



A Broader Look at the S&E Workforce

Although National Center for Science and Engineering Statistics (NCSES) data provide detailed information on college-graduate scientists and engineers, NCSES lacks similar data on individuals whose highest level of education is either high school, some college, or a 2-year degree. Sometimes referred to as the “sub-baccalaureate,” “career and technical,” or the “skilled technical” workforce (as used herein), these workers employ significant levels of S&E and technical knowledge in their jobs and are a considerable segment of the overall S&E workforce in the United States. This sidebar presents nationally representative data from the Census Bureau’s American Community Survey (ACS) on employment trends among this group, showing solid career opportunities with lower unemployment rates and higher salaries than their non-S&E counterparts. About 6.1 million skilled technical workers age 25 and older were employed in an S&E or S&E-related occupation in 2015.*

The skilled technical workforce accounts for a considerable part of S&E employment in the United States—about one-quarter of all S&E jobs (1.6 million) and 40% of all S&E-related jobs (4.5 million) in 2015. About 13% of skilled technical workers in these occupations were black, 10% were Hispanic, 4% were Asian, and about 11% were foreign born. The corresponding shares among college-educated workers in S&E or S&E-related occupations were 7% black, 6% Hispanic, 17% Asian, and 24% foreign born. Thus, in terms of demographic composition, skilled technical workers were more likely to be black or Hispanic than their counterparts with bachelor’s degrees.

Skilled technical workers were employed in large numbers in computer occupations and health occupations. Among the 1.6 million skilled technical workers employed in S&E occupations, 69% were concentrated in computer occupations; computer support specialists accounted for the largest subset (27%) of these workers. In comparison, 47% of the college-educated workers in S&E occupations held computer jobs; software developers represented the largest subset (41%) of these workers.

Health occupations accounted for the largest subset of workers in S&E-related occupations (74%). However, skilled technical workers were concentrated in different categories of health occupations than those with a bachelor’s degree. For example, about 60% of health workers at the sub-baccalaureate degree level of educational attainment were employed as health technicians or technologists; only 13% of health workers with a college degree were employed in these occupations. Conversely, a larger proportion of health workers with a college degree were employed as registered nurses (61% with a bachelor’s degree or higher and 40% of sub-baccalaureate workers, respectively).

Relative to other occupations, S&E and S&E-related occupations provide sound employment for workers at the sub-baccalaureate degree level. In 2015, the median earnings of skilled technical workers in S&E (\$60,000) or S&E-related (\$45,000) occupations were significantly higher than the median earnings in other occupations (\$29,000). The unemployment rate among these workers in S&E (4%) or S&E-related (3%) occupations was lower than the rate in other occupations (7%). Among skilled technical workers in S&E or S&E-related occupations, median salaries ranged from about \$35,000 among health care technicians and technologists to \$50,000 among S&E technicians, \$51,000 among registered nurses, and \$60,000 among computer workers. The unemployment rate ranged from 2% among registered nurses to 3% among health care technicians and 4% among computer workers and S&E technicians.

Workers employed in S&E or S&E-related occupations received more formal training (even if they did not have a bachelor’s degree) than those employed in other occupations; therefore, it is not surprising that salaries were higher in these jobs. Among skilled technical workers, 69% of those employed in S&E occupations and 73% of those employed in S&E-related



occupations had an associate's degree or 1 or more years of college credit, compared to 36% of those employed in other occupations.

* This sidebar defines the S&E workforce by workers in S&E occupations (except postsecondary teachers in S&E fields). The ACS data do not allow for separate identification of postsecondary teachers by fields. See Appendix Table 3-1 for a list of S&E occupations in the 2015 ACS.