

Aircraft Mechanics

Master Gas Fitter

Coders

Nuclear Reactor Operators

Morticians

Bookkeepers

Dentists

Electricians

People of Science

An inclusive analysis of the U.S. STEM workforce and its economic impact.

Ironworkers

Financial Analysts

Lab Technicians

Agricultural Technicians

Ecologist

Math Teachers

Architects

Advanced Manufacturing Specialists

Network Engineer

Chemists

Nurses

Anthropologists

Science is US

Science is US

Science is US is a foundation-supported effort that brings together a diverse group of science, engineering, industry, higher education and labor organizations to galvanize a broad, bipartisan political base of support for science and technology.

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Science is everyone and everywhere.

And science is the American economy.

More than 67 million workers in the United States are STEM professionals— people who spend the vast majority of their job tasks engaged in science, technology, engineering, math and medicine. They make up 34.3% of the nation's workforce.

While the absolute number of STEM professionals in the United States grew between 2017 and 2021, more importantly, the percentage of the workforce employed in STEM jobs grew too—a trend shows no signs of slowing. The Bureau of Labor Statistics predicts that by 2031 STEM employment will increase by more than twice the rate of non-STEM employment.ⁱ

U.S. STEM Employment Continues to Grow

2021

67,105,479

STEM Jobs

34.3%

of U.S. Workers

2017

64,080,198

STEM Jobs

32.7%

of U.S. Workers

Stories

But who are the nation's STEM professionals?

Surveys show that when asked who a STEM professional is, common responses include doctor, coder, engineer or chemist. Rarely does the popular response point to advanced manufacturing specialists, accountants, IT professionals, military communications network managers or licensed practical nurses—but all the workers in those fields use science, engineering, math, medical and related technological skills for three-quarters or more of their job-related tasks—making them STEM professionals.ⁱⁱ



What led me into network engineering has a lot to do with my innate curiosity. While working in the computer retail industry (a long time ago) I became increasingly curious assisting consumers with their technology purchasing decisions. I needed to know why I was recommending one operating system over another. I believe that curiosity led me on the network engineering and cybersecurity path. A typical 'day in the life' can include anything from a simple user-generated trouble ticket to checking that our data center is running smoothly to solving a network problem.

Brian Nelson | Network Engineer



I am a small animal general practice veterinarian in central Maine treating and caring for dogs and cats. That's everything from wellness exams to sick visits to routine spay/neuter surgeries to foreign body operations and ruptured tumors. I also do orthopedic surgeries, fracture repairs and plate and screw fixation. What's interesting about veterinary medicine is that it involves a lot of detective work. The analytical skills used in the profession are natural for me. Some cases are obvious while other may require more investigative medicine.

Dr. Ai Takeuchi, VMD | Veterinarian



I started out at Penn State studying engineering. In my second year I shifted my focus to healthcare and studying biology—in part after a conversation with a family friend whose father had recently had an amputation. The idea of combining engineering and healthcare intrigued me. I worked in the field as a technician, a practitioner and a manager before becoming a clinical supervisor for the VA. Now I work in a private practice in Pennsylvania and have patients of all ages.

Jason Kunec | Prosthetist



I'm an anthropologist that teaches public health at a small liberal arts college in St. Paul, Minnesota. More than half of my students are first-generation immigrants or students of color who have experienced or seen first-hand major public health challenges in their home countries or communities. Like me, my students are looking for ways to contribute to public health without necessarily going to medical school.

Susi Keefe, Ph.D. | Public Health Professor



Growing up, I was always interested in learning how things worked. After working as an apprentice I became a lead technician at Magnolia Plumbing in Maryland. I obtained my Gas Fitter license in 2017 and my Journeyman Plumber license in 2018, as well as many other professional certificates. Last year I obtained the highest licenses in the field—the Master Plumber and Master Gas Fitter licenses. I've serviced government buildings, schools, hospitals, airports, restaurants and both commercial and residential buildings, all using my STEM background.

Dodanim Romero | Master Plumber, Master Gas Fitter



My STEM career found me at a young age while working as an assistant after high school at an accounting firm. I liked numbers so I took 'Principals of Accounting' and 'Bookkeeping for Small Businesses' at my local college. The classes were helpful but the best education for me was on-the-job training. Currently, I'm an independent bookkeeper for small to medium-sized businesses and organizations in Virginia.

Sarah Burner | Bookkeeper

Education

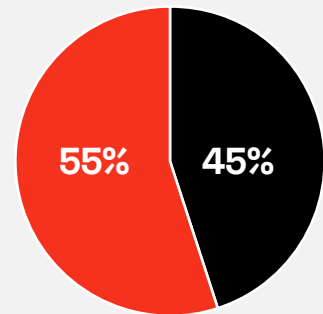
The types of U.S. STEM jobs available are more varied than many people assume—starting with the level of education necessary to pursue a STEM career. As our analysis shows, the majority of U.S. STEM professionals—55.4 percent—do not hold a bachelor’s degree.

STEM careers are plentiful at virtually every level of education. Notably, nearly the same percent of U.S. workers with associate’s (41%) and bachelor’s (42%) degrees are employed in STEM jobs. Overall, people with graduate degrees—master’s degrees and higher—comprise just 17% of the nation’s STEM workforce. And roughly the same percentage of STEM workers have less than a high school diploma (4.9%) as have doctoral degrees (5.3%).

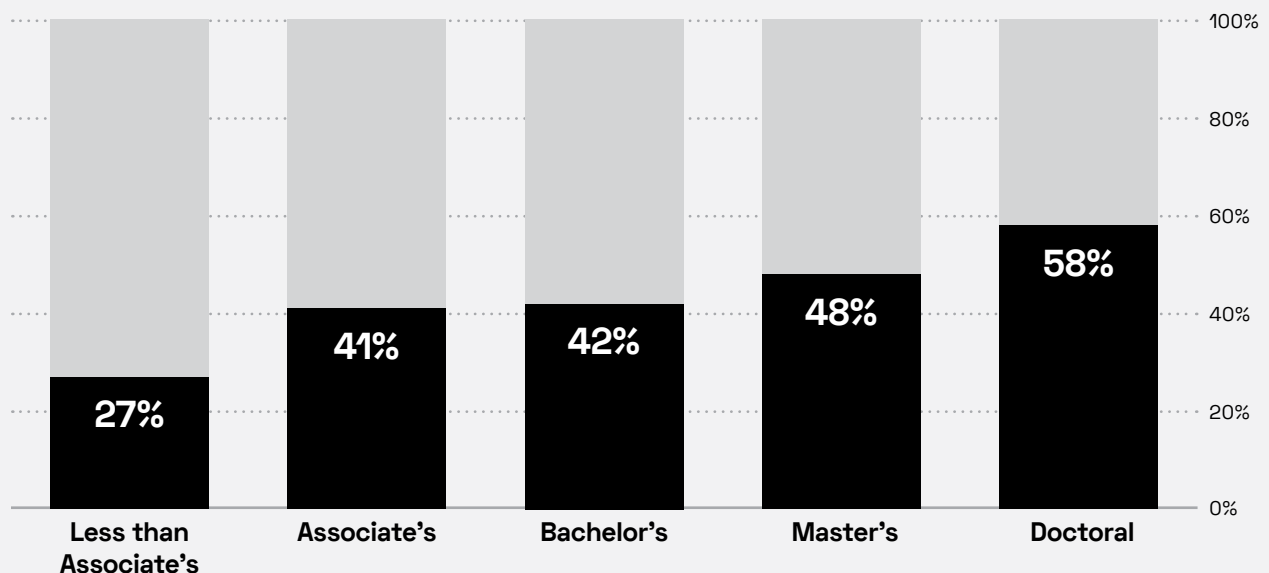
The Majority of U.S. STEM Professionals Do Not Hold a Bachelor’s Degree

Less than a bachelor’s degree

Bachelor’s degree and higher



Percentage of U.S. Workers Per Educational Attainment Level Employed in STEM Jobs



Not only do STEM occupations provide fulfilling, well-paid jobs regardless of a person's educational attainment, STEM drives an outsized share of the U.S. economy. Direct STEM economic activity accounted for \$9.45 trillion in 2021 equal to 40.5% of U.S. GDP. And like the increase in the percentage of STEM jobs in the U.S. workforce, the percentage of U.S. GDP driven directly by STEM increased from 2017 to 2021.

The Direct Impact of STEM on the U.S. Economy Continue to Grow

2021

\$9.45 Trillion

40.5% of U.S. GDP

2017

\$7.66 Trillion

39.3% of U.S. GDP

Workforce Development

STEM is increasingly driving jobs and the economy, but the STEM workforce does not represent the diversity of the U.S. population.

According to the Science and Engineering Indicators produced by the National Science Foundation, a gender gap persists in STEM professions with women making up approximately one-third of the STEM workforce though they comprise 48% of the U.S. labor force overall. Similarly, Black, Hispanic and Native people are underrepresented in STEM jobs.ⁱⁱⁱ

The rapid growth in STEM jobs—but without the labor force trained to fill them—has led to a widening skills gap for employers.

Surveys of employers and research by consultants in the United States and internationally point to a large and growing skills gap.^{iv} Three key industry sectors in particular—finance, technology and manufacturing—all heavily reliant on STEM professionals—are projected to face the greatest shortfalls of qualified workers over the next decade. If more is not done to fill the gap, economic growth and the pace of innovation may slow.

To bridge these divides and fill these gaps we must change how we talk about STEM jobs and STEM professionals.

We must dispense with age-old stereotypes, such as the stigma associated with non-bachelor's career paths,^v while engaging and inspiring the next generation of STEM professionals.

In a survey by the Pew Research Center,^{vi} 40 percent of non-STEM workers indicated they had an interest in pursuing a STEM career at some point but did not pursue that interest. More than one-quarter of that group (27%) said the cost and time they associated with pursuing education and following a STEM career path was the barrier. Fourteen percent said they found STEM classes too hard or not interesting enough.

Many U.S. STEM professionals advance their careers by obtaining new credentials, furthering their education or leveraging the experience already received through on-the-job training. The U.S. military, for example, is a STEM-rich environment with one of the highest concentrations of STEM professionals in the U.S. workforce. Veterans—from both the enlisted and officer ranks—are a potentially untapped source of STEM skills for employers.^{vii}

It is also necessary to engage and educate future STEM professionals far earlier with heightened focus and investment in STEM education in PK-12 schools along with expanded opportunities for post-secondary education.

Career and technical colleges, community colleges, skilled trade unions, the military and employers provide valuable pathways for building skills and re-training workers in STEM fields.^{viii} Teacher training, particularly at the elementary school level, is another key area for action.^{ix}

Conclusion

Ours is a STEM economy and those in STEM professions have an edge. They have fulfilling and dynamic careers that pay more and produce more. They are vital to America's success and our leading role as a global innovator.

The strength in the U.S. STEM economy lies in our workforce, talent that is educated, trained and motivated to succeed. As our People of Science analysis demonstrates, STEM professionals come from all education levels and varied backgrounds and skills. And all enjoy a world of life-changing opportunities.

But they can't do it alone. Educators, business owners and government leaders must join together to maximize the potential of STEM professionals throughout our economy. Leaders across society must be champions for science and engineering, telling a new STEM story that will enlighten students and workers alike and preserving our leadership position in technology and innovation.

STEM Jobs Pay More, Produce More and Contribute More than Non-STEM Jobs

	STEM Jobs	Non STEM Jobs
Mean Sales Output per Job	\$259,585	\$177,801
Mean GDP per Job	\$140,769	\$121,579
Mean Labor Income per Job	\$91,664	\$64,976

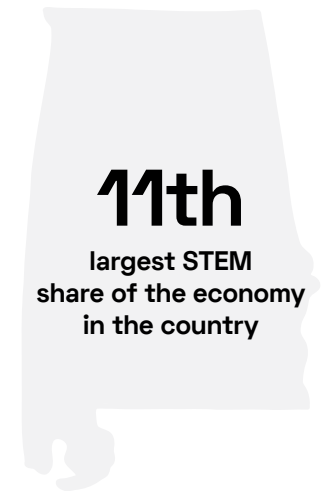
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- ^{vii} Enterprise Florida, the State University System of Florida - Board of Governors and Science is US, Science and Engineering in Florida: Veterans & Defense Industry, July 2021. Available online at: <https://youtu.be/TcaZev2vqzk>.
- ^{viii} Science is US, Maine State Chamber of Commerce and Maine Math and Science Alliance, Building the STEM Education and Workforce: Policy Recommendations for Maine, March 2022. Available online at: https://scienceisus.org/wp-content/uploads/2022/03/ME-STEM_policyMAR1022_FV.pdf.
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State Highlights

Alabama

STEM has an outsized impact on Alabama's economy with 42% of the state's GDP directly attributable to STEM—the 11th highest share of state GDP in the country. With 35% of Alabama's workforce employed in STEM jobs, the state has the 12th largest STEM workforce in the nation.



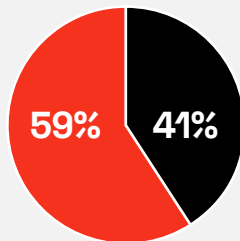
People of Science

The percentage of Alabama's STEM workforce without a bachelor's degree (59%) is greater than the national average (55.4%).

Alabama ranks 9th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree

Bachelor's degree and higher



940,000

STEM Professionals

35%

of the state's workforce in STEM jobs

12th

largest STEM workforce in the nation

STEM Drives Alabama's Economy

\$111.6 Billion

amount STEM contributes to the state's economy

42%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$15.3 Billion

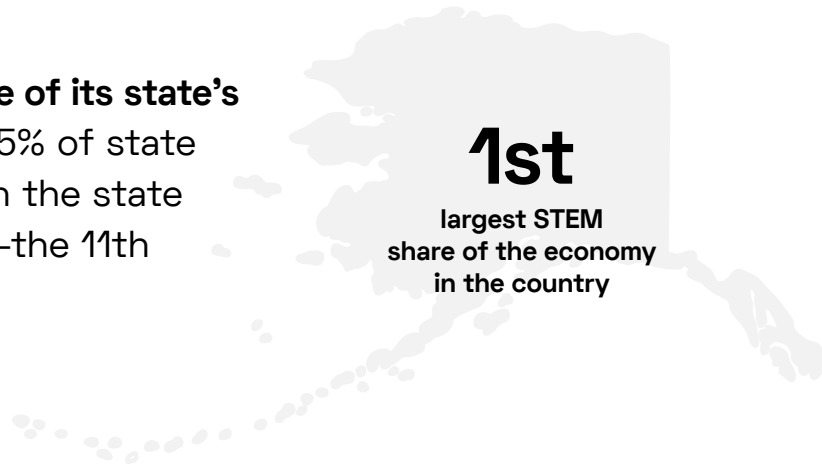
Federal tax revenue generated by STEM in Alabama

\$7.2 Billion

State and local tax revenue generated by STEM in Alabama

Alaska

Alaska leads the nation in the percentage of its state's economy directly attributed to STEM (45% of state GDP). The 154,000 STEM professionals in the state account for 35% of Alaska's workforce—the 11th largest in the United States.

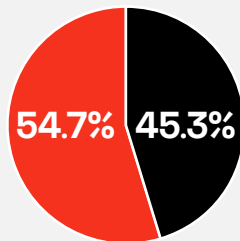


People of Science

The percentage of Alaska's STEM workforce without a bachelor's degree (54.7%) is less than the national average (55.4%).

Alaska ranks 36th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree



Bachelor's degree and higher

154,000

STEM Professionals

35%

of the state's workforce in STEM jobs

11th

largest STEM workforce in the nation

STEM Drives Alaska's Economy

\$26 Billion

amount STEM contributes to the state's economy

45%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$2.6 Billion

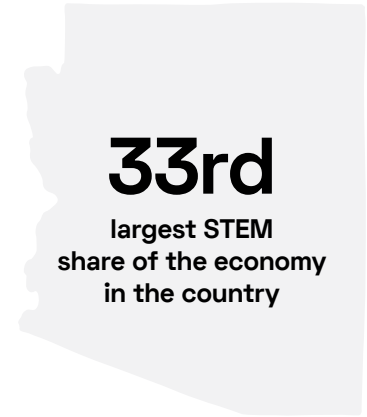
Federal tax revenue generated by STEM in Alaska

\$1.3 Billion

State and local tax revenue generated by STEM in Alaska

Arizona

STEM professionals make up 34% of Arizona's workforce and have an outsized impact on the state's economy generating 39% of the state's GDP. The majority of Arizona's STEM professionals—just over 55%—do not hold a bachelor's degree.



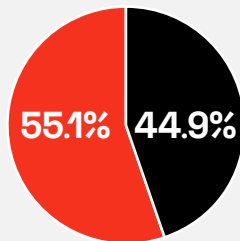
People of Science

The percentage of Arizona's STEM workforce without a bachelor's degree (55.1%) is slightly less than the national average (55.4%).

Arizona ranks 33rd in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree

Bachelor's degree and higher



1.3 Million

STEM Professionals

34%

of the state's workforce in STEM jobs

28th

largest STEM workforce in the nation

STEM Drives Arizona's Economy

\$166 Billion

amount STEM contributes to the state's economy

39%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$24.5 Billion

Federal tax revenue generated by STEM in Arizona

\$11.3 Billion

State and local tax revenue generated by STEM in Arizona

Arkansas

Arkansas's STEM workforce ranks near the top in the nation (6th) in terms of percentage of the state's STEM professionals that do not have a bachelor's degree. Overall, STEM professionals make up over a third of the state's workforce accounting for 38% of Arkansas's GDP.



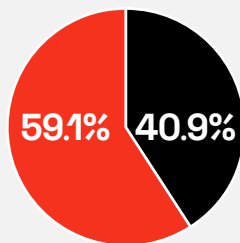
People of Science

The percentage of Arkansas's STEM workforce without a bachelor's degree (59.1%) is greater than the national average (55.4%).

Arkansas ranks 6th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree

Bachelor's degree and higher



545,000

STEM Professionals

33.3%

of the state's workforce in STEM jobs

39th

largest STEM workforce in the nation

STEM Drives Arkansas's Economy

\$57 Billion

amount STEM contributes to the state's economy

38%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$9.1 Billion

Federal tax revenue generated by STEM in Arkansas

\$4.2 Billion

State and local tax revenue generated by STEM in Arkansas

California

STEM has an outsized impact on California's economy.

Although California ranks in the bottom third of the states in terms of the size of its STEM workforce, it ranks 16th in the percent of the state's economy driven by STEM.



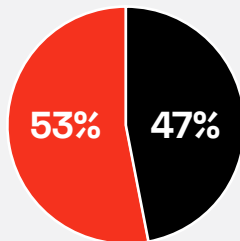
People of Science

The percentage of California's STEM workforce without a bachelor's degree (53%) is less than the national average (55.4%).

California ranks 42nd in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree

Bachelor's degree and higher



7.88 Million

STEM Professionals

34%

of the state's workforce in STEM jobs

38th

largest STEM workforce in the nation

STEM Drives California's Economy

\$1.412 Trillion

amount STEM contributes to the state's economy

42%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$172 Billion

Federal tax revenue generated by STEM in California

\$88.8 Billion

State and local tax revenue generated by STEM in California

Colorado

Colorado's STEM workforce has an outsized impact on the state's economy. The over 1.3 million Coloradans who are STEM professionals drive 40% of the state's GDP despite comprising 35% of the state's workforce.

