

SIDEBAR

Projected Growth of Employment in STEM Occupations

According to Bureau of Labor Statistics (BLS) (2020a) projections, which were developed prior to the COVID-19 pandemic of 2020, S&E employment is expected to grow faster than overall employment through the 2019–29 period (10% vs. 4%) (Table LBR-A). S&E managers, computer and mathematical scientists, and health care practitioners and technicians are expected to grow the most—at 18%, 13%, and 9%, respectively—from 2019 to 2029 (Table LBR-A).^{*} The 2019–29 projections do not include the impact of the COVID-19 pandemic and response efforts. However, a recent report presents alternate scenarios for selected occupations subject to higher levels of uncertainty as a result of potential structural changes related to the pandemic (Ice, Rieley, and Rinde 2021).

Table LBR-A**Bureau of Labor Statistics projections of employment and job openings in S&E and other selected occupations: 2019–29**

(Thousands)

| Occupation | BLS National Employment Matrix 2019 estimate | BLS projected 2029 employment | 10-year growth in total employment (number) | 10-year growth in total employment (%) |
|---|--|-------------------------------|---|--|
| Total, all occupations | 162,795.6 | 168,834.7 | 6,039.1 | 3.7 |
| S&E occupations | 7,659.7 | 8,391.1 | 731.4 | 9.5 |
| Computer and mathematical scientists (excluding computer programmers, including logisticians) | 4,791.6 | 5,402.3 | 610.7 | 12.7 |
| Engineers (including ship engineers and sales engineers) | 1,883.3 | 1,956.4 | 73.1 | 3.9 |
| Life scientists | 344.8 | 361.4 | 16.6 | 4.8 |
| Physical scientists | 276.6 | 291.4 | 14.8 | 5.4 |
| Social and related scientists (excluding historians) | 363.4 | 379.6 | 16.2 | 4.5 |
| S&E managers | 1,389.7 | 1,639.5 | 249.8 | 18.0 |
| S&E technicians and technologists, except computer programmers | 1,339.9 | 1,351.0 | 11.1 | 0.8 |
| Computer programmers | 213.9 | 193.8 | -20.1 | -9.4 |
| Healthcare practitioners and technicians | 9,133.7 | 9,967.3 | 833.6 | 9.1 |
| Construction and extraction workers | 3,862.7 | 4,013.0 | 150.3 | 3.9 |
| Installation, maintenance, and repair workers | 5,119.2 | 5,217.7 | 98.5 | 1.9 |
| Production workers | 2,543.8 | 2,433.7 | -110.1 | -4.3 |
| Lawyers | 813.9 | 846.3 | 32.4 | 4.0 |
| Postsecondary teachers | 1,721.5 | 1,849.7 | 128.2 | 7.4 |

BLS = Bureau of Labor Statistics.

Note(s):

Estimates of current and projected employment for 2019–29 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 Center for Science and Engineering Statistics (NCSES); numbers in the table are based on the sum of BLS projections for occupations that NCSES includes in the respective categories.

Source(s):

Bureau of Labor Statistics, special tabulations (2020) of the 2019–29 Employment Projections.

Science and Engineering Indicators

In contrast, BLS projects the largest loss of employment for computer programmers (a decline of more than 9%) and production workers (a decline of more than 4%) (BLS 2021). 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), which may relate to offshoring these activities to countries where wages are lower (see Levine for a review). The manufacturing sector is expected to lose the most of any sector over the projected decade. Factors contributing to the loss of jobs in this sector include the adoption of new productivity-enhancing technologies, such as robotics, and international competition (BLS 2020d).

The 2019–29 projections do not include the impact of the COVID-19 pandemic and response efforts. The BLS employment projections are developed using historical data. Here, the projections cover the time period through 2019; therefore, all input data precede the pandemic. The projections are long-term and intended to capture structural change in the economy, not cyclical fluctuations. As such, they are not intended to capture the impact of the recession that began in February 2020. However, beside the immediate recessionary impact, the pandemic may cause structural changes to the economy that would not be captured here.

* 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.