Nationally, about 1 in 16 workers (6.2% or 8.7 million) have occupations as scientists or engineers (4.8%), or technical workers (1.4%). The STEM workforce is larger still when defined as either those who hold a bachelor’s degree or higher in S&E (23.2 million) or those who use technical expertise in S&E in their jobs (19.4 million).

A state’s S&E performance helps fuel its and the nation’s economy. Four benchmarks of Iowa’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, 31% of the total U.S. workforce has a bachelor’s degree or higher. In contrast, 75% of workers in S&E occupations have a bachelor’s degree or higher.

The average annual in-state cost of a public 4-year institution (adjusted for inflation to 2016 dollars) is as follows:

- **2000**: $5,000
- **2005**: $10,000
- **2010**: $15,000
- **2016**: $20,000

For Iowa, the average annual in-state cost of a public 4-year institution as of 2016 was $20,000.

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 8.7 million) have occupations as scientists or engineers (4.8%), or technical workers (1.4%). The STEM workforce is larger still when defined as either those who hold a bachelor’s degree or higher in S&E (23.2 million) or those who use technical expertise in S&E in their jobs (19.4 million).

Jobs in S&E as a percent of all jobs in 2016:

- **Iowa**: Scientists/Engineers: 3.5%, Workers in Technical Occupations: 1.2%
- **U.S.**: Scientists/Engineers: 4.8%, Workers in Technical Occupations: 1.4%

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 $253 million (WY) to $126 billion (CA). Iowa is one of 14 states plus the District of Columbia that performs between $1-$5 billion per year in R&D. In this figure, Iowa’s percent change in R&D spending is compared to the second highest state and the two lowest states within this group.

### Total 2015 Research and Development Performed

<table>
<thead>
<tr>
<th>State</th>
<th>R&amp;D Spending</th>
</tr>
</thead>
<tbody>
<tr>
<td>IA</td>
<td>$3.4B</td>
</tr>
<tr>
<td>U.S.</td>
<td>$495.1B</td>
</tr>
</tbody>
</table>

Source: NSF, National Center for Science and Engineering Statistics, National Patterns of R&D Resources

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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 2016 Venture Capital Investment

<table>
<thead>
<tr>
<th>State</th>
<th>Venture Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>IA</td>
<td>$43M</td>
</tr>
<tr>
<td>U.S.</td>
<td>$70.3B</td>
</tr>
</tbody>
</table>

Source: Pitchbook Venture Capital and Private Equity Database