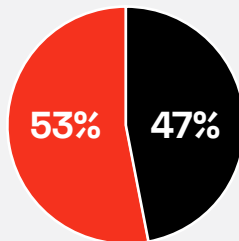
26th
largest STEM share of the economy in the country

People of Science

The percentage of Colorado's STEM workforce without a bachelor's degree (53%) is less than the national average (55.4%).

Colorado ranks 44th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree



Bachelor's degree and higher

1.34 Million

STEM Professionals

35%

of the state's workforce in STEM jobs

19th

largest STEM workforce in the nation

STEM Drives Colorado's Economy

\$176 Billion

amount STEM contributes to the state's economy

40%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$24.7 Billion

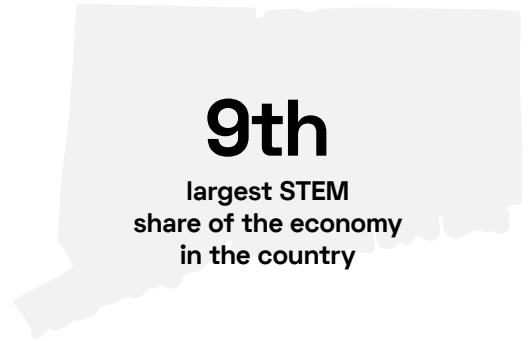
Federal tax revenue generated by STEM in Colorado

\$11.8 Billion

State and local tax revenue generated by STEM in Colorado

Connecticut

Connecticut is one of the most STEM-intensive states in the country—ranking 7th for the share of its workforce who are STEM professionals and 9th for the share of its GDP attributed to STEM.



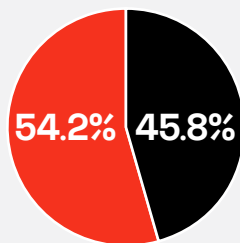
People of Science

The percentage of Connecticut's STEM workforce without a bachelor's degree (54.2%) is less than the national average (55.4%).

Connecticut ranks 39th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree

Bachelor's degree and higher



788,000

STEM Professionals

36%

of the state's workforce in STEM jobs

7th

largest STEM workforce in the nation

STEM Drives Connecticut's Economy

\$128 Billion

amount STEM contributes to the state's economy

42%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$15.8 Billion

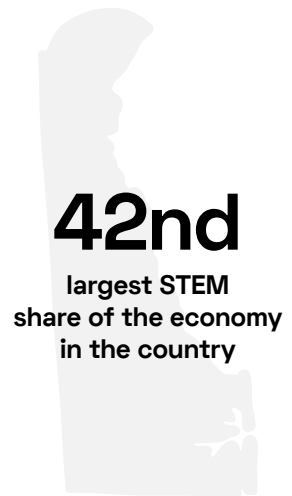
Federal tax revenue generated by STEM in Connecticut

\$8 Billion

State and local tax revenue generated by STEM in Connecticut

Delaware

Over a third of Delaware's workforce are STEM professionals—putting Delaware at 29th in the nation in terms of the percentage of the state's workforce working in STEM. Over \$31 Billion of Delaware's GDP (38.6%) is directly due to STEM.



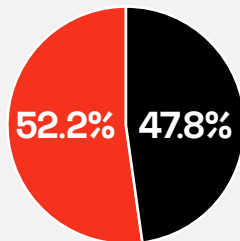
People of Science

The percentage of Delaware's STEM workforce without a bachelor's degree (52.2%) is less than the national average (55.4%).

Delaware ranks 45th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree

Bachelor's degree and higher



200,000

STEM Professionals

34%

of the state's workforce in STEM jobs

29th

largest STEM workforce in the nation

STEM Drives Delaware's Economy

\$31.2 Billion

amount STEM contributes to the state's economy

38.6%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$3.8 Billion

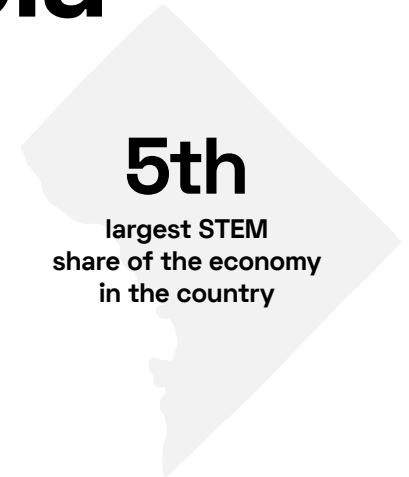
Federal tax revenue generated by STEM in Delaware

\$1.9 Billion

State and local tax revenue generated by STEM in Delaware

District of Columbia

Washington, DC leads the country in STEM. When compared to the 50 states, the District ranks first in the percentage of its workforce who are STEM professionals and 5th in terms of the share of the city's economy directly attributed to STEM. In total 39% of Washington, DC's workforce are STEM professionals and over 43% of the city's GDP is driven by STEM.



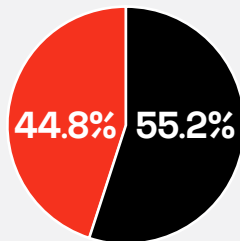
People of Science

The percentage of Washington, DC's STEM workforce without a bachelor's degree (44.8%) is less than the national average (55.4%).

Washington, DC ranks last in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree

Bachelor's degree and higher



338,000

STEM Professionals

39%

of the state's workforce in STEM jobs

1st

largest STEM workforce in the nation

STEM Drives Washington, DC's Economy

\$69 Billion

amount STEM contributes to the state's economy

43.2%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$7.9 Billion

Federal tax revenue generated by STEM in Washington, DC

\$4.2 Billion

State and local tax revenue generated by STEM in Washington, DC

Florida

STEM accounts for a large share of Florida's economy, with 35.6% of the state's GDP directly driven by STEM. The over 4 million STEM professionals in the state comprise one third of the Florida's overall workforce.



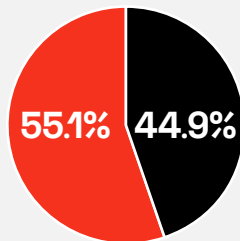
People of Science

The percentage of Florida's STEM workforce without a bachelor's degree (55.1%) is less than the national average (55.4%).

Florida ranks 35th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree

Bachelor's degree and higher



4.1 Million

STEM Professionals

33%

of the state's workforce in STEM jobs

48th

largest STEM workforce in the nation

STEM Drives Florida's Economy

\$447 Billion

amount STEM contributes to the state's economy

35.6%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$75.6 Billion

Federal tax revenue generated by STEM in Florida

\$33.2 Billion

State and local tax revenue generated by STEM in Florida

Georgia

Nearly 40% of Georgia's GDP is directly attributable to STEM. Georgia's STEM professionals—totaling 2.1 million—make up over a third of the state's total workforce. The majority of Georgia's STEM professionals do not hold a bachelor's degree.



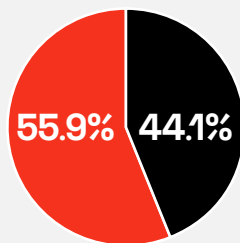
People of Science

The percentage of Georgia's STEM workforce without a bachelor's degree (55.9%) is greater than the national average (55.4%).

Georgia ranks 27th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree

Bachelor's degree and higher



2.1 Million

STEM Professionals

34%

of the state's workforce in STEM jobs

36th

largest STEM workforce in the nation

STEM Drives Georgia's Economy

\$266.7 Billion

amount STEM contributes to the state's economy

39%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$39.2 Billion

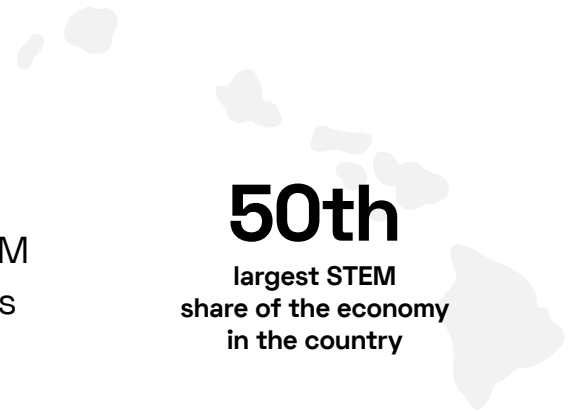
Federal tax revenue generated by STEM in Georgia

\$18.4 Billion

State and local tax revenue generated by STEM in Georgia

Hawaii

One-third of Hawaii's workforce—over 276,000 workers—are STEM professionals—the majority of which do not hold a bachelor's degree. Hawaii's STEM professionals have an outsized impact on the state's economy, generating 35% of Hawaii's GDP.



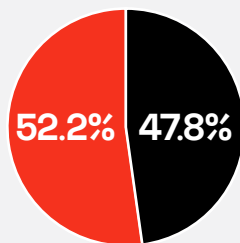
People of Science

The percentage of Hawaii's STEM workforce without a bachelor's degree (52.2%) is less than the national average (55.4%).

Hawaii ranks 48th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree

Less than a bachelor's degree

Bachelor's degree and higher



276,000

STEM Professionals

33%

of the state's workforce in STEM jobs

41st

largest STEM workforce in the nation

STEM Drives Hawaii's Economy

\$32 Billion

amount STEM contributes to the state's economy

35%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$5 Billion

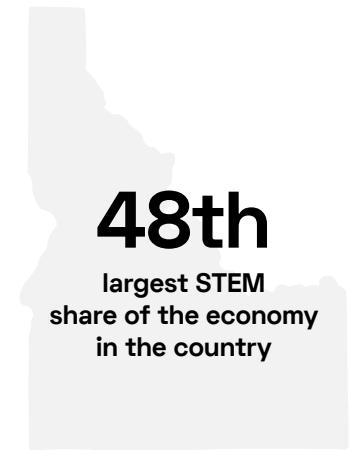
Federal tax revenue generated by STEM in Hawaii

\$2.2 Billion

State and local tax revenue generated by STEM in Hawaii

Idaho

With over 360,000 workers, one-third of Idaho's workforce are STEM professionals—the majority (57.4%) of which do not hold a bachelor's degree. STEM directly contributes \$35.4 billion (36.2% of state GDP) to Idaho's economy.



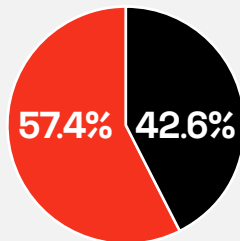
People of Science

The percentage of Idaho's STEM workforce without a bachelor's degree (57.4%) is greater than the national average (55.4%).

Idaho ranks 18th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree

Bachelor's degree and higher



361,000

STEM Professionals

33%

of the state's workforce in STEM jobs

46th

largest STEM workforce in the nation

STEM Drives Idaho's Economy

\$35.4 Billion

amount STEM contributes to the state's economy

36.2%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$6.2 Billion

Federal tax revenue generated by STEM in Idaho

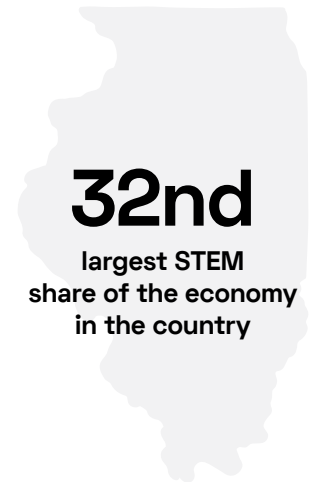
\$2.8 Billion

State and local tax revenue generated by STEM in Idaho

Illinois

STEM directly contributes over **\$372 billion** to Illinois's economy—that equals 39.4% of the state's GDP.

Illinois's 2.6 million STEM professionals comprise 34.3% of the state's total workforce.



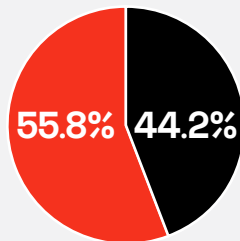
People of Science

The percentage of Illinois's STEM workforce without a bachelor's degree (55.8%) is greater than the national average (55.4%).

Illinois ranks 29th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a
bachelor's degree

Bachelor's degree
and higher



2.6 Million

STEM Professionals

34%

of the state's workforce in STEM jobs

23rd

largest STEM workforce in the nation

STEM Drives Illinois's Economy

\$372.5 Billion

amount STEM contributes
to the state's economy

39.4%

of the state's GDP
comes from STEM

STEM Produces Tax Revenue

\$51.5 Billion

Federal tax revenue generated
by STEM in Illinois

\$26 Billion

State and local tax revenue
generated by STEM in Illinois

Indiana

Indiana leads the nation in terms of the size of its STEM workforce and the percentage that STEM directly contributes to the state's GDP. With 1.4 million STEM professionals comprising 36% of the state's workforce, Indiana ranks 4th in the nation; the state ranks 3rd in terms of the percentage of its economy directly driven by STEM. Indiana also ranks 1st in the country for the percentage of its STEM workers without a bachelor's degree.



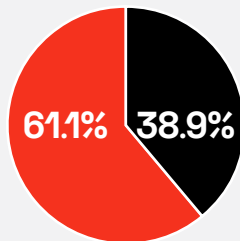
People of Science

The percentage of Indiana's STEM workforce without a bachelor's degree (61.1%) is greater than the national average (55.4%).

Indiana ranks 1st in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree

Bachelor's degree and higher



1.4 Million

STEM Professionals

36%

of the state's workforce in STEM jobs

4th

largest STEM workforce in the nation

STEM Drives Indiana's Economy

\$184 Billion

amount STEM contributes to the state's economy

44%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$24 Billion

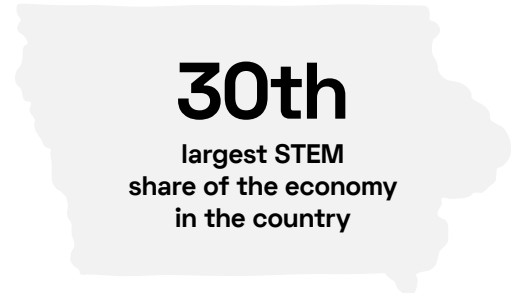
Federal tax revenue generated by STEM in Indiana

\$12 Billion

State and local tax revenue generated by STEM in Indiana

Iowa

Nearly 40%—\$85.7 billion—of Iowa’s GDP is directly driven by STEM. Iowa’s over 658,000 STEM professionals comprise nearly a third of the state’s workforce. Nearly six out of ten STEM professionals in Iowa do not have a bachelor’s degree.



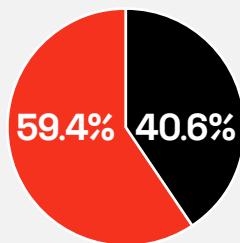
People of Science

The percentage of Iowa’s STEM workforce without a bachelor’s degree (59.4%) is greater than the national average (55.4%).

Iowa ranks 5th in the nation on the percent of its STEM workforce who have earned less than a bachelor’s degree.

Less than a bachelor’s degree

Bachelor’s degree and higher



658,500

STEM Professionals

32.6%

of the state’s workforce in STEM jobs

49th

largest STEM workforce in the nation

STEM Drives Iowa’s Economy

\$85.7 Billion

amount STEM contributes to the state’s economy

39.5%

of the state’s GDP comes from STEM

STEM Produces Tax Revenue

\$11.5 Billion

Federal tax revenue generated by STEM in Iowa

\$5.8 Billion

State and local tax revenue generated by STEM in Iowa

Kansas

The **645,000 STEM professionals in Kansas** comprise 34.3% of the state's total workforce. The majority of Kansas's STEM professionals (57.2%) do not hold a bachelor's degree. STEM contributes \$76.5 billion to the Kansas's economy—40% of the state's GDP.

28th
largest STEM share of the economy in the country

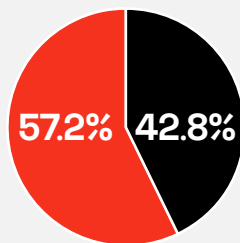
People of Science

The percentage of Kansas's STEM workforce without a bachelor's degree (57.2%) is greater than the national average (55.4%).

Kansas ranks 21st in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree

Bachelor's degree and higher



645,000

STEM Professionals

34%

of the state's workforce in STEM jobs

22nd

largest STEM workforce in the nation

STEM Drives Kansas's Economy

\$76.5 Billion

amount STEM contributes to the state's economy

40%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$11 Billion

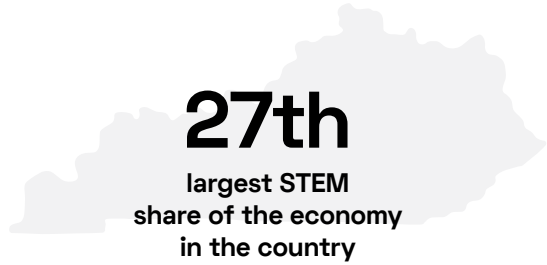
Federal tax revenue generated by STEM in Kansas

\$5.5 Billion

State and local tax revenue generated by STEM in Kansas

Kentucky

Nearly six out of ten (59.4%) of Kentucky's 861,000 STEM professionals do not hold a bachelor's degree. STEM is directly responsible for 40% of Kentucky's economy, contributing \$96.5 billion to the state's GDP.



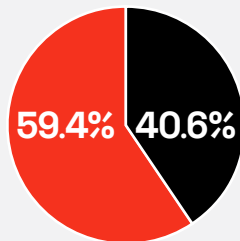
People of Science

The percentage of Kentucky's STEM workforce without a bachelor's degree (59.4%) is greater than the national average (55.4%).

Kentucky ranks 4th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree

Bachelor's degree and higher



861,000

STEM Professionals

34.4%

of the state's workforce in STEM jobs

21st

largest STEM workforce in the nation

STEM Drives Kentucky's Economy

\$96.5 Billion

amount STEM contributes to the state's economy

40%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$14.6 Billion

Federal tax revenue generated by STEM in Kentucky

\$7 Billion

State and local tax revenue generated by STEM in Kentucky

Louisiana

STEM directly contributes over \$108 billion to Louisiana's economy—over 41% of the state's GDP. The 876,000 STEM professionals in Louisiana comprise over 34% of the state's workforce.



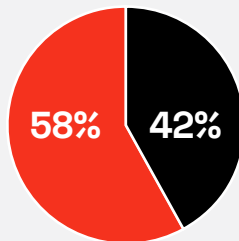
People of Science

The percentage of Louisiana's STEM workforce without a bachelor's degree (58%) is greater than the national average (55.4%).

Louisiana ranks 15th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree

Bachelor's degree and higher



867,000

STEM Professionals

34%

of the state's workforce in STEM jobs

32nd

largest STEM workforce in the nation

STEM Drives Louisiana's Economy

\$108.2 Billion

amount STEM contributes to the state's economy

41.4%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$14.7 Billion

Federal tax revenue generated by STEM in Louisiana

\$7.3 Billion

State and local tax revenue generated by STEM in Louisiana

Maine

STEM drives Maine's economy, directly contributing \$29.2 billion (36.6%) to the state's GDP. The over 278,000 STEM professionals in Maine comprise 34% of the state's total workforce. The majority of Maine's STEM professionals (56.6%) do not hold a bachelor's degree.



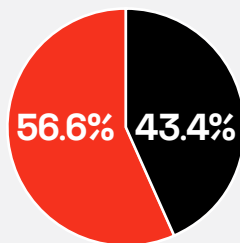
People of Science

The percentage of Maine's STEM workforce without a bachelor's degree (56.6%) is greater than the national average (55.4%).

