E occupations and health care occupations, for example, comprise approximately 5% and 6%, respectively, of all occupations in 2016 and in the projected 2026 estimates. Computer and mathematical scientists comprise nearly two-thirds of S&E occupations in 2016 (61%) and 2026 (62%).

* To project occupational openings, the Bureau of Labor Statistics (BLS) calculates an estimate of separations caused by workers exiting the labor force, due to retirement or other reasons, and separations caused by workers transferring to different occupations. Projections of separations are combined with projections of employment change to determine occupational openings. This estimate of openings does not count workers who change jobs but remain in the same occupation. For more information, see <https://www.bls.gov/emp/documentation/separations.htm> (accessed 28 February 2019).

† These projections are based only on the demand for narrowly defined S&E occupations and do not include the wider range of occupations in which S&E degree holders often use their training.

‡ For more information, see <https://www.bls.gov/ooh/computer-and-information-technology/computer-programmers.htm> (accessed 14 May 2019).