Nationally, about 1 in 16 workers (6.2% or 9 million) have occupations as scientists or engineers (4.9%), or technical workers (1.3%). The STEM workforce is larger still when defined as either those who hold a bachelor’s degree or higher in S&E (24.5 million) or those who use S&E technical expertise in their jobs (23.8 million), regardless of level of degree.

A state’s S&E performance helps fuel its and the nation’s economy. Four benchmarks of Arizona’s S&E performance are highlighted here: the cost of public higher education, the size of the STEM workforce, investment in research and development, and venture capital funding.

Rising Cost of a Bachelor’s Degree

A bachelor’s degree is one of several entry points to higher paying jobs associated with science, engineering, and many technical occupations. Nationally, 34% of the total U.S. workforce has a bachelor’s degree or higher. In contrast, 76% of workers in S&E occupations have a bachelor’s degree or higher.

Source: National Center for Education Statistics, Digest of Education Statistics

STEM Workforce: People Working in STEM Occupations

Nationally, about 1 in 16 workers (6.2% or 9 million) have occupations as scientists or engineers (4.9%), or technical workers (1.3%). The STEM workforce is larger still when defined as either those who hold a bachelor’s degree or higher in S&E (24.5 million) or those who use S&E technical expertise in their jobs (23.8 million), regardless of level of degree.


*2017 Scientists/Engineers data and 2016 Technical Occupation data; 2018 data is not available for Arizona.
Real Change in Research & Development Performed

Research and development (R&D) spending is a driver of innovation. Investing in science and technology today has ripple-effect benefits throughout the economy over the long term.

Annual state performance in R&D varies considerably, from $289 million (SD) to $135.1 billion (CA). Arizona is one of 15 states that performs between $5 to $15 billion per year in R&D. In this figure, Arizona’s percent change in R&D spending is compared to the two highest and the two lowest states within this group.

Total 2016 Research and Development Performed

<table>
<thead>
<tr>
<th>State</th>
<th>Total R&amp;D Spending 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>AZ</td>
<td>$8.0B</td>
</tr>
<tr>
<td>U.S.</td>
<td>$515.3B</td>
</tr>
</tbody>
</table>

Percent change in R&D spending: 2000 to 2016
(Adjusted for inflation to 2016 dollars)

Highest two:
- 150.3% OR
- 109.5% AL

Lowest two:
- 85.7% Arizona
- 38.0% U.S.
- 16.6% CO
- 12.3% OH

Year 2000 R&D Spending Level

Venture Capital Investment

Venture capital investment supports U.S. businesses that take on the risk of developing and commercializing cutting-edge, emerging technologies. States with high values are successful at attracting venture capital to fuel new kinds of business, and ultimately, expand economic growth.

Total 2017 Venture Capital Investment

<table>
<thead>
<tr>
<th>State</th>
<th>Total Venture Capital Investment 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>AZ</td>
<td>$177M</td>
</tr>
<tr>
<td>U.S.</td>
<td>$80.6B</td>
</tr>
</tbody>
</table>

Source:
- NSF, National Center for Science and Engineering Statistics, National Patterns of R&D Resources
- Pitchbook Venture Capital and Private Equity Database

National Science Board | NationalScienceBrd@nsf.gov | 703.292.7000
NSB Indicators Resource Page | nsf.gov/nsb/sei
National Science Foundation | ncses.nsf.gov/indicators