Maine ranks 24th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree

Bachelor's degree and higher



278,500

STEM Professionals

34%

of the state's workforce in STEM jobs

35th

largest STEM workforce in the nation

STEM Drives Maine's Economy

\$29.2 Billion

amount STEM contributes to the state's economy

36.6%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$4.7 Billion

Federal tax revenue generated by STEM in Maine

\$2 Billion

State and local tax revenue generated by STEM in Maine

Maryland

With over 1.3 million STEM professionals, comprising over 35% of the state's workforce, Maryland ranks 9th in the country. STEM is directly responsible for 41% of Maryland's GDP—over \$189 billion.



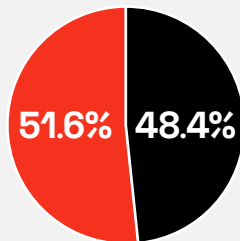
People of Science

The percentage of Maryland's STEM workforce without a bachelor's degree (51.6%) is less than the national average (55.4%).

Maryland ranks 49th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree

Bachelor's degree and higher



1.3 Million

STEM Professionals

35.5%

of the state's workforce in STEM jobs

9th

largest STEM workforce in the nation

STEM Drives Maryland's Economy

\$189.4 Billion

amount STEM contributes to the state's economy

41%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$23.3 Billion

Federal tax revenue generated by STEM in Maryland

\$11 Billion

State and local tax revenue generated by STEM in Maryland

Massachusetts

Massachusetts has the third largest STEM workforce and second most STEM intensive economy in the country. The 1.7 million STEM professionals in Massachusetts comprise 37% of the state's workforce. STEM contributes \$294 billion—44.6%—to the state's GDP.



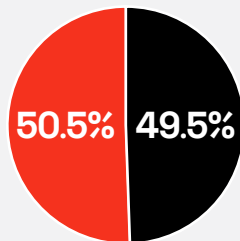
People of Science

The percentage of Massachusetts's STEM workforce without a bachelor's degree (50.5%) is less than the national average (55.4%).

Massachusetts ranks 50th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree

Bachelor's degree and higher



1.7 Million

STEM Professionals

37%

of the state's workforce in STEM jobs

3rd

largest STEM workforce in the nation

STEM Drives Massachusetts's Economy

\$294 Billion

amount STEM contributes to the state's economy

44.6%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$34.7 Billion

Federal tax revenue generated by STEM in Massachusetts

\$17.7 Billion

State and local tax revenue generated by STEM in Massachusetts

Michigan

With over 2 million STEM professionals, comprising over 37% of the state's workforce, Michigan has the 2nd largest STEM workforce in the nation. STEM directly contributes \$247.5 billion (42.6%) to Michigan's GDP, the 8th largest share in the country.



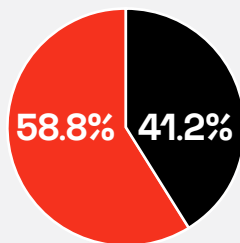
People of Science

The percentage of Michigan's STEM workforce without a bachelor's degree (58.8%) is greater than the national average (55.4%).

Michigan ranks 10th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree

Bachelor's degree and higher



2 Million

STEM Professionals

37%

of the state's workforce in STEM jobs

2nd

largest STEM workforce in the nation

STEM Drives Michigan's Economy

\$247.5 Billion

amount STEM contributes to the state's economy

42.6%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$34 Billion

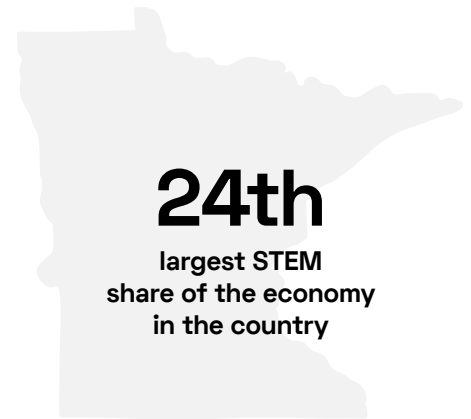
Federal tax revenue generated by STEM in Michigan

\$16.5 Billion

State and local tax revenue generated by STEM in Michigan

Minnesota

Minnesota's 1.3 million STEM professionals comprise 35% of the state's total workforce. The majority of the state's STEM professionals (56%) do not hold a bachelor's degree. STEM is directly responsible for 40.6% of Minnesota's GDP.



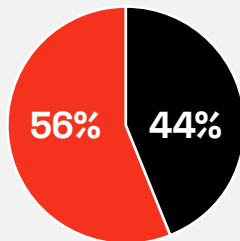
People of Science

The percentage of Minnesota's STEM workforce without a bachelor's degree (56%) is greater than the national average (55.4%).

Minnesota ranks 26th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree

Bachelor's degree and higher



1.3 Million

STEM Professionals

35%

of the state's workforce in STEM jobs

14th

largest STEM workforce in the nation

STEM Drives Minnesota's Economy

\$169.5 Billion

amount STEM contributes to the state's economy

40.6%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$23.8 Billion

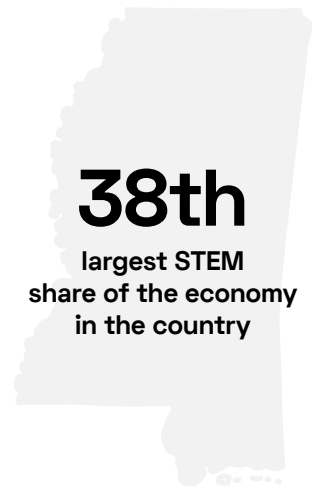
Federal tax revenue generated by STEM in Minnesota

\$11.7 Billion

State and local tax revenue generated by STEM in Minnesota

Mississippi

STEM directly contributes \$49.8 billion (39%) to Mississippi's economy. Mississippi's over 517,000 STEM professionals comprise one-third of the state's total workforce. Six out of ten STEM professionals in Mississippi do not hold a bachelor's degree.



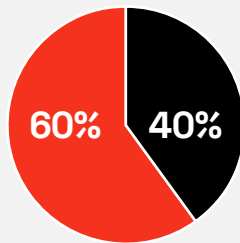
People of Science

The percentage of Mississippi's STEM workforce without a bachelor's degree (60%) is greater than the national average (55.4%).

Mississippi ranks 2nd in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree

Bachelor's degree and higher



517,000

STEM Professionals

33%

of the state's workforce in STEM jobs

45th

largest STEM workforce in the nation

STEM Drives Mississippi's Economy

\$49.8 Billion

amount STEM contributes to the state's economy

39%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$8.1 Billion

Federal tax revenue generated by STEM in Mississippi

\$3.6 Billion

State and local tax revenue generated by STEM in Mississippi

Missouri

STEM has an outsized impact on Missouri's economy with nearly 40% of the state's GDP directly attributed to STEM. Missouri is home to over 1.3 million STEM professionals—comprising over 34% of the state's total workforce.



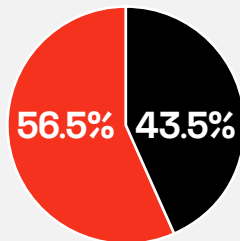
People of Science

The percentage of Missouri's STEM workforce without a bachelor's degree (56.5%) is greater than the national average (55.4%).

Missouri ranks 25th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree

Bachelor's degree and higher



1.3 Million

STEM Professionals

34%

of the state's workforce in STEM jobs

24th

largest STEM workforce in the nation

STEM Drives Missouri's Economy

\$143.8 Billion

amount STEM contributes to the state's economy

39.7%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$22.1 Billion

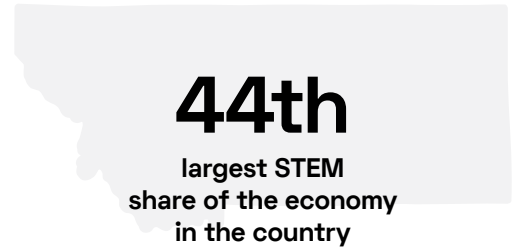
Federal tax revenue generated by STEM in Missouri

\$10.3 Billion

State and local tax revenue generated by STEM in Missouri

Montana

STEM professionals account for just under a third of Montana's workforce—the majority of which do not have a bachelor's degree (57%). STEM is responsible for over \$22 billion of Montana's GDP—37% of the state's economy.



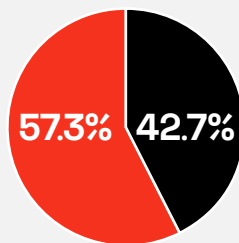
People of Science

The percentage of Montana's STEM workforce without a bachelor's degree (57.3%) is greater than the national average (55.4%).

Montana ranks 19th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a
bachelor's degree

Bachelor's degree
and higher



221,000

STEM Professionals

32%

of the state's workforce in STEM jobs

50th

largest STEM workforce in the nation

STEM Drives Montana's Economy

\$22.1 Billion

amount STEM contributes
to the state's economy

37.1%

of the state's GDP
comes from STEM

STEM Produces Tax Revenue

\$3.8 Billion

Federal tax revenue generated
by STEM in Montana

\$1.7 Billion

State and local tax revenue
generated by STEM in Montana

Nebraska

STEM professionals in Nebraska make up about a third of the state's workforce. Nearly 57% of these workers do not have a bachelor's degree. A third of Nebraska's economy—\$56 billion—is directly attributed to STEM.

39th
largest STEM
share of the economy
in the country

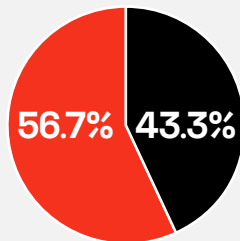
People of Science

The percentage of Nebraska's STEM workforce without a bachelor's degree (56.7%) is greater than the national average (55.4%).

Nebraska ranks 23rd in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a
bachelor's degree

Bachelor's degree
and higher



432,000

STEM Professionals

33%

of the state's workforce in STEM jobs

47th

largest STEM workforce in the nation

STEM Drives
Nebraska's Economy

\$56.1 Billion

amount STEM contributes
to the state's economy

38.7%

of the state's GDP
comes from STEM

STEM Produces
Tax Revenue

\$7.9 Billion

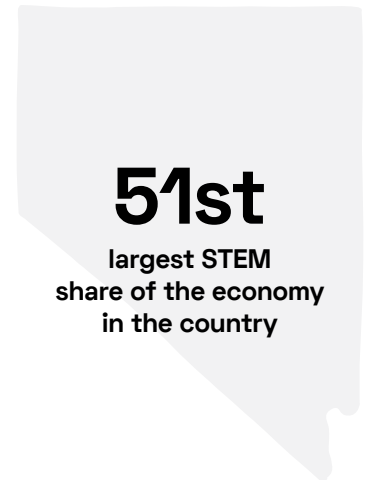
Federal tax revenue generated
by STEM in Nebraska

\$4 Billion

State and local tax revenue
generated by STEM in Nebraska

Nevada

STEM professionals comprise nearly 30% of Nevada's workforce—the majority of which (57.2%) do not hold a bachelor's degree. STEM generates \$65 billion of Nevada's GDP—comprising more than one-third of the state's economy.



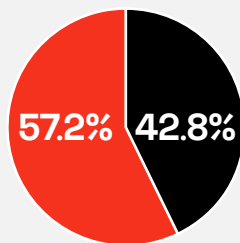
People of Science

The percentage of Nevada's STEM workforce without a bachelor's degree (57.2%) is greater than the national average (55.4%).

Nevada ranks 20th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree

Bachelor's degree and higher



529,000

STEM Professionals

30%

of the state's workforce in STEM jobs

51st

largest STEM workforce in the nation

STEM Drives Nevada's Economy

\$65 Billion

amount STEM contributes to the state's economy

33.7%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$10.8 Billion

Federal tax revenue generated by STEM in Nevada

\$4.8 Billion

State and local tax revenue generated by STEM in Nevada

New Hampshire

With over 36% of the state's workforce employed in STEM professions, New Hampshire has the 5th largest STEM workforce in the country. At \$42.6 billion, STEM accounts for nearly 41% of the state's GDP.



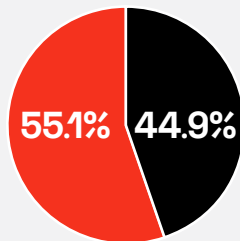
People of Science

The percentage of New Hampshire's STEM workforce without a bachelor's degree (55.1%) is less than the national average (55.4%).

New Hampshire ranks 34th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a
bachelor's degree

Bachelor's degree
and higher



314,000

STEM Professionals

36%

of the state's workforce in STEM jobs

5th

largest STEM workforce in the nation

**STEM Drives
New Hampshire's Economy**

\$42.6 Billion

amount STEM contributes
to the state's economy

40.7%

of the state's GDP
comes from STEM

**STEM Produces
Tax Revenue**

\$6 Billion

Federal tax revenue generated
by STEM in New Hampshire

\$2.9 Billion

State and local tax revenue
generated by STEM in New Hampshire

New Jersey

The **1.8 million STEM professionals in New Jersey** account for over a third of state's workforce. STEM directly contributes \$267.5 billion—39%—to the state's economy.



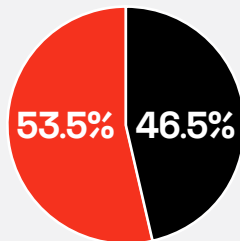
People of Science

The percentage of New Jersey's STEM workforce without a bachelor's degree (53.5%) is less than the national average (55.4%).

New Jersey ranks 41st in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a
bachelor's degree

Bachelor's degree
and higher



1.8 Million

STEM Professionals

34%

of the state's workforce in STEM jobs

25th

largest STEM workforce in the nation

STEM Drives New Jersey's Economy

\$267.5 Billion

amount STEM contributes
to the state's economy

39%

of the state's GDP
comes from STEM

STEM Produces Tax Revenue

\$37.8 Billion

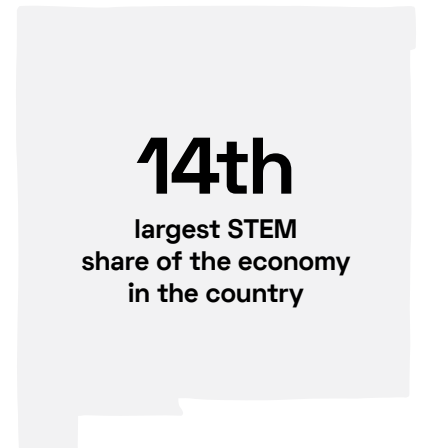
Federal tax revenue generated
by STEM in New Jersey

\$18.6 Billion

State and local tax revenue
generated by STEM in New Jersey

New Mexico

New Mexico ranks 14th in the nation for percentage of its state's economy directly attributed to STEM activity. New Mexico is home to over three hundred-sixty thousand STEM professionals—who comprise nearly 34% of the state's workforce.



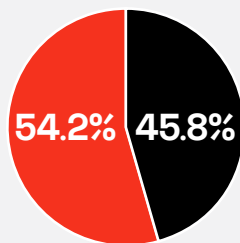
People of Science

The percentage of New Mexico's STEM workforce without a bachelor's degree (54.2%) is less than the national average (55.4%).

New Mexico ranks 38th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree

Bachelor's degree and higher



363,000

STEM Professionals

34%

of the state's workforce in STEM jobs

34th

largest STEM workforce in the nation

**STEM Drives
New Mexico's Economy**

\$49.4 Billion

amount STEM contributes to the state's economy

41.7%

of the state's GDP comes from STEM

**STEM Produces
Tax Revenue**

\$5.9 Billion

Federal tax revenue generated by STEM in New Mexico

\$2.7 Billion

State and local tax revenue generated by STEM in New Mexico

New York

Nearly four million New Yorkers—33% of the state’s workforce—are STEM professionals. STEM contributes over \$700 billion to New York’s economy, comprising nearly 39% of the state’s GDP.



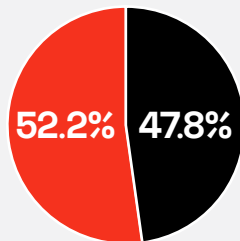
People of Science

The percentage of New York’s STEM workforce without a bachelor’s degree (52.2%) is less than the national average (55.4%).

New York ranks 47th in the nation on the percent of its STEM workforce who have earned less than a bachelor’s degree.

Less than a
bachelor’s degree

Bachelor’s degree
and higher



3.9 Million

STEM Professionals

33%

of the state’s workforce in STEM jobs

40th

largest STEM workforce in the nation

STEM Drives New York’s Economy

\$716.8 Billion

amount STEM contributes
to the state’s economy

38.6%

of the state’s GDP
comes from STEM

STEM Produces Tax Revenue

\$89.8 Billion

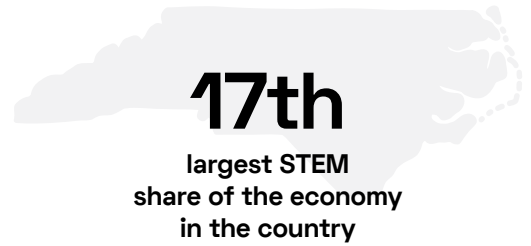
Federal tax revenue generated
by STEM in New York

\$47.2 Billion

State and local tax revenue
generated by STEM in New York

North Carolina

With over 2 million STEM professionals employed in the state, North Carolina has the 20th largest STEM workforce in the nation. Nearly 42% of the state's economy—\$274 billion—is directly attributed to STEM activity in North Carolina.



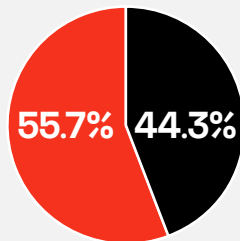
People of Science

The percentage of North Carolina's STEM workforce without a bachelor's degree (55.7%) is greater than the national average (55.4%).

North Carolina ranks 31st in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a
bachelor's degree

Bachelor's degree
and higher



2.1 Million

STEM Professionals

35%

of the state's workforce in STEM jobs

20th

largest STEM workforce in the nation

STEM Drives North Carolina's Economy

\$274 Billion

amount STEM contributes
to the state's economy

41.5%

of the state's GDP
comes from STEM

STEM Produces Tax Revenue

\$37.2 Billion

Federal tax revenue generated
by STEM in North Carolina

\$17.4 Billion

State and local tax revenue
generated by STEM in North Carolina

North Dakota

Nearly 42% of North Dakota's economy is attributed to STEM making North Dakota the 13th largest STEM economy in the country. The 188,000 STEM professionals in the state account for nearly 34% of North Dakota's total workforce.

13th
largest STEM share of the economy in the country

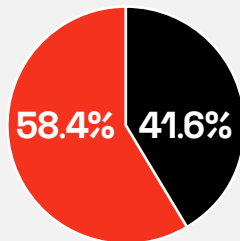
People of Science

The percentage of North Dakota's STEM workforce without a bachelor's degree (58.4%) is greater than the national average (55.4%).

North Dakota ranks 12th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree

Bachelor's degree and higher



188,000

STEM Professionals

34%

of the state's workforce in STEM jobs

37th

largest STEM workforce in the nation

STEM Drives North Dakota's Economy

\$26.3 Billion

amount STEM contributes to the state's economy

41.7%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$3.3 Billion

Federal tax revenue generated by STEM in North Dakota

\$1.7 Billion

State and local tax revenue generated by STEM in North Dakota

Ohio

With over 2.4 million STEM professionals, Ohio has the 8th largest STEM workforce in the nation. STEM also directly contributes \$316.6 billion to Ohio's economy—equal to nearly 42% of the state's GDP.



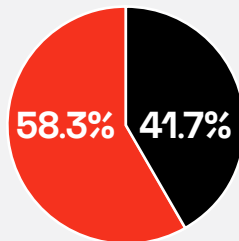
People of Science

The percentage of Ohio's STEM workforce without a bachelor's degree (58.3%) is greater than the national average (55.4%).

Ohio ranks 13th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree

Bachelor's degree and higher



2.4 Million

STEM Professionals

36%

of the state's workforce in STEM jobs

8th

largest STEM workforce in the nation

STEM Drives Ohio's Economy

\$316.6 Billion

amount STEM contributes to the state's economy

41.5%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$42.2 Billion

Federal tax revenue generated by STEM in Ohio

\$20.6 Billion

State and local tax revenue generated by STEM in Ohio

Oklahoma

With just over 42% of the state's GDP directly attributed to STEM, Oklahoma's economy ranks 10th in the country for the percentage of its GDP driven by STEM. STEM also has an out-sized impact on Oklahoma's employment—34% of the state's workforce are STEM professionals.

10th
largest STEM
share of the economy
in the country

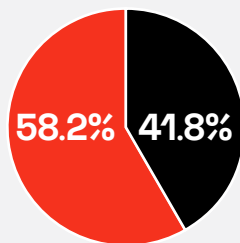
People of Science

The percentage of Oklahoma's STEM workforce without a bachelor's degree (58.2%) is greater than the national average (55.4%).

Oklahoma ranks 14th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a
bachelor's degree

Bachelor's degree
and higher



762,000

STEM Professionals

34%

of the state's workforce in STEM jobs

33rd

largest STEM workforce in the nation

**STEM Drives
Oklahoma's Economy**

\$92.2 Billion

amount STEM contributes
to the state's economy

42.1%

of the state's GDP
comes from STEM

**STEM Produces
Tax Revenue**

\$13 Billion

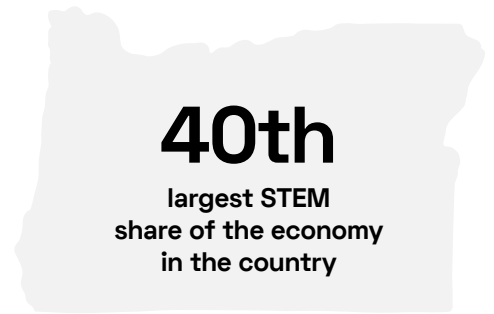
Federal tax revenue generated
by STEM in Oklahoma

\$6.1 Billion

State and local tax revenue
generated by STEM in Oklahoma

Oregon

One-third of Oregon's workforce—826,000 people—are STEM professionals. STEM is directly responsible for nearly 39% of the state's economy accounting for \$106 billion of Oregon's GDP.



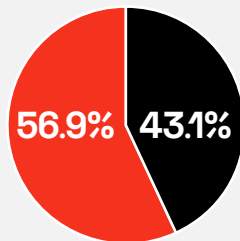
People of Science

The percentage of Oregon's STEM workforce without a bachelor's degree (56.9%) is greater than the national average (55.4%).

Oregon ranks 22nd in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree

Bachelor's degree and higher



826,000

STEM Professionals

33%

of the state's workforce in STEM jobs

42th

largest STEM workforce in the nation

STEM Drives Oregon's Economy

\$106 Billion

amount STEM contributes to the state's economy

38.7%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$15.6 Billion

Federal tax revenue generated by STEM in Oregon

\$7.3 Billion

State and local tax revenue generated by STEM in Oregon

Pennsylvania

STEM professionals comprise 35% of Pennsylvania's workforce making it the 18th largest STEM workforce in the country. STEM directly contributes over \$350 billion to the state's economy, equal to 41% of Pennsylvania's GDP.

21st
largest STEM share of the economy in the country

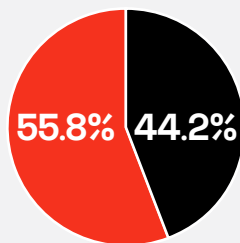
People of Science

The percentage of Pennsylvania's STEM workforce without a bachelor's degree (55.8%) is greater than the national average (55.4%).

Pennsylvania ranks 30th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree

Bachelor's degree and higher



2.6 Million

STEM Professionals

35%

of the state's workforce in STEM jobs

18th

largest STEM workforce in the nation

STEM Drives Pennsylvania's Economy

\$350.6 Billion

amount STEM contributes to the state's economy

41%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$49.5 Billion

Federal tax revenue generated by STEM in Pennsylvania

\$24 Billion

State and local tax revenue generated by STEM in Pennsylvania

Rhode Island

Rhode Island has the 16th largest STEM workforce in the nation—with over 218,000 STEM professionals accounting for 35% of the state’s workers. STEM also directly contributes \$26.6 billion to the state’s economy an amount equal to 39% of Rhode Island’s GDP.



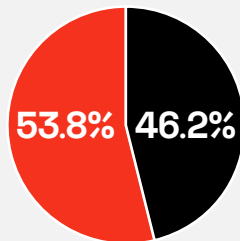
People of Science

The percentage of Rhode Island’s STEM workforce without a bachelor’s degree (53.8%) is less than the national average (55.4%).

Rhode Island ranks 40th in the nation on the percent of its STEM workforce who have earned less than a bachelor’s degree.

Less than a bachelor’s degree

Bachelor’s degree and higher



218,000

STEM Professionals

35%

of the state’s workforce in STEM jobs

16th

largest STEM workforce in the nation

STEM Drives Rhode Island’s Economy

\$26.6 Billion

amount STEM contributes to the state’s economy

39%

of the state’s GDP comes from STEM

STEM Produces Tax Revenue

\$3.9 Billion

Federal tax revenue generated by STEM in Rhode Island

\$1.8 Billion

State and local tax revenue generated by STEM in Rhode Island

South Carolina

The 960,000 STEM professionals in South Carolina comprise 34% of the state's total workforce. The vast majority of STEM professionals in the state—nearly 59%—do not hold a bachelor's degree. STEM activity is directly responsible for 39% of South Carolina's GDP.



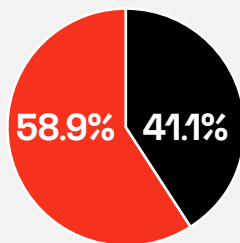
People of Science

The percentage of South Carolina's STEM workforce without a bachelor's degree (58.9%) is greater than the national average (55.4%).

South Carolina ranks 8th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree

Bachelor's degree and higher



960,000

STEM Professionals

34%

of the state's workforce in STEM jobs

26th

largest STEM workforce in the nation

STEM Drives South Carolina's Economy

\$105.5 Billion

amount STEM contributes to the state's economy

39%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$16.3 Billion

Federal tax revenue generated by STEM in South Carolina

\$7.4 Billion

State and local tax revenue generated by STEM in South Carolina

South Dakota

South Dakota's over 201,000 STEM professionals comprise one-third of the state's total workforce. The majority of the state's STEM professionals do not hold a bachelor's degree. STEM directly contributes \$23 billion to the state's economy—equal to 37% of South Dakota's GDP.

45th
largest STEM share of the economy in the country

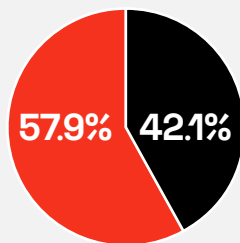
People of Science

The percentage of South Dakota's STEM workforce without a bachelor's degree (57.9%) is greater than the national average (55.4%).

South Dakota ranks 16th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree

Bachelor's degree and higher



201,000

STEM Professionals

33%

of the state's workforce in STEM jobs

44th

largest STEM workforce in the nation

STEM Drives South Dakota's Economy

\$23 Billion

amount STEM contributes to the state's economy

37%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$3.6 Billion

Federal tax revenue generated by STEM in South Dakota

\$1.8 Billion

State and local tax revenue generated by STEM in South Dakota

Tennessee

The **1.4 million STEM professionals in Tennessee** comprise 34% of the state's total workforce.

Tennessee ranks 11th in the nation in terms of the percentage of its STEM professionals who do not hold a bachelor's degree.



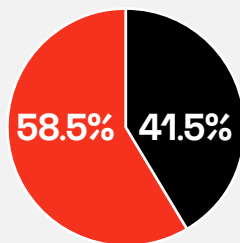
People of Science

The percentage of Tennessee's STEM workforce without a bachelor's degree (58.5%) is greater than the national average (55.4%).

Tennessee ranks 11th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a
bachelor's degree

Bachelor's degree
and higher



1.4 Million

STEM Professionals

34%

of the state's workforce in STEM jobs

31st

largest STEM workforce in the nation

**STEM Drives
Tennessee's Economy**

\$172.3 Billion

amount STEM contributes
to the state's economy

39.5%

of the state's GDP
comes from STEM

**STEM Produces
Tax Revenue**

\$26 Billion

Federal tax revenue generated
by STEM in Tennessee

\$12.4 Billion

State and local tax revenue
generated by STEM in Tennessee

Texas

With over **\$878 billion** contributed to the state's economy, equal to 43% of its GDP, Texas has the 7th largest STEM economy in the country. The 6 million Texans who are employed in STEM jobs comprise 34% of the state's workforce.



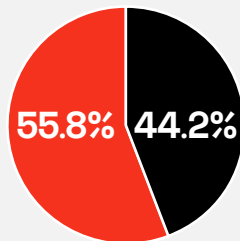
People of Science

The percentage of Texas's STEM workforce without a bachelor's degree (55.8%) is greater than the national average (55.4%).

Texas ranks 28th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree

Bachelor's degree and higher



6 Million

STEM Professionals

34%

of the state's workforce in STEM jobs

30th

largest STEM workforce in the nation

STEM Drives Texas's Economy

\$878 Billion

amount STEM contributes to the state's economy

43%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$112.7 Billion

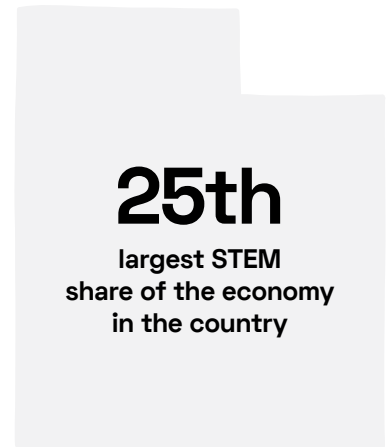
Federal tax revenue generated by STEM in Texas

\$56 Billion

State and local tax revenue generated by STEM in Texas

Utah

With over 35% of the state's workforce employed in STEM jobs, Utah has the 13th largest STEM workforce in the nation. STEM directly contributes near \$92 billion to Utah's economy—40% of the state's GDP.



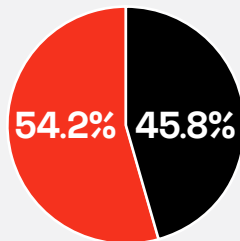
People of Science

The percentage of Utah's STEM workforce without a bachelor's degree (54.2%) is less than the national average (55.4%).

Utah ranks 37th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree

Bachelor's degree and higher



761,000

STEM Professionals

35%

of the state's workforce in STEM jobs

13th

largest STEM workforce in the nation

STEM Drives Utah's Economy

\$91.5 Billion

amount STEM contributes to the state's economy

40%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$12.8 Billion

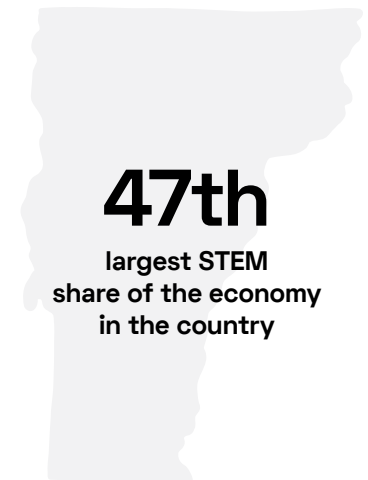
Federal tax revenue generated by STEM in Utah

\$6 Billion

State and local tax revenue generated by STEM in Utah

Vermont

The 140,000 STEM professionals in Vermont comprise 34% of the state's total workforce. The majority of Vermont's STEM professionals (55.4%) who do not hold a bachelor's degree is equal to the national average.



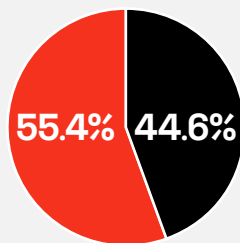
People of Science

The percentage of Vermont's STEM workforce without a bachelor's degree (55.4%) is equal to the national average (55.4%).

Vermont ranks 32nd in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree

Bachelor's degree and higher



140,000

STEM Professionals

34%

of the state's workforce in STEM jobs

27th

largest STEM workforce in the nation

STEM Drives Vermont's Economy

\$14 Billion

amount STEM contributes to the state's economy

36.4%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$2.3 Billion

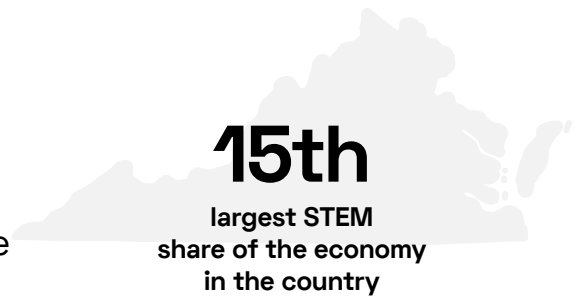
Federal tax revenue generated by STEM in Vermont

\$1 Billion

State and local tax revenue generated by STEM in Vermont

Virginia

Virginia ranks in the top of the nation for percentage of its workforce working in STEM (6th) and share of its economy directly driven by STEM (15th). Virginia's 1.9 million STEM professionals account for 36% of the state's workforce and STEM contributes \$255 billion to the state's economy, equal to 42% of Virginia's GDP.



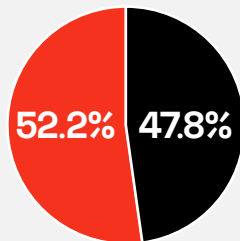
People of Science

The percentage of Virginia's STEM workforce without a bachelor's degree (52.2%) is less than the national average (55.4%).

Virginia ranks 46th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a
bachelor's degree

Bachelor's degree
and higher



1.9 Million

STEM Professionals

36%

of the state's workforce in STEM jobs

6th

largest STEM workforce in the nation

STEM Drives Virginia's Economy

\$255 Billion

amount STEM contributes
to the state's economy

42%

of the state's GDP
comes from STEM

STEM Produces Tax Revenue

\$33.5 Billion

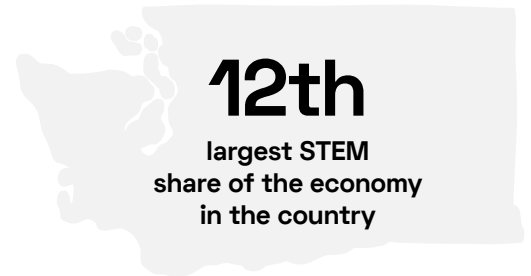
Federal tax revenue generated
by STEM in Virginia

\$15.8 Billion

State and local tax revenue
generated by STEM in Virginia

Washington

STEM contributes \$283 billion to Washington's economy—42% of the state's GDP—making Washington the 12th largest STEM economy in the nation. The 1.56 million STEM professionals in the state comprise 35% of Washington's workforce.



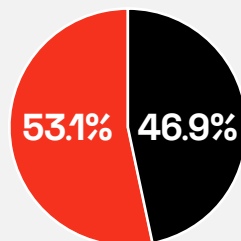
People of Science

The percentage of Washington's STEM workforce without a bachelor's degree (53.1%) is less than the national average (55.4%).

Washington ranks 43rd in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a
bachelor's degree

Bachelor's degree
and higher



1.56 Million

STEM Professionals

35%

of the state's workforce in STEM jobs

17th

largest STEM workforce in the nation

STEM Drives Washington's Economy

\$283 Billion

amount STEM contributes
to the state's economy

42%

of the state's GDP
comes from STEM

STEM Produces Tax Revenue

\$31.6 Billion

Federal tax revenue generated
by STEM in Washington

\$16.6 Billion

State and local tax revenue
generated by STEM in Washington

West Virginia

With 43% of the state's GDP directly attributed to STEM—nearly \$38 billion—West Virginia has the 6th largest STEM economy in the country. The nearly 300,000 STEM professionals in the state comprise 35% of the state's workforce.



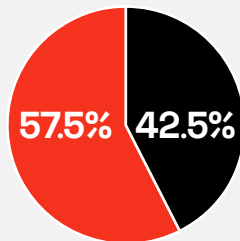
People of Science

The percentage of West Virginia's STEM workforce without a bachelor's degree (57.5%) is greater than the national average (55.4%).

West Virginia ranks 17th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a bachelor's degree

Bachelor's degree and higher



299,000

STEM Professionals

35%

of the state's workforce in STEM jobs

15th

largest STEM workforce in the nation

STEM Drives West Virginia's Economy

\$37.8 Billion

amount STEM contributes to the state's economy

43%

of the state's GDP comes from STEM

STEM Produces Tax Revenue

\$4.8 Billion

Federal tax revenue generated by STEM in West Virginia

\$2.3 Billion

State and local tax revenue generated by STEM in West Virginia

Wisconsin

With over 1.3 million STEM professionals—over 35% of the state’s workforce—Wisconsin has the 10th largest STEM workforce in the country. Nearly six out ten of Wisconsin’s STEM professionals do not hold a bachelor’s degree—the 3rd highest percentage in the nation.



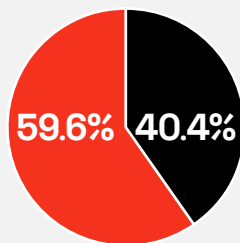
People of Science

The percentage of Wisconsin’s STEM workforce without a bachelor’s degree (59.6%) is greater than the national average (55.4%).

Wisconsin ranks 3rd in the nation on the percent of its STEM workforce who have earned less than a bachelor’s degree.

Less than a bachelor’s degree

Bachelor’s degree and higher



1.3 Million

STEM Professionals

35.4%

of the state’s workforce in STEM jobs

10th

largest STEM workforce in the nation

STEM Drives Wisconsin’s Economy

\$151.5 Billion

amount STEM contributes to the state’s economy

41%

of the state’s GDP comes from STEM

STEM Produces Tax Revenue

\$21.8 Billion

Federal tax revenue generated by STEM in Wisconsin

\$10.5 Billion

State and local tax revenue generated by STEM in Wisconsin

Wyoming

STEM directly contributes \$18.3 billion to Wyoming's economy—43.5% of the state's GDP—making Wyoming the 4th largest STEM economy in the country. Wyoming's 129,000 STEM professionals comprise one-third of the state's workforce.

4th
largest STEM
share of the economy
in the country

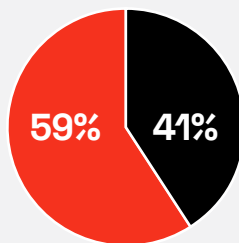
People of Science

The percentage of Wyoming's STEM workforce without a bachelor's degree (59%) is greater than the national average (55.4%).

Wyoming ranks 7th in the nation on the percent of its STEM workforce who have earned less than a bachelor's degree.

Less than a
bachelor's degree

Bachelor's degree
and higher



129,000

STEM Professionals

33%

of the state's workforce in STEM jobs

43rd

largest STEM workforce in the nation

STEM Drives
Wyoming's Economy

\$18.3 Billion

amount STEM contributes
to the state's economy

43.5%

of the state's GDP
comes from STEM

STEM Produces
Tax Revenue

\$2.2 Billion

Federal tax revenue generated
by STEM in Wyoming

\$1.1 Billion

State and local tax revenue
generated by STEM in Wyoming

Aggregate Data

Table 1
Impacts of STEM on the U.S. Economy

Metric	Direct STEM	Indirect	Induced	Total Supported by STEM	U.S. Economy	Direct STEM Percent of U.S. Economy	Total STEM Supported % of U.S. Economy
Employment	67,105,479	30,220,206	49,040,489	146,366,174	195,672,800	34.3%	74.8%
Sales Output	\$17,419,608,867,584	\$6,710,869,223,096	\$7,819,167,764,892	\$31,949,645,855,572	\$40,716,417,742,635	42.8%	78.5%
Gross Domestic Product	\$9,446,345,421,131	\$3,525,234,669,881	\$4,348,859,180,606	\$17,320,439,271,619	\$23,315,081,000,000	40.5%	74.3%
Labor Income	\$6,151,159,497,355	\$2,195,158,548,845	\$2,752,642,600,963	\$11,098,960,647,163	\$14,302,708,000,000	43.0%	77.6%

Table 2
STEM Contributions to Federal, State and Local Tax Revenues

Metric	Direct STEM	Indirect	Induced	Total Supported by STEM
Federal Tax Revenues	\$1,273,925,314,590	\$802,313,040,998	\$910,685,202,822	\$2,986,923,558,409
State and Local Tax Revenues	\$622,589,644,770	\$546,392,547,640	\$824,434,535,421	\$1,993,416,727,831

Table 3
STEM Jobs Pay More, are More Productive and Contribute More to U.S. GDP

Metric	Direct STEM Employment	Non-STEM Employment	U.S. Total (STEM and Non-STEM)
Mean Sales Output per Job	\$259,585	\$177,801	\$208,084
Mean GDP per Job	\$140,769	\$121,579	\$119,153
Mean Labor Income per Job	\$91,664	\$64,976	\$73,095

Table 4
Percent of U.S. Workers by Degree Level
who are STEM Professionals

U.S. Employment	< High School Diploma	High School Diploma or GED	Some College, No Degree	Associate's Degree	Bachelor's Degree	Master's Degree	Doctoral or Professional Degree
STEM Jobs	3,313,323	13,084,592	12,987,876	7,800,744	18,296,410	8,066,073	3,556,462
Non-STEM Jobs	13,990,891	37,589,399	29,298,340	11,274,334	24,932,785	8,891,318	2,590,253
Total	17,304,214	50,673,991	42,286,216	19,075,078	43,229,196	16,957,390	6,146,715
STEM (%)	19.1%	25.8%	30.7%	40.9%	42.3%	47.6%	57.9%
Non-STEM (%)	80.9%	74.2%	69.3%	59.1%	57.7%	52.4%	42.1%

Table 5
STEM Professionals by Level of
Educational Attainment

Educational Attainment	STEM Jobs	Non-STEM Jobs	Total U.S. Jobs	Percent STEM Jobs	Percent Non-STEM Jobs	Percent Total U.S. Jobs
< High School Diploma	3,313,323	13,990,891	17,304,214	4.9%	10.9%	8.8%
High School Diploma or GED	13,084,592	37,589,399	50,673,991	19.5%	29.2%	25.9%
Some College, No Degree	12,987,876	29,298,340	42,286,216	19.4%	22.8%	21.6%
Associate's Degree	7,800,744	11,274,334	19,075,078	11.6%	8.8%	9.7%
Bachelor's Degree	18,296,410	24,932,785	43,229,196	27.3%	19.4%	22.1%
Master's Degree	8,066,073	8,891,318	16,957,390	12.0%	6.9%	8.7%
Doctoral or Professional Degree	3,556,462	2,590,253	6,146,715	5.3%	2.0%	3.1%
Total U.S. Employment	67,105,479	128,567,321	195,672,800			
Workers with Less than Bachelor's	37,186,534	92,152,965	129,339,499	55.4%	71.7%	66.1%
Workers with a Bachelor's or more	29,918,945	36,414,356	66,333,301	44.6%	28.3%	33.9%

Table 6
STEM Contributions to State GDP (Ranked)

Rank	State	Direct STEM Contribution to State GDP	Percent of State GDP Directly Attributed to STEM
1	AK	\$26,115,466,024	45.3%
2	MA	\$294,089,721,546	44.6%
3	IN	\$183,930,178,460	43.6%
4	WY	\$18,262,371,302	43.5%
5	DC	\$69,120,301,153	43.2%
6	WV	\$37,836,300,130	43.1%
7	TX	\$878,168,227,327	43.0%
8	MI	\$247,502,063,016	42.6%
9	CT	\$128,356,602,075	42.2%
10	OK	\$92,193,569,262	42.1%
11	AL	\$111,599,809,408	42.0%
12	WA	\$282,957,183,232	41.8%
13	ND	\$26,316,660,098	41.7%
14	NM	\$49,390,155,279	41.7%
15	VA	\$254,791,512,594	41.6%
16	CA	\$1,411,606,096,509	41.6%
17	NC	\$274,067,227,143	41.5%
18	OH	\$316,562,913,884	41.5%
19	LA	\$108,239,432,719	41.4%
20	MD	\$189,439,983,935	41.2%
21	PA	\$350,575,696,861	40.9%
22	WI	\$151,524,541,189	40.8%
23	NH	\$42,637,172,678	40.7%
24	MN	\$169,454,475,188	40.6%
25	UT	\$91,457,291,454	40.2%

Table 6
STEM Contributions to State GDP (Ranked)
 Continued

Rank	State	Direct STEM Contribution to State GDP	Percent of State GDP Directly Attributed to STEM
26	CO	\$175,834,329,173	40.1%
27	KY	\$96,463,492,411	40.1%
28	KS	\$76,551,237,293	39.9%
29	MO	\$143,815,902,772	39.7%
30	IA	\$85,680,946,286	39.5%
31	TN	\$172,342,336,455	39.5%
32	IL	\$372,519,902,206	39.4%
33	AZ	\$166,307,165,127	39.2%
34	RI	\$26,629,170,010	39.1%
35	NJ	\$267,525,789,450	39.0%
36	GA	\$266,652,152,639	38.8%
37	SC	\$105,496,298,190	38.8%
38	MS	\$49,837,095,194	38.8%
39	NE	\$56,133,110,195	38.7%
40	OR	\$105,832,971,885	38.7%
41	NY	\$716,836,107,712	38.6%
42	DE	\$31,222,974,665	38.6%
43	AR	\$57,117,786,885	38.0%
44	MT	\$22,133,940,186	37.1%
45	SD	\$22,956,052,160	36.9%
46	ME	\$29,164,789,482	36.6%
47	VT	\$13,954,185,337	36.4%
48	ID	\$35,359,202,624	36.2%
49	FL	\$446,735,014,784	35.6%
50	HI	\$32,092,624,328	35.3%
51	NV	\$64,955,891,218	33.7%

Table 7
Direct STEM Employment as a Percent
of State Employment (Ranked)

Rank	State	Direct STEM Employment	STEM Employment as a Percentage of Total State Employment
1	DC	337,853	38.90%
2	MI	2,021,543	37.30%
3	MA	1,723,028	36.80%
4	IN	1,403,726	36.10%
5	NH	313,574	36.00%
6	VA	1,865,711	35.90%
7	CT	788,358	35.70%
8	OH	2,439,549	35.70%
9	MD	1,283,957	35.50%
10	WI	1,274,071	35.40%
11	AK	154,191	35.30%
12	AL	939,766	35.20%
13	UT	761,067	35.20%
14	MN	1,280,370	35.20%
15	WV	299,100	35.10%
16	RI	218,240	35.00%
17	WA	1,557,634	35.00%
18	PA	2,608,224	35.00%
19	CO	1,339,963	34.90%
20	NC	2,127,596	34.80%
21	KY	861,224	34.40%
22	KS	644,947	34.30%
23	IL	2,582,406	34.30%
24	MO	1,264,186	34.30%
25	NJ	1,814,218	34.10%

Table 7
Direct STEM Employment as a Percent
of State Employment (Ranked)
 Continued

Rank	State	Direct STEM Employment	STEM Employment as a Percentage of Total State Employment
26	SC	960,109	34.10%
27	VT	140,005	34.10%
28	AZ	1,340,994	34.00%
29	DE	200,776	34.00%
30	TX	5,999,552	33.90%
31	TN	1,399,852	33.90%
32	LA	867,141	33.80%
33	OK	761,733	33.70%
34	NM	363,315	33.70%
35	ME	278,500	33.70%
36	GA	2,109,999	33.70%
37	ND	187,745	33.70%
38	CA	7,877,953	33.60%
39	AR	545,038	33.30%
40	NY	3,912,814	33.20%
41	HI	276,006	33.20%
42	OR	825,623	33.10%
43	WY	128,762	33.10%
44	SD	201,295	33.10%
45	MS	517,013	32.90%
46	ID	360,681	32.90%
47	NE	432,084	32.90%
48	FL	4,105,890	32.80%
49	IA	658,547	32.60%
50	MT	220,616	32.00%
51	NV	528,937	29.80%

Table 8
Percent of STEM Professionals without
a Bachelor's Degree by State (Ranked)

Rank	State	Less than Bachelor's	Bachelor's or Higher
1	IN	61.1%	38.9%
2	MS	60.0%	40.0%
3	WI	59.6%	40.4%
4	KY	59.4%	40.6%
5	IA	59.4%	40.6%
6	AR	59.1%	40.9%
7	WY	59.0%	41.0%
8	SC	58.9%	41.1%
9	AL	58.8%	41.2%
10	MI	58.8%	41.2%
11	TN	58.5%	41.5%
12	ND	58.4%	41.6%
13	OH	58.3%	41.7%
14	OK	58.2%	41.8%
15	LA	58.0%	42.0%
16	SD	57.9%	42.1%
17	WV	57.5%	42.5%
18	ID	57.4%	42.6%
19	MT	57.3%	42.7%
20	NV	57.2%	42.8%
21	KS	57.2%	42.8%
22	OR	56.9%	43.1%
23	NE	56.7%	43.3%
24	ME	56.6%	43.4%
25	MO	56.5%	43.5%

Table 8

Percent of STEM Professionals without a Bachelor's Degree by State (Ranked)

Continued

Rank	State	Less than Bachelor's	Bachelor's or Higher
26	MN	56.0%	44.0%
27	GA	55.9%	44.1%
28	TX	55.8%	44.2%
29	IL	55.8%	44.2%
30	PA	55.8%	44.2%
31	NC	55.7%	44.3%
32	VT	55.4%	44.6%
33	AZ	55.1%	44.9%
34	NH	55.1%	44.9%
35	FL	55.1%	44.9%
36	AK	54.7%	45.3%
37	UT	54.2%	45.8%
38	NM	54.2%	45.8%
39	CT	54.2%	45.8%
40	RI	53.8%	46.2%
41	NJ	53.5%	46.5%
42	CA	53.4%	46.6%
43	WA	53.1%	46.9%
44	CO	53.0%	47.0%
45	DE	52.2%	47.8%
46	VA	52.2%	47.8%
47	NY	52.2%	47.8%
48	HI	52.2%	47.8%
49	MD	51.6%	48.4%
50	MA	50.5%	49.5%
51	DC	44.8%	55.2%

Methodology

Introduction

Science is US engaged FTI Consulting (“FTI”) to analyze the economic impact of science on the U.S. and state economies.

FTI employed the following steps to complete the analysis:

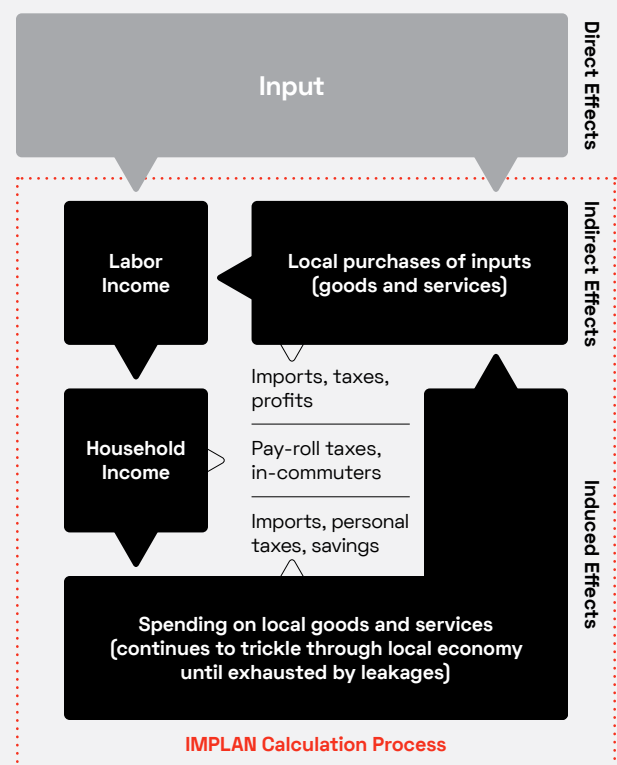
- Securing IMPLAN¹ models for the U.S. economy, the 50 state economies and the District of Columbia economy, which counts as a de facto state in IMPLAN
- Gathering inputs and parameters to use in the study, including:
 - Extracting and processing IMPLAN data for employment and output as well as gross domestic product (“GDP”) and labor income
 - Gathering and indexing data from the Bureau of Labor Statistics (“BLS”) regarding the occupations present in different economic sectors and the distribution of educational attainment present for the occupations in the BLS database
 - Mapping the data for employment by economic sector into employment by occupation
 - Mapping the data for occupation into educational attainment
 - Classifying which occupations are “STEM² jobs” based on the determinations made during the study from 2020 and suggested edits made by Science is US
- Reconciling these to produce a single, consistent mapping of the 195.7 million U.S. jobs within the most recent IMPLAN database for calendar year 2021 by 51 regions, 546 IMPLAN sectors, 832 occupations and seven levels of educational attainment
- This was further divided between STEM and non-STEM jobs³
- Running the direct economic impact of STEM through the IMPLAN model to determine the indirect, induced and total economic and fiscal impact of STEM

IMPLAN Model

IMPLAN is an input-output (“IO”) model of national and regional economies for tracking the flow of dollars throughout an economy between different economic sectors, households and the public sector. IMPLAN looks at the linkages between economic sectors through industrial supply chains to measure the “indirect” effect from spending. IMPLAN also looks at transactions between economic sectors and households through labor supply and consumer expenditures to measure the “induced” effect from increased consumer expenditures on the economy.

Figure 1 shows the calculation process underlying IMPLAN. Direct employment or expenditures, such as STEM jobs, create an indirect effect throughout industrial supply chains and support the income earned by households to produce the induced effect of consumer spending.

Figure 1
IMPLAN Calculation Flowchart



Analyzing IMPLAN Data

IMPLAN was both the modeling tool for the economic and fiscal impact analysis and the data source for U.S. employment by economic sector and state.⁴ The decision to source this data from IMPLAN instead of federal data sources came down to two important factors:

1. Most federal data sources only release regional data by economic sector at the level of the three- or four-digit NAICS.⁵ While IMPLAN needs to make estimates to do this, IMPLAN data offers 546 economic sectors for all the 51 regions under consideration.
2. Federal data sources “suppress” certain datapoints to protect the confidentiality of certain survey respondents, such as for the mining sector in states or counties where only one mining operation exists. IMPLAN deploys an unsuppression methodology forestimating this data and therefore offers the internally consistent dataset needed for this analysis.

IMPLAN uses several data sources to make its estimates. These data sources include the BLS and its Quarterly Census of Employment and Wages (“QCEW”), the U.S. Bureau of Economic Analysis (“BEA”) and its Regional Economic Accounts and the U.S. Census Bureau and its County Business Patterns. IMPLAN checks these data sources against one another and reconciles them with the National Income Product Accounts (“NIPA”) to ensure consistency and quality of the data. Because such estimates are proprietary, IMPLAN data will not match exactly with any one public source.

“BEA Jobs” v. “BLS Jobs”

There are two contrasting definitions of a “job” in federal data:

1. BEA Jobs: In BEA data, a job is a “task” or “roster slot” offered by an employer (and this includes jobs “offered” by the self-employed to themselves), not a full-time equivalent of an employed worker. For instance, if a worker held two part-time jobs, then that counts as two jobs in the BEA data tables. The BEA definition of a job is more comprehensive than the BLS definition, and thus IMPLAN and most other economic models use the BEA definition.

2. BLS Jobs: In BLS data, a job is a person working. For instance, to return to the example from the previous paragraph, a single worker holding two part-time jobs counts as one in the BLS data tables. The public, the media, various stakeholders and even some economists are often inconsistent with their terminology when describing a “job.”

The technical distinction between these definitions is crucial because the BEA definition used here is different from that of a widely quoted BLS report on monthly jobs. According to the “monthly jobs report,” as it is called by the press, there are currently 159.2 million U.S. residents with a job.⁶ Regular BLS updates to this data, such as an increase of 223,000 in December 2022,⁷ receive media attention, have weighty political impacts and influence Federal Reserve policy decision.⁸

BLS releases have the advantage of being close to real-time data. The releases for one month (e.g., January 2023) are only a few days into the next month (e.g., the BLS release for January 2023 was on February 8, 2023).⁹ Additionally, the BLS definition has the advantage of looking at labor markets from the perspective of jobseekers and most policymakers and politicians.

While the BLS figures receive more media interest, they are less precise than the BEA numbers. The BLS numbers do not include self-employed workers, many workers at nonprofits and other workers not participating in the Social Security system, such as railroad workers.¹⁰ Not including these types of workers allows BLS to be faster, but BEA takes the time to include them.¹¹

The BEA definition of a job (and thus the IMPLAN data), therefore, provides a more complete view of the labor market even though there is a lag in the data of about a year.

Mapping Employment by Economic Sector by Occupation

Total U.S. jobs of 195.7 million were transformed from jobs by economic sector and region in IMPLAN into jobs by economic sector, region and occupation by using an industry-occupation matrix (“IOM”). An IOM for the U.S. economy is made available by the BLS.¹² An IOM shows the mixture of occupations in an economic sector. For example, according to the BLS IOM, occupations making up the largest share of the workforce of the commercial logging sector include the following:

Table 1
IOM for the Commercial Logging Economic Sector

Rank	Occupation	Share
1	Logging equipment operators	42.6%
2	Heavy and tractor-trailer truck drivers	17.8%
3	Fallers	5.9%
4	Logging workers, all other	5.9%
5	First-line supervisors of farming, fishing, and forestry workers	5.0%
6	Office clerks, general	4.5%
7	Mobile heavy equipment mechanics, except engines	3.2%
8	Bookkeeping, accounting, and auditing clerks	2.3%
9	Foresters	2.0%
10	Secretaries and administrative assistants	2.0%
11	Sawing machine setters, operators, and tenders, wood	1.6%
12	General and operations managers	1.4%
13	Operating engineers and other construction equipment operators	1.4%
	ALL OTHERS LESS THAN 1% OF TOTAL	4.3%
	TOTAL	100%

The occupations towards the top of the list in Table 1 make intuitive sense to be strongly associated with commercial logging operations. These include logging equipment operators, heavy truck drivers and specialized logging-related workers and managers. The occupation mixture for commercial logging also includes some support occupations generally present across most economic sectors, such as the occupations related to accounting and clerical work or administration.

The occupations in the IOM from BLS did not correspond exactly with the 546 economic sectors with the IMPLAN data. As such, they were mapped to their closest match, which was generally at either the four-digit or the five-digit NAICS level compared to IMPLAN’s six-digit codes.

Mapping Occupations by Educational Attainment

BLS Table 5.3¹³ was used to further map occupations by educational attainment. This table shows the distribution of educational attainment associated with each occupation in a manner similar to how the IOM shows the distribution of occupation by economic sector. For example, according to BLS Table 5.3, 70.9% of “chief executives” have a bachelor’s degree or higher. In comparison, only 33.9% of all U.S. workers have earned a bachelor’s degree or higher during their education.

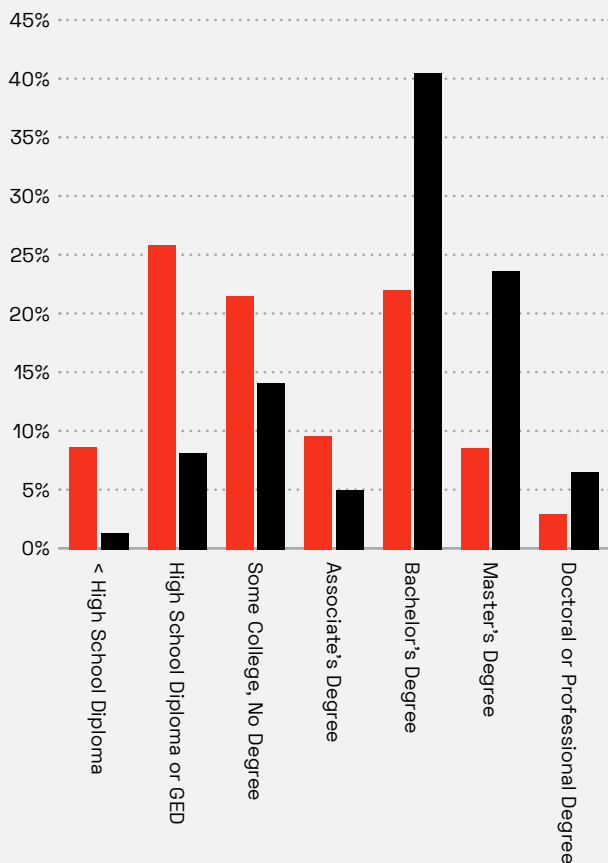
The full distribution of educational attainment includes seven categories:

1. < High School Diploma
2. High School Diploma or GED
3. Some College, No Degree
4. Associate’s Degree
5. Bachelor’s Degree
6. Master’s Degree
7. Doctoral or Professional Degree

To continue the previous example, Figure 2 shows educational attainment based on these categories for chief executives and U.S. workers generally. As intuition might lead one to expect, chief executives tend to have higher educational attainment than the average occupation.

Figure 2
Educational Attainment of U.S. Chief Executives and U.S. Workers Generally (%)

■ All U.S. Occupations
 ■ Chief Executives



This process was repeated across 832 occupations for the seven levels of educational attainment. This was then combined with the economic data by sector and STEM definition.

Reconciling Jobs by Sector, Occupation, and Educational Attainment

The two described processes yielded two datasets: (1.) occupations by IMPLAN sector and (2.) educational attainment by occupation. To reconcile and merge these datasets, the occupations – tagged by their sectors – were allocated down to their educational attainment using data from the second dataset. Figure 3 provides a specific example of this process.

Figure 3
Example of Creating the Joined Dataset by Sector, Occupation, and Educational Attainment

U.S. oilseed farming employment = 95,855

4.9% of oilseed farming workers are “agricultural equipment operators”

4,688 agricultural equipment operators in this economic sector

28.0% of this occupation have a high school diploma or GED

1,314 of this occupation in this economic sector have a HS diploma or GED¹⁴

Qualifying as a “STEM Job”

After tagging all 195.7 million U.S. jobs by economic sector, occupation and educational attainment, FTI worked with Science is US to define the most credible, defensible and sensible methodology to define a “STEM job.” FTI and Science is US designated the STEM jobs based on their occupation and not on their economic sector (e.g., all jobs in the professional services category for scientific research) or their educational attainment (e.g., all the jobs with a bachelor’s degree or higher).

This means the day-to-day tasks of the occupation make a job a STEM job. For instance, many of the most numerous occupations in the scientific research sector are self-evidently related to STEM (e.g., medical scientists, software developers, natural science managers, biological technicians, etc.) while others (e.g., general and operations managers) are not. As such, STEM workers in fields without an obvious connection to STEM (e.g., IT professionals building and maintaining computer infrastructure for a law firm) were counted as “STEM” while not counting the non-STEM workers in support roles for STEM occupations (e.g., the office manager for a dental practice).

FTI and Science is US reviewed the list of 832 occupations and designated 428 of them as “STEM jobs.” This definition broadens and deepens the universe of STEM workers to include many “practical” workers, who might only have on-the-job training or two-year degrees or certifications, like IT workers or the production workers in manufacturing working alongside engineers.

Simulating the Economic and Fiscal Impacts

To apply indirect and induced multipliers by state and economic sector across the country, IMPLAN was used to simulate the total economic impact of STEM. The direct STEM employment from the previous analysis was used as the direct input to the IMPLAN simulations.

STEM jobs are present in every economic sector. Consequently, to avoid double counting the same STEM jobs or related economic activity twice, the results of the “raw” IMPLAN simulations were adjusted downwards based on the data from the occupations analysis. After simulating economic impacts in IMPLAN, the indirect and induced results were multiplied by one minus the proportion of STEM jobs by economic sector. This effectively subtracts the direct STEM jobs and related economic activity from the indirect and induced results and avoids double counting.

The following example details the steps taken for each sector and occupation:

- The U.S. oilseed farming economic sector has 95,855 jobs
- Oilseed farming has 12,712 direct STEM jobs (or 13.3% of the total for the sector)
- The “raw” IMPLAN simulation produces an impact of 65,764 indirect jobs and 22,123 induced jobs in oilseed farming being supported by STEM jobs across all sectors
- The indirect and induced jobs are multiplied by one minus the share of STEM occupations that make up oilseed farming – which is one minus 13.3% equals 86.7%
- This leaves 57,042 indirect jobs¹⁵ and 19,189 induced jobs¹⁶ supported by STEM
- The same calculation was made for the other measurements of activity, such as output, GDP, labor income, federal tax revenues and state and local tax revenues
- For instance, if 50% of the employment of a sector and state was supported by STEM, then 50% of the other metrics (e.g., output and GDP, etc.) were, as well

For the 2020 study, federal and state and local tax revenues were calculated based on the historical effective tax rates of GDP.¹⁷ Since then, IMPLAN has added features to estimate the fiscal impacts for national-level simulations with state-by-state results like the ones produced here.

Notes

¹ <https://implan.com/>

² Science, Technology, Engineering, Mathematics and Medicine

³ Approximately 324.4 million potential classifications of these jobs

⁴ For the remainder of this document, “state” refers 51 regions inclusive of the District of Columbia

⁵ <https://www.census.gov/naics/>

⁶ <https://www.bls.gov/news.release/empsit.t01.htm>

⁷ <https://www.bls.gov/news.release/empsit.nr0.htm>

⁸ <https://www.washingtonpost.com/business/2023/01/06/december-jobs-report/>

⁹ <https://www.bls.gov/opub/ted/2022/employment-up-by-467000-in-january-2022-down-by-2-9-million-since-february-2020.htm>

¹⁰ Railroad workers have a separate system called the U.S. Railroad Retirement Board, <https://rrb.gov/>

¹¹ <https://www.bea.gov/resources/methodologies/nipa-handbook/pdf/chapter-03.pdf>

¹² <https://www.bls.gov/emp/ind-occ-matrix/matrix.xlsx>

¹³ <https://www.bls.gov/emp/ind-occ-matrix/occupation.xlsx>

¹⁴ $95,855 * 4.9\% * 28.0\% = 1,314$ of jobs in oilseed farming are agricultural equipment operators with a high school diploma or equivalent

¹⁵ $65,764 * (1 \text{ minus } 13.3\%) = 57,402$

¹⁶ $22,123 * (1 \text{ minus } 13.3\%) = 19,189$

¹⁷ A relationship sometime called Hauser’s Law, <https://www.hoover.org/research/hausers-law>

Appendix

Table 1
List of STEM and Non-STEM Occupations

ID #	SIC Code	Occupation	STEM?
1	11-1011	Chief executives	NO
2	11-1021	General and operations managers	NO
3	11-1031	Legislators	NO
4	11-2011	Advertising and promotions managers	NO
5	11-2021	Marketing managers	NO
6	11-2022	Sales managers	NO
7	11-2032	Public relations managers	NO
8	11-2033	Fundraising managers	NO
9	11-3012	Administrative services managers	NO
10	11-3013	Facilities managers	NO
11	11-3021	Computer and information systems managers	YES
12	11-3031	Financial managers	YES
13	11-3051	Industrial production managers	YES
14	11-3061	Purchasing managers	NO
15	11-3071	Transportation, storage, and distribution managers	NO
16	11-3111	Compensation and benefits managers	NO
17	11-3121	Human resources managers	NO
18	11-3131	Training and development managers	NO
19	11-9013	Farmers, ranchers, and other agricultural managers	NO
20	11-9021	Construction managers	NO
21	11-9031	Education and childcare administrators, preschool and daycare	NO
22	11-9032	Education administrators, kindergarten through secondary	NO
23	11-9033	Education administrators, postsecondary	NO
24	11-9039	Education administrators, all other	NO
25	11-9041	Architectural and engineering managers	YES
26	11-9051	Food service managers	NO

Table 1
List of STEM and Non-STEM Occupations
 Continued

ID #	SIC Code	Occupation	STEM?
27	11-9071	Gambling managers	NO
28	11-9072	Entertainment and recreation managers, except gambling	NO
29	11-9081	Lodging managers	NO
30	11-9111	Medical and health services managers	YES
31	11-9121	Natural sciences managers	YES
32	11-9131	Postmasters and mail superintendents	NO
33	11-9141	Property, real estate, and community association managers	NO
34	11-9151	Social and community service managers	NO
35	11-9161	Emergency management directors	NO
36	11-9171	Funeral home managers	NO
37	11-9179	Personal service managers, all other	NO
38	11-9199	Managers, all other	NO
39	13-1011	Agents and business managers of artists, performers, and athletes	NO
40	13-1020	Buyers and purchasing agents	NO
41	13-1031	Claims adjusters, examiners, and investigators	YES
42	13-1032	Insurance appraisers, auto damage	NO
43	13-1041	Compliance officers	NO
44	13-1051	Cost estimators	YES
45	13-1071	Human resources specialists	NO
46	13-1074	Farm labor contractors	NO
47	13-1075	Labor relations specialists	NO
48	13-1081	Logisticians	YES
49	13-1082	Project management specialists	YES
50	13-1111	Management analysts	YES
51	13-1121	Meeting, convention, and event planners	NO
52	13-1131	Fundraisers	NO

Table 1
List of STEM and Non-STEM Occupations
 Continued

ID #	SIC Code	Occupation	STEM?
53	13-1141	Compensation, benefits, and job analysis specialists	YES
54	13-1151	Training and development specialists	NO
55	13-1161	Market research analysts and marketing specialists	YES
56	13-1199	Business operations specialists, all other	YES
57	13-2011	Accountants and auditors	YES
58	13-2020	Property appraisers and assessors	YES
59	13-2031	Budget analysts	YES
60	13-2041	Credit analysts	YES
61	13-2051	Financial and investment analysts	YES
62	13-2052	Personal financial advisors	YES
63	13-2053	Insurance underwriters	YES
64	13-2054	Financial risk specialists	YES
65	13-2061	Financial examiners	YES
66	13-2071	Credit counselors	YES
67	13-2072	Loan officers	YES
68	13-2081	Tax examiners and collectors, and revenue agents	YES
69	13-2082	Tax preparers	YES
70	13-2099	Financial specialists, all other	YES
71	15-1211	Computer systems analysts	YES
72	15-1212	Information security analysts	YES
73	15-1221	Computer and information research scientists	YES
74	15-1231	Computer network support specialists	YES
75	15-1232	Computer user support specialists	YES
76	15-1241	Computer network architects	YES
77	15-1242	Database administrators	YES
78	15-1243	Database architects	YES

Table 1
List of STEM and Non-STEM Occupations
 Continued

ID #	SIC Code	Occupation	STEM?
79	15-1244	Network and computer systems administrators	YES
80	15-1251	Computer programmers	YES
81	15-1252	Software developers	YES
82	15-1253	Software quality assurance analysts and testers	YES
83	15-1254	Web developers	YES
84	15-1255	Web and digital interface designers	YES
85	15-1299	Computer occupations, all other	YES
86	15-2011	Actuaries	YES
87	15-2021	Mathematicians	YES
88	15-2031	Operations research analysts	YES
89	15-2041	Statisticians	YES
90	15-2051	Data scientists	YES
91	15-2099	Mathematical science occupations, all other	YES
92	17-1011	Architects, except landscape and naval	YES
93	17-1012	Landscape architects	NO
94	17-1021	Cartographers and photogrammetrists	YES
95	17-1022	Surveyors	YES
96	17-2011	Aerospace engineers	YES
97	17-2021	Agricultural engineers	YES
98	17-2031	Bioengineers and biomedical engineers	YES
99	17-2041	Chemical engineers	YES
100	17-2051	Civil engineers	YES
101	17-2061	Computer hardware engineers	YES
102	17-2071	Electrical engineers	YES
103	17-2072	Electronics engineers, except computer	YES
104	17-2081	Environmental engineers	YES

Table 1
List of STEM and Non-STEM Occupations
 Continued

ID #	SIC Code	Occupation	STEM?
105	17-2111	Health and safety engineers, except mining safety engineers and inspectors	YES
106	17-2112	Industrial engineers	YES
107	17-2121	Marine engineers and naval architects	YES
108	17-2131	Materials engineers	YES
109	17-2141	Mechanical engineers	YES
110	17-2151	Mining and geological engineers, including mining safety engineers	YES
111	17-2161	Nuclear engineers	YES
112	17-2171	Petroleum engineers	YES
113	17-2199	Engineers, all other	YES
114	17-3011	Architectural and civil drafters	YES
115	17-3012	Electrical and electronics drafters	YES
116	17-3013	Mechanical drafters	YES
117	17-3019	Drafters, all other	YES
118	17-3021	Aerospace engineering and operations technologists and technicians	YES
119	17-3022	Civil engineering technologists and technicians	YES
120	17-3023	Electrical and electronic engineering technologists and technicians	YES
121	17-3024	Electro-mechanical and mechatronics technologists and technicians	YES
122	17-3025	Environmental engineering technologists and technicians	YES
123	17-3026	Industrial engineering technologists and technicians	YES
124	17-3027	Mechanical engineering technologists and technicians	YES
125	17-3028	Calibration technologists and technicians	YES
126	17-3029	Engineering technologists and technicians, except drafters, all other	YES
127	17-3031	Surveying and mapping technicians	YES
128	19-1011	Animal scientists	YES
129	19-1012	Food scientists and technologists	YES
130	19-1013	Soil and plant scientists	YES

Table 1
List of STEM and Non-STEM Occupations
 Continued

ID #	SIC Code	Occupation	STEM?
131	19-1021	Biochemists and biophysicists	YES
132	19-1022	Microbiologists	YES
133	19-1023	Zoologists and wildlife biologists	YES
134	19-1029	Biological scientists, all other	YES
135	19-1031	Conservation scientists	YES
136	19-1032	Foresters	YES
137	19-1041	Epidemiologists	YES
138	19-1042	Medical scientists, except epidemiologists	YES
139	19-1099	Life scientists, all other	YES
140	19-2011	Astronomers	YES
141	19-2012	Physicists	YES
142	19-2021	Atmospheric and space scientists	YES
143	19-2031	Chemists	YES
144	19-2032	Materials scientists	YES
145	19-2041	Environmental scientists and specialists, including health	YES
146	19-2042	Geoscientists, except hydrologists and geographers	YES
147	19-2043	Hydrologists	YES
148	19-2099	Physical scientists, all other	YES
149	19-3011	Economists	YES
150	19-3022	Survey researchers	YES
151	19-3032	Industrial-organizational psychologists	YES
152	19-3033	Clinical and counseling psychologists	YES
153	19-3034	School psychologists	YES
154	19-3039	Psychologists, all other	YES
155	19-3041	Sociologists	YES
156	19-3051	Urban and regional planners	YES

Table 1
List of STEM and Non-STEM Occupations
 Continued

ID #	SIC Code	Occupation	STEM?
157	19-3091	Anthropologists and archeologists	YES
158	19-3092	Geographers	YES
159	19-3093	Historians	NO
160	19-3094	Political scientists	YES
161	19-3099	Social scientists and related workers, all other	YES
162	19-4012	Agricultural technicians	YES
163	19-4013	Food science technicians	YES
164	19-4021	Biological technicians	YES
165	19-4031	Chemical technicians	YES
166	19-4042	Environmental science and protection technicians, including health	YES
167	19-4043	Geological technicians, except hydrologic technicians	YES
168	19-4044	Hydrologic technicians	YES
169	19-4051	Nuclear technicians	YES
170	19-4061	Social science research assistants	YES
171	19-4071	Forest and conservation technicians	YES
172	19-4092	Forensic science technicians	YES
173	19-4099	Life, physical, and social science technicians, all other	YES
174	19-5011	Occupational health and safety specialists	YES
175	19-5012	Occupational health and safety technicians	YES
176	21-1012	Educational, guidance, and career counselors and advisors	NO
177	21-1013	Marriage and family therapists	NO
178	21-1015	Rehabilitation counselors	YES
179	21-1018	Substance abuse, behavioral disorder, and mental health counselors	YES
180	21-1019	Counselors, all other	NO
181	21-1021	Child, family, and school social workers	NO
182	21-1022	Healthcare social workers	NO

Table 1
List of STEM and Non-STEM Occupations
 Continued

ID #	SIC Code	Occupation	STEM?
183	21-1023	Mental health and substance abuse social workers	NO
184	21-1029	Social workers, all other	NO
185	21-1091	Health education specialists	YES
186	21-1092	Probation officers and correctional treatment specialists	NO
187	21-1093	Social and human service assistants	NO
188	21-1094	Community health workers	YES
189	21-1099	Community and social service specialists, all other	NO
190	21-2011	Clergy	NO
191	21-2021	Directors, religious activities, and education	NO
192	21-2099	Religious workers, all other	NO
193	23-1011	Lawyers	NO
194	23-1012	Judicial law clerks	NO
195	23-1021	Administrative law judges, adjudicators, and hearing officers	NO
196	23-1022	Arbitrators, mediators, and conciliators	NO
197	23-1023	Judges, magistrate judges, and magistrates	NO
198	23-2011	Paralegals and legal assistants	NO
199	23-2093	Title examiners, abstractors, and searchers	NO
200	23-2099	Legal support workers, all other	NO
201	25-1011	Business teachers, postsecondary	YES
202	25-1021	Computer science teachers, postsecondary	YES
203	25-1022	Mathematical science teachers, postsecondary	YES
204	25-1031	Architecture teachers, postsecondary	YES
205	25-1032	Engineering teachers, postsecondary	YES
206	25-1041	Agricultural sciences teachers, postsecondary	YES
207	25-1042	Biological science teachers, postsecondary	YES
208	25-1043	Forestry and conservation science teachers, postsecondary	YES

Table 1
List of STEM and Non-STEM Occupations
 Continued

ID #	SIC Code	Occupation	STEM?
209	25-1051	Atmospheric, earth, marine, and space sciences teachers, postsecondary	YES
210	25-1052	Chemistry teachers, postsecondary	YES
211	25-1053	Environmental science teachers, postsecondary	YES
212	25-1054	Physics teachers, postsecondary	YES
213	25-1061	Anthropology and archeology teachers, postsecondary	YES
214	25-1062	Area, ethnic, and cultural studies teachers, postsecondary	NO
215	25-1063	Economics teachers, postsecondary	YES
216	25-1064	Geography teachers, postsecondary	YES
217	25-1065	Political science teachers, postsecondary	YES
218	25-1066	Psychology teachers, postsecondary	YES
219	25-1067	Sociology teachers, postsecondary	NO
220	25-1069	Social sciences teachers, postsecondary, all other	YES
221	25-1071	Health specialties teachers, postsecondary	YES
222	25-1072	Nursing instructors and teachers, postsecondary	YES
223	25-1081	Education teachers, postsecondary	NO
224	25-1082	Library science teachers, postsecondary	NO
225	25-1111	Criminal justice and law enforcement teachers, postsecondary	NO
226	25-1112	Law teachers, postsecondary	NO
227	25-1113	Social work teachers, postsecondary	NO
228	25-1121	Art, drama, and music teachers, postsecondary	NO
229	25-1122	Communications teachers, postsecondary	NO
230	25-1123	English language and literature teachers, postsecondary	NO
231	25-1124	Foreign language and literature teachers, postsecondary	NO
232	25-1125	History teachers, postsecondary	NO
233	25-1126	Philosophy and religion teachers, postsecondary	NO
234	25-1192	Family and consumer sciences teachers, postsecondary	NO

Table 1
List of STEM and Non-STEM Occupations
 Continued

ID #	SIC Code	Occupation	STEM?
235	25-1193	Recreation and fitness studies teachers, postsecondary	NO
236	25-1194	Career/technical education teachers, postsecondary	YES
237	25-1199	Postsecondary teachers, all other	NO
238	25-2011	Preschool teachers, except special education	NO
239	25-2012	Kindergarten teachers, except special education	NO
240	25-2021	Elementary school teachers, except special education	NO
241	25-2022	Middle school teachers, except special and career/technical education	NO
242	25-2023	Career/technical education teachers, middle school	YES
243	25-2031	Secondary school teachers, except special and career/technical education	NO
244	25-2032	Career/technical education teachers, secondary school	YES
245	25-2051	Special education teachers, preschool	NO
246	25-2052	Special education teachers, kindergarten, and elementary school	NO
247	25-2057	Special education teachers, middle school	NO
248	25-2058	Special education teachers, secondary school	NO
249	25-2059	Special education teachers, all other	NO
250	25-3011	Adult basic education, adult secondary education, and English as a second language instructors	NO
251	25-3021	Self-enrichment teachers	NO
252	25-3031	Substitute teachers, short-term	NO
253	25-3041	Tutors	NO
254	25-3099	Teachers and instructors, all other	NO
255	25-4011	Archivists	NO
256	25-4012	Curators	NO
257	25-4013	Museum technicians and conservators	YES
258	25-4022	Librarians and media collections specialists	NO
259	25-4031	Library technicians	NO
260	25-9021	Farm and home management educators	NO

Table 1
List of STEM and Non-STEM Occupations
 Continued

ID #	SIC Code	Occupation	STEM?
261	25-9031	Instructional coordinators	NO
262	25-9044	Teaching assistants, postsecondary	NO
263	25-9045	Teaching assistants, except postsecondary	NO
264	25-9099	Educational instruction and library workers, all other	NO
265	27-1011	Art directors	NO
266	27-1012	Craft artists	NO
267	27-1013	Fine artists, including painters, sculptors, and illustrators	NO
268	27-1014	Special effects artists and animators	NO
269	27-1019	Artists and related workers, all other	NO
270	27-1021	Commercial and industrial designers	NO
271	27-1022	Fashion designers	NO
272	27-1023	Floral designers	NO
273	27-1024	Graphic designers	NO
274	27-1025	Interior designers	NO
275	27-1026	Merchandise displayers and window trimmers	NO
276	27-1027	Set and exhibit designers	NO
277	27-1029	Designers, all other	NO
278	27-2011	Actors	NO
279	27-2012	Producers and directors	NO
280	27-2021	Athletes and sports competitors	NO
281	27-2022	Coaches and scouts	NO
282	27-2023	Umpires, referees, and other sports officials	NO
283	27-2031	Dancers	NO
284	27-2032	Choreographers	NO
285	27-2041	Music directors and composers	NO
286	27-2042	Musicians and singers	NO

Table 1
List of STEM and Non-STEM Occupations
 Continued

ID #	SIC Code	Occupation	STEM?
287	27-2091	Disc jockeys, except radio	NO
288	27-2099	Entertainers and performers, sports, and related workers, all other	NO
289	27-3011	Broadcast announcers and radio disc jockeys	NO
290	27-3023	News analysts, reporters, and journalists	NO
291	27-3031	Public relations specialists	NO
292	27-3041	Editors	NO
293	27-3042	Technical writers	YES
294	27-3043	Writers and authors	NO
295	27-3091	Interpreters and translators	NO
296	27-3092	Court reporters and simultaneous captioners	NO
297	27-3099	Media and communication workers, all other	NO
298	27-4011	Audio and video technicians	YES
299	27-4012	Broadcast technicians	YES
300	27-4014	Sound engineering technicians	YES
301	27-4015	Lighting technicians	YES
302	27-4021	Photographers	NO
303	27-4031	Camera operators, television, video, and film	NO
304	27-4032	Film and video editors	NO
305	27-4099	Media and communication equipment workers, all other	NO
306	29-1011	Chiropractors	YES
307	29-1021	Dentists, general	YES
308	29-1022	Oral and maxillofacial surgeons	YES
309	29-1023	Orthodontists	YES
310	29-1024	Prosthodontists	YES
311	29-1029	Dentists, all other specialists	YES
312	29-1031	Dietitians and nutritionists	YES

Table 1
List of STEM and Non-STEM Occupations
 Continued

ID #	SIC Code	Occupation	STEM?
313	29-1041	Optometrists	YES
314	29-1051	Pharmacists	YES
315	29-1071	Physician assistants	YES
316	29-1081	Podiatrists	YES
317	29-1122	Occupational therapists	YES
318	29-1123	Physical therapists	YES
319	29-1124	Radiation therapists	YES
320	29-1125	Recreational therapists	YES
321	29-1126	Respiratory therapists	YES
322	29-1127	Speech-language pathologists	YES
323	29-1128	Exercise physiologists	YES
324	29-1129	Therapists, all other	YES
325	29-1131	Veterinarians	YES
326	29-1141	Registered nurses	YES
327	29-1151	Nurse anesthetists	YES
328	29-1161	Nurse midwives	YES
329	29-1171	Nurse practitioners	YES
330	29-1181	Audiologists	YES
331	29-1211	Anesthesiologists	YES
332	29-1212	Cardiologists	YES
333	29-1213	Dermatologists	YES
334	29-1214	Emergency medicine physicians	YES
335	29-1215	Family medicine physicians	YES
336	29-1216	General internal medicine physicians	YES
337	29-1217	Neurologists	YES
338	29-1218	Obstetricians and gynecologists	YES

Table 1
List of STEM and Non-STEM Occupations
 Continued

ID #	SIC Code	Occupation	STEM?
339	29-1221	Pediatricians, general	YES
340	29-1222	Physicians, pathologists	YES
341	29-1223	Psychiatrists	YES
342	29-1224	Radiologists	YES
343	29-1229	Physicians, all other	YES
344	29-1241	Ophthalmologists, except pediatric	YES
345	29-1242	Orthopedic surgeons, except pediatric	YES
346	29-1243	Pediatric surgeons	YES
347	29-1249	Surgeons, all other	YES
348	29-1291	Acupuncturists	NO
349	29-1292	Dental hygienists	YES
350	29-1299	Healthcare diagnosing or treating practitioners, all other	YES
351	29-2010	Clinical laboratory technologists and technicians	YES
352	29-2031	Cardiovascular technologists and technicians	YES
353	29-2032	Diagnostic medical sonographers	YES
354	29-2033	Nuclear medicine technologists	YES
355	29-2034	Radiologic technologists and technicians	YES
356	29-2035	Magnetic resonance imaging technologists	YES
357	29-2036	Medical dosimetrists	YES
358	29-2042	Emergency medical technicians	YES
359	29-2043	Paramedics	YES
360	29-2051	Dietetic technicians	YES
361	29-2052	Pharmacy technicians	YES
362	29-2053	Psychiatric technicians	YES
363	29-2055	Surgical technologists	YES
364	29-2056	Veterinary technologists and technicians	YES

Table 1
List of STEM and Non-STEM Occupations
 Continued

ID #	SIC Code	Occupation	STEM?
365	29-2057	Ophthalmic medical technicians	YES
366	29-2061	Licensed practical and licensed vocational nurses	YES
367	29-2072	Medical records specialists	YES
368	29-2081	Opticians, dispensing	YES
369	29-2091	Orthotists and prosthetists	YES
370	29-2092	Hearing aid specialists	YES
371	29-2099	Health technologists and technicians, all other	YES
372	29-9021	Health information technologists and medical registrars	YES
373	29-9091	Athletic trainers	YES
374	29-9092	Genetic counselors	YES
375	29-9093	Surgical assistants	YES
376	29-9099	Healthcare practitioners and technical workers, all other	YES
377	31-1120	Home health and personal care aides	NO
378	31-1131	Nursing assistants	YES
379	31-1132	Orderlies	NO
380	31-1133	Psychiatric aides	YES
381	31-2011	Occupational therapy assistants	YES
382	31-2012	Occupational therapy aides	YES
383	31-2021	Physical therapist assistants	YES
384	31-2022	Physical therapist aides	YES
385	31-9011	Massage therapists	YES
386	31-9091	Dental assistants	YES
387	31-9092	Medical assistants	YES
388	31-9093	Medical equipment preparers	YES
389	31-9094	Medical transcriptionists	YES
390	31-9095	Pharmacy aides	YES

Table 1
List of STEM and Non-STEM Occupations
 Continued

ID #	SIC Code	Occupation	STEM?
391	31-9096	Veterinary assistants and laboratory animal caretakers	YES
392	31-9097	Phlebotomists	YES
393	31-9099	Healthcare support workers, all other	YES
394	33-1011	First-line supervisors of correctional officers	NO
395	33-1012	First-line supervisors of police and detectives	NO
396	33-1021	First-line supervisors of firefighting and prevention workers	NO
397	33-1091	First-line supervisors of security workers	NO
398	33-1099	First-line supervisors of protective service workers, all other	NO
399	33-2011	Firefighters	NO
400	33-2021	Fire inspectors and investigators	YES
401	33-2022	Forest fire inspectors and prevention specialists	YES
402	33-3011	Bailiffs	NO
403	33-3012	Correctional officers and jailers	NO
404	33-3021	Detectives and criminal investigators	NO
405	33-3031	Fish and game wardens	NO
406	33-3041	Parking enforcement workers	NO
407	33-3051	Police and sheriff's patrol officers	NO
408	33-3052	Transit and railroad police	NO
409	33-9011	Animal control workers	NO
410	33-9021	Private detectives and investigators	NO
411	33-9031	Gambling surveillance officers and gambling investigators	NO
412	33-9032	Security guards	NO
413	33-9091	Crossing guards and flaggers	NO
414	33-9092	Lifeguards, ski patrol, and other recreational protective service workers	NO
415	33-9093	Transportation security screeners	NO
416	33-9094	School bus monitors	NO

Table 1
List of STEM and Non-STEM Occupations
 Continued

ID #	SIC Code	Occupation	STEM?
417	33-9099	Protective service workers, all other	NO
418	35-1011	Chefs and head cooks	NO
419	35-1012	First-line supervisors of food preparation and serving workers	NO
420	35-2011	Cooks, fast food	NO
421	35-2012	Cooks, institution, and cafeteria	NO
422	35-2013	Cooks, private household	NO
423	35-2014	Cooks, restaurant	NO
424	35-2015	Cooks, short order	NO
425	35-2019	Cooks, all other	NO
426	35-2021	Food preparation workers	NO
427	35-3011	Bartenders	NO
428	35-3023	Fast food and counter workers	NO
429	35-3031	Waiters and waitresses	NO
430	35-3041	Food servers, non-restaurant	NO
431	35-9011	Dining room and cafeteria attendants and bartender helpers	NO
432	35-9021	Dishwashers	NO
433	35-9031	Hosts and hostesses, restaurant, lounge, and coffee shop	NO
434	35-9099	Food preparation and serving related workers, all other	NO
435	37-1011	First-line supervisors of housekeeping and janitorial workers	NO
436	37-1012	First-line supervisors of landscaping, lawn service, and groundskeeping workers	NO
437	37-2011	Janitors and cleaners, except maids and housekeeping cleaners	NO
438	37-2012	Maids and housekeeping cleaners	NO
439	37-2019	Building cleaning workers, all other	NO
440	37-2021	Pest control workers	NO
441	37-3011	Landscaping and groundskeeping workers	NO
442	37-3012	Pesticide handlers, sprayers, and applicators, vegetation	NO

Table 1
List of STEM and Non-STEM Occupations
 Continued

ID #	SIC Code	Occupation	STEM?
443	37-3013	Tree trimmers and pruners	NO
444	37-3019	Grounds maintenance workers, all other	NO
445	39-1013	First-line supervisors of gambling services workers	NO
446	39-1014	First-line supervisors of entertainment and recreation workers, except gambling services	NO
447	39-1022	First-line supervisors of personal service workers	NO
448	39-2011	Animal trainers	NO
449	39-2021	Animal caretakers	NO
450	39-3011	Gambling dealers	NO
451	39-3012	Gambling and sports book writers and runners	NO
452	39-3019	Gambling service workers, all other	NO
453	39-3021	Motion picture projectionists	NO
454	39-3031	Ushers, lobby attendants, and ticket takers	NO
455	39-3091	Amusement and recreation attendants	NO
456	39-3092	Costume attendants	NO
457	39-3093	Locker room, coatroom, and dressing room attendants	NO
458	39-3099	Entertainment attendants and related workers, all other	NO
459	39-4011	Embalmers	YES
460	39-4012	Crematory operators	YES
461	39-4021	Funeral attendants	NO
462	39-4031	Morticians, undertakers, and funeral arrangers	YES
463	39-5011	Barbers	NO
464	39-5012	Hairdressers, hairstylists, and cosmetologists	NO
465	39-5091	Makeup artists, theatrical and performance	NO
466	39-5092	Manicurists and pedicurists	NO
467	39-5093	Shampooers	NO
468	39-5094	Skincare specialists	NO

Table 1
List of STEM and Non-STEM Occupations
 Continued

ID #	SIC Code	Occupation	STEM?
469	39-6011	Baggage porters and bellhops	NO
470	39-6012	Concierges	NO
471	39-7010	Tour and travel guides	NO
472	39-9011	Childcare workers	NO
473	39-9031	Exercise trainers and group fitness instructors	NO
474	39-9032	Recreation workers	NO
475	39-9041	Residential advisors	NO
476	39-9099	Personal care and service workers, all other	NO
477	41-1011	First-line supervisors of retail sales workers	NO
478	41-1012	First-line supervisors of non-retail sales workers	NO
479	41-2011	Cashiers	NO
480	41-2012	Gambling change persons and booth cashiers	NO
481	41-2021	Counter and rental clerks	NO
482	41-2022	Parts salespersons	NO
483	41-2031	Retail salespersons	NO
484	41-3011	Advertising sales agents	NO
485	41-3021	Insurance sales agents	NO
486	41-3031	Securities, commodities, and financial services sales agents	NO
487	41-3041	Travel agents	NO
488	41-3091	Sales representatives of services, except advertising, insurance, financial services, and travel	NO
489	41-4011	Sales representatives, wholesale and manufacturing, technical and scientific products	YES
490	41-4012	Sales representatives, wholesale, and manufacturing, except technical and scientific products	NO
491	41-9011	Demonstrators and product promoters	NO
492	41-9012	Models	NO
493	41-9021	Real estate brokers	NO
494	41-9022	Real estate sales agents	NO

Table 1
List of STEM and Non-STEM Occupations
 Continued

ID #	SIC Code	Occupation	STEM?
495	41-9031	Sales engineers	NO
496	41-9041	Telemarketers	NO
497	41-9091	Door-to-door sales workers, news and street vendors, and related workers	NO
498	41-9099	Sales and related workers, all other	NO
499	43-1011	First-line supervisors of office and administrative support workers	NO
500	43-2011	Switchboard operators, including answering service	NO
501	43-2021	Telephone operators	NO
502	43-2099	Communications equipment operators, all other	YES
503	43-3011	Bill and account collectors	NO
504	43-3021	Billing and posting clerks	YES
505	43-3031	Bookkeeping, accounting, and auditing clerks	YES
506	43-3041	Gambling cage workers	NO
507	43-3051	Payroll and timekeeping clerks	YES
508	43-3061	Procurement clerks	YES
509	43-3071	Tellers	NO
510	43-3099	Financial clerks, all other	YES
511	43-4011	Brokerage clerks	YES
512	43-4021	Correspondence clerks	NO
513	43-4031	Court, municipal, and license clerks	NO
514	43-4041	Credit authorizers, checkers, and clerks	YES
515	43-4051	Customer service representatives	NO
516	43-4061	Eligibility interviewers, government programs	NO
517	43-4071	File clerks	NO
518	43-4081	Hotel, motel, and resort desk clerks	NO
519	43-4111	Interviewers, except eligibility and loan	NO
520	43-4121	Library assistants, clerical	NO

Table 1
List of STEM and Non-STEM Occupations
 Continued

ID #	SIC Code	Occupation	STEM?
521	43-4131	Loan interviewers and clerks	NO
522	43-4141	New accounts clerks	NO
523	43-4151	Order clerks	NO
524	43-4161	Human resources assistants, except payroll and timekeeping	NO
525	43-4171	Receptionists and information clerks	NO
526	43-4181	Reservation and transportation ticket agents and travel clerks	NO
527	43-4199	Information and record clerks, all other	NO
528	43-5011	Cargo and freight agents	NO
529	43-5021	Couriers and messengers	NO
530	43-5031	Public safety telecommunicators	NO
531	43-5032	Dispatchers, except police, fire, and ambulance	NO
532	43-5041	Meter readers, utilities	NO
533	43-5051	Postal service clerks	NO
534	43-5052	Postal service mail carriers	NO
535	43-5053	Postal service mail sorters, processors, and processing machine operators	YES
536	43-5061	Production, planning, and expediting clerks	YES
537	43-5071	Shipping, receiving, and inventory clerks	NO
538	43-5111	Weighers, measurers, checkers, and samplers, recordkeeping	YES
539	43-6011	Executive secretaries and executive administrative assistants	NO
540	43-6012	Legal secretaries and administrative assistants	NO
541	43-6013	Medical secretaries and administrative assistants	YES
542	43-6014	Secretaries and administrative assistants, except legal, medical, and executive	NO
543	43-9021	Data entry keyers	NO
544	43-9022	Word processors and typists	NO
545	43-9031	Desktop publishers	NO
546	43-9041	Insurance claims and policy processing clerks	YES

Table 1
List of STEM and Non-STEM Occupations
 Continued

ID #	SIC Code	Occupation	STEM?
547	43-9051	Mail clerks and mail machine operators, except postal service	YES
548	43-9061	Office clerks, general	NO
549	43-9071	Office machine operators, except computer	YES
550	43-9081	Proofreaders and copy markers	NO
551	43-9111	Statistical assistants	YES
552	43-9199	Office and administrative support workers, all other	NO
553	45-1011	First-line supervisors of farming, fishing, and forestry workers	NO
554	45-2011	Agricultural inspectors	YES
555	45-2021	Animal breeders	YES
556	45-2041	Graders and sorters, agricultural products	NO
557	45-2091	Agricultural equipment operators	YES
558	45-2092	Farmworkers and laborers, crop, nursery, and greenhouse	NO
559	45-2093	Farmworkers, farm, ranch, and aquacultural animals	NO
560	45-2099	Agricultural workers, all other	NO
561	45-3031	Fishing and hunting workers	NO
562	45-4011	Forest and conservation workers	NO
563	45-4021	Fallers	NO
564	45-4022	Logging equipment operators	YES
565	45-4023	Log graders and scalers	NO
566	45-4029	Logging workers, all other	NO
567	47-1011	First-line supervisors of construction trades and extraction workers	YES
568	47-2011	Boilermakers	YES
569	47-2021	Brick masons and block masons	NO
570	47-2022	Stonemasons	NO
571	47-2031	Carpenters	NO
572	47-2041	Carpet installers	NO

Table 1
List of STEM and Non-STEM Occupations
 Continued

ID #	SIC Code	Occupation	STEM?
573	47-2042	Floor layers, except carpet, wood, and hard tiles	NO
574	47-2043	Floor sanders and finishers	NO
575	47-2044	Tile and stone setters	NO
576	47-2051	Cement masons and concrete finishers	NO
577	47-2053	Terrazzo workers and finishers	NO
578	47-2061	Construction laborers	NO
579	47-2071	Paving, surfacing, and tamping equipment operators	NO
580	47-2072	Pile driver operators	NO
581	47-2073	Operating engineers and other construction equipment operators	YES
582	47-2081	Drywall and ceiling tile installers	NO
583	47-2082	Tapers	NO
584	47-2111	Electricians	YES
585	47-2121	Glaziers	NO
586	47-2131	Insulation workers, floor, ceiling, and wall	NO
587	47-2132	Insulation workers, mechanical	YES
588	47-2141	Painters, construction, and maintenance	NO
589	47-2142	Paperhangers	NO
590	47-2151	Pipelayers	NO
591	47-2152	Plumbers, pipefitters, and steamfitters	YES
592	47-2161	Plasterers and stucco masons	NO
593	47-2171	Reinforcing iron and rebar workers	NO
594	47-2181	Roofers	NO
595	47-2211	Sheet metal workers	YES
596	47-2221	Structural iron and steel workers	YES
597	47-2231	Solar photovoltaic installers	YES
598	47-3011	Helpers--brick masons, block masons, stonemasons, and tile and marble setters	NO

Table 1
List of STEM and Non-STEM Occupations
 Continued

ID #	SIC Code	Occupation	STEM?
599	47-3012	Helpers--carpenters	NO
600	47-3013	Helpers--electricians	YES
601	47-3014	Helpers--painters, paperhangers, plasterers, and stucco masons	NO
602	47-3015	Helpers--pipelayers, plumbers, pipefitters, and steamfitters	YES
603	47-3016	Helpers--roofers	NO
604	47-3019	Helpers, construction trades, all other	NO
605	47-4011	Construction and building inspectors	YES
606	47-4021	Elevator and escalator installers and repairers	YES
607	47-4031	Fence erectors	NO
608	47-4041	Hazardous materials removal workers	YES
609	47-4051	Highway maintenance workers	NO
610	47-4061	Rail-track laying and maintenance equipment operators	YES
611	47-4071	Septic tank servicers and sewer pipe cleaners	YES
612	47-4090	Miscellaneous construction and related workers	NO
613	47-5011	Derrick operators, oil and gas	YES
614	47-5012	Rotary drill operators, oil and gas	YES
615	47-5013	Service unit operators, oil and gas	YES
616	47-5022	Excavating and loading machine and dragline operators, surface mining	NO
617	47-5023	Earth drillers, except oil and gas	YES
618	47-5032	Explosives workers, ordnance handling experts, and blasters	YES
619	47-5041	Continuous mining machine operators	YES
620	47-5043	Roof bolters, mining	NO
621	47-5044	Loading and moving machine operators, underground mining	NO
622	47-5049	Underground mining machine operators, all other	YES
623	47-5051	Rock splitters, quarry	NO
624	47-5071	Roustabouts, oil and gas	NO

Table 1
List of STEM and Non-STEM Occupations
 Continued

ID #	SIC Code	Occupation	STEM?
625	47-5081	Helpers--extraction workers	YES
626	47-5099	Extraction workers, all other	YES
627	49-1011	First-line supervisors of mechanics, installers, and repairers	YES
628	49-2011	Computer, automated teller, and office machine repairers	YES
629	49-2021	Radio, cellular, and tower equipment installers and repairers	YES
630	49-2022	Telecommunications equipment installers and repairers, except line installers	YES
631	49-2091	Avionics technicians	YES
632	49-2092	Electric motor, power tool, and related repairers	YES
633	49-2093	Electrical and electronics installers and repairers, transportation equipment	YES
634	49-2094	Electrical and electronics repairers, commercial and industrial equipment	YES
635	49-2095	Electrical and electronics repairers, powerhouse, substation, and relay	YES
636	49-2096	Electronic equipment installers and repairers, motor vehicles	YES
637	49-2097	Audiovisual equipment installers and repairers	YES
638	49-2098	Security and fire alarm systems installers	YES
639	49-3011	Aircraft mechanics and service technicians	YES
640	49-3021	Automotive body and related repairers	YES
641	49-3022	Automotive glass installers and repairers	YES
642	49-3023	Automotive service technicians and mechanics	YES
643	49-3031	Bus and truck mechanics and diesel engine specialists	YES
644	49-3041	Farm equipment mechanics and service technicians	YES
645	49-3042	Mobile heavy equipment mechanics, except engines	YES
646	49-3043	Rail car repairers	YES
647	49-3051	Motorboat mechanics and service technicians	YES
648	49-3052	Motorcycle mechanics	YES
649	49-3053	Outdoor power equipment and other small engine mechanics	YES
650	49-3091	Bicycle repairers	NO

Table 1
List of STEM and Non-STEM Occupations
 Continued

ID #	SIC Code	Occupation	STEM?
651	49-3092	Recreational vehicle service technicians	YES
652	49-3093	Tire repairers and changers	NO
653	49-9011	Mechanical door repairers	YES
654	49-9012	Control and valve installers and repairers, except mechanical door	YES
655	49-9021	Heating, air conditioning, and refrigeration mechanics and installers	YES
656	49-9031	Home appliance repairers	YES
657	49-9041	Industrial machinery mechanics	YES
658	49-9043	Maintenance workers, machinery	YES
659	49-9044	Millwrights	YES
660	49-9045	Refractory materials repairers, except brick masons	YES
661	49-9051	Electrical power-line installers and repairers	YES
662	49-9052	Telecommunications line installers and repairers	YES
663	49-9061	Camera and photographic equipment repairers	YES
664	49-9062	Medical equipment repairers	YES
665	49-9063	Musical instrument repairers and tuners	YES
666	49-9064	Watch and clock repairers	YES
667	49-9069	Precision instrument and equipment repairers, all other	YES
668	49-9071	Maintenance and repair workers, general	YES
669	49-9081	Wind turbine service technicians	YES
670	49-9091	Coin, vending, and amusement machine servicers and repairers	YES
671	49-9092	Commercial divers	NO
672	49-9094	Locksmiths and safe repairers	NO
673	49-9095	Manufactured building and mobile home installers	NO
674	49-9096	Riggers	YES
675	49-9097	Signal and track switch repairers	YES
676	49-9098	Helpers--installation, maintenance, and repair workers	YES

Table 1
List of STEM and Non-STEM Occupations
 Continued

ID #	SIC Code	Occupation	STEM?
677	49-9099	Installation, maintenance, and repair workers, all other	YES
678	51-1011	First-line supervisors of production and operating workers	YES
679	51-2011	Aircraft structure, surfaces, rigging, and systems assemblers	YES
680	51-2021	Coil winders, tapers, and finishers	YES
681	51-2028	Electrical, electronic, and electromechanical assemblers, except coil winders, tapers, and finishers	YES
682	51-2031	Engine and other machine assemblers	YES
683	51-2041	Structural metal fabricators and fitters	YES
684	51-2051	Fiberglass laminators and fabricators	YES
685	51-2061	Timing device assemblers and adjusters	YES
686	51-2090	Miscellaneous assemblers and fabricators	YES
687	51-3011	Bakers	NO
688	51-3021	Butchers and meat cutters	NO
689	51-3022	Meat, poultry, and fish cutters and trimmers	NO
690	51-3023	Slaughterers and meat packers	NO
691	51-3091	Food and tobacco roasting, baking, and drying machine operators and tenders	NO
692	51-3092	Food batchmakers	NO
693	51-3093	Food cooking machine operators and tenders	NO
694	51-3099	Food processing workers, all other	NO
695	51-4021	Extruding and drawing machine setters, operators, and tenders, metal and plastic	YES
696	51-4022	Forging machine setters, operators, and tenders, metal and plastic	YES
697	51-4023	Rolling machine setters, operators, and tenders, metal and plastic	YES
698	51-4031	Cutting, punching, and press machine setters, operators, and tenders, metal and plastic	YES
699	51-4032	Drilling and boring machine tool setters, operators, and tenders, metal and plastic	YES
700	51-4033	Grinding, lapping, polishing, and buffing machine tool setters, operators, and tenders, metal and plastic	YES
701	51-4034	Lathe and turning machine tool setters, operators, and tenders, metal and plastic	YES
702	51-4035	Milling and planing machine setters, operators, and tenders, metal and plastic	YES

Table 1
List of STEM and Non-STEM Occupations
 Continued

ID #	SIC Code	Occupation	STEM?
703	51-4041	Machinists	YES
704	51-4051	Metal-refining furnace operators and tenders	YES
705	51-4052	Pourers and casters, metal	NO
706	51-4061	Model makers, metal and plastic	YES
707	51-4062	Patternmakers, metal and plastic	YES
708	51-4071	Foundry mold and coremakers	YES
709	51-4072	Molding, coremaking, and casting machine setters, operators, and tenders, metal and plastic	YES
710	51-4081	Multiple machine tool setters, operators, and tenders, metal and plastic	YES
711	51-4111	Tool and die makers	YES
712	51-4121	Welders, cutters, solderers, and brazers	YES
713	51-4122	Welding, soldering, and brazing machine setters, operators, and tenders	YES
714	51-4191	Heat treating equipment setters, operators, and tenders, metal and plastic	YES
715	51-4192	Layout workers, metal and plastic	NO
716	51-4193	Plating machine setters, operators, and tenders, metal and plastic	YES
717	51-4194	Tool grinders, filers, and sharpeners	NO
718	51-4199	Metal workers and plastic workers, all other	YES
719	51-5111	Prepress technicians and workers	YES
720	51-5112	Printing press operators	YES
721	51-5113	Print binding and finishing workers	NO
722	51-6011	Laundry and dry-cleaning workers	NO
723	51-6021	Pressers, textile, garment, and related materials	NO
724	51-6031	Sewing machine operators	NO
725	51-6041	Shoe and leather workers and repairers	NO
726	51-6042	Shoe machine operators and tenders	NO
727	51-6051	Sewers, hand	NO
728	51-6052	Tailors, dressmakers, and custom sewers	NO

Table 1
List of STEM and Non-STEM Occupations
 Continued

ID #	SIC Code	Occupation	STEM?
729	51-6061	Textile bleaching and dyeing machine operators and tenders	NO
730	51-6062	Textile cutting machine setters, operators, and tenders	NO
731	51-6063	Textile knitting and weaving machine setters, operators, and tenders	NO
732	51-6064	Textile winding, twisting, and drawing out machine setters, operators, and tenders	NO
733	51-6091	Extruding and forming machine setters, operators, and tenders, synthetic and glass fibers	NO
734	51-6092	Fabric and apparel patternmakers	NO
735	51-6093	Upholsterers	NO
736	51-6099	Textile, apparel, and furnishings workers, all other	NO
737	51-7011	Cabinetmakers and bench carpenters	NO
738	51-7021	Furniture finishers	NO
739	51-7031	Model makers, wood	YES
740	51-7032	Patternmakers, wood	YES
741	51-7041	Sawing machine setters, operators, and tenders, wood	NO
742	51-7042	Woodworking machine setters, operators, and tenders, except sawing	NO
743	51-7099	Woodworkers, all other	NO
744	51-8011	Nuclear power reactor operators	YES
745	51-8012	Power distributors and dispatchers	YES
746	51-8013	Power plant operators	YES
747	51-8021	Stationary engineers and boiler operators	YES
748	51-8031	Water and wastewater treatment plant and system operators	YES
749	51-8091	Chemical plant and system operators	YES
750	51-8092	Gas plant operators	YES
751	51-8093	Petroleum pump system operators, refinery operators, and gaugers	YES
752	51-8099	Plant and system operators, all other	YES
753	51-9011	Chemical equipment operators and tenders	YES
754	51-9012	Separating, filtering, clarifying, precipitating, and still machine setters, operators, and tenders	YES

Table 1
List of STEM and Non-STEM Occupations
 Continued

ID #	SIC Code	Occupation	STEM?
755	51-9021	Crushing, grinding, and polishing machine setters, operators, and tenders	YES
756	51-9022	Grinding and polishing workers, hand	YES
757	51-9023	Mixing and blending machine setters, operators, and tenders	YES
758	51-9031	Cutters and trimmers, hand	YES
759	51-9032	Cutting and slicing machine setters, operators, and tenders	YES
760	51-9041	Extruding, forming, pressing, and compacting machine setters, operators, and tenders	YES
761	51-9051	Furnace, kiln, oven, drier, and kettle operators and tenders	YES
762	51-9061	Inspectors, testers, sorters, samplers, and weighers	YES
763	51-9071	Jewelers and precious stone and metal workers	YES
764	51-9081	Dental laboratory technicians	YES
765	51-9082	Medical appliance technicians	YES
766	51-9083	Ophthalmic laboratory technicians	YES
767	51-9111	Packaging and filling machine operators and tenders	YES
768	51-9123	Painting, coating, and decorating workers	NO
769	51-9124	Coating, painting, and spraying machine setters, operators, and tenders	NO
770	51-9141	Semiconductor processing technicians	YES
771	51-9151	Photographic process workers and processing machine operators	YES
772	51-9161	Computer numerically controlled tool operators	YES
773	51-9162	Computer numerically controlled tool programmers	YES
774	51-9191	Adhesive bonding machine operators and tenders	YES
775	51-9192	Cleaning, washing, and metal pickling equipment operators and tenders	NO
776	51-9193	Cooling and freezing equipment operators and tenders	YES
777	51-9194	Etchers and engravers	YES
778	51-9195	Molders, shapers, and casters, except metal and plastic	NO
779	51-9196	Paper goods machine setters, operators, and tenders	YES
780	51-9197	Tire builders	YES

Table 1
List of STEM and Non-STEM Occupations
 Continued

ID #	SIC Code	Occupation	STEM?
781	51-9198	Helpers--production workers	NO
782	51-9199	Production workers, all other	YES
783	53-1041	Aircraft cargo handling supervisors	NO
784	53-1047	First-line supervisors of transportation and material moving workers, except aircraft cargo handling supervisors	NO
785	53-2011	Airline pilots, copilots, and flight engineers	YES
786	53-2012	Commercial pilots	YES
787	53-2021	Air traffic controllers	YES
788	53-2022	Airfield operations specialists	YES
789	53-2031	Flight attendants	NO
790	53-3011	Ambulance drivers and attendants, except emergency medical technicians	NO
791	53-3031	Driver/sales workers	NO
792	53-3032	Heavy and tractor-trailer truck drivers	NO
793	53-3033	Light truck drivers	NO
794	53-3051	Bus drivers, school	NO
795	53-3052	Bus drivers, transit and intercity	NO
796	53-3053	Shuttle drivers and chauffeurs	NO
797	53-3054	Taxi drivers	NO
798	53-3099	Motor vehicle operators, all other	NO
799	53-4011	Locomotive engineers	NO
800	53-4013	Rail yard engineers, dinkey operators, and hostlers	NO
801	53-4022	Railroad brake, signal, and switch operators and locomotive firers	NO
802	53-4031	Railroad conductors and yardmasters	NO
803	53-4041	Subway and streetcar operators	NO
804	53-4099	Rail transportation workers, all other	NO
805	53-5011	Sailors and marine oilers	NO
806	53-5021	Captains, mates, and pilots of water vessels	YES

Table 1
List of STEM and Non-STEM Occupations
 Continued

ID #	SIC Code	Occupation	STEM?
807	53-5022	Motorboat operators	NO
808	53-5031	Ship engineers	YES
809	53-6011	Bridge and lock tenders	NO
810	53-6021	Parking attendants	NO
811	53-6031	Automotive and watercraft service attendants	NO
812	53-6032	Aircraft service attendants	NO
813	53-6041	Traffic technicians	NO
814	53-6051	Transportation inspectors	YES
815	53-6061	Passenger attendants	NO
816	53-6099	Transportation workers, all other	NO
817	53-7011	Conveyor operators and tenders	YES
818	53-7021	Crane and tower operators	YES
819	53-7031	Dredge operators	YES
820	53-7041	Hoist and winch operators	YES
821	53-7051	Industrial truck and tractor operators	NO
822	53-7061	Cleaners of vehicles and equipment	NO
823	53-7062	Laborers and freight, stock, and material movers, hand	NO
824	53-7063	Machine feeders and offbearers	NO
825	53-7064	Packers and packagers, hand	NO
826	53-7065	Stockers and order fillers	NO
827	53-7071	Gas compressor and gas pumping station operators	YES
828	53-7072	Pump operators, except wellhead pumpers	YES
829	53-7073	Wellhead pumpers	YES
830	53-7081	Refuse and recyclable material collectors	NO
831	53-7121	Tank car, truck, and ship loaders	NO
832	53-7199	Material moving workers, all other	NO

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Radiologists

Civil Engineers

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Phlebotomists

Embalmers

Statistical Assistants

Soil Scientists

Boilermakers

Wind Turbine Service Technicians

Aeronautical Engineer

Wastewater Treatment Plant Operators

Digital Interface Designers

Food Science Technicians