According to the latest data released by the National Science Board in its *2020 Science and Engineering Indicators* report, the United States leads in a number of science and engineering (S&E) measures. For example, the U.S. invests the most in research and development, attracts the most venture capital, awards the most doctoral degrees, and provides the most business, financial, and information services.

A state's S&E performance helps fuel its and the nation's economy. Four benchmarks of North Dakota'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.

#### Average annual in-state cost of a public 4-year institution (Adjusted for inflation to 2018 dollars)

<table>
<thead>
<tr>
<th>Year</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>$10,000</td>
</tr>
<tr>
<td>2005</td>
<td>$15,000</td>
</tr>
<tr>
<td>2010</td>
<td>$20,000</td>
</tr>
<tr>
<td>2015</td>
<td>$25,000</td>
</tr>
<tr>
<td>2018</td>
<td>$30,000</td>
</tr>
</tbody>
</table>

**North Dakota**
- $15,000

**U.S.**
- $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 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.

#### Jobs in S&E as a percent of all jobs in 2018

<table>
<thead>
<tr>
<th>Region</th>
<th>Scientists/Engineers</th>
<th>Workers in Technical Occupations</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Dakota</td>
<td>3.5%</td>
<td>1.4%</td>
</tr>
<tr>
<td>U.S.</td>
<td>4.9%</td>
<td>1.3%</td>
</tr>
</tbody>
</table>

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). North Dakota is one of 12 states that performs between $0 to $1 billion per year in R&D. In this figure, North Dakota’s percent change in R&D spending is compared to the highest and the two lowest states within this group.

### Total 2016 Research and Development Performed

<table>
<thead>
<tr>
<th>State</th>
<th>R&amp;D Spending</th>
</tr>
</thead>
<tbody>
<tr>
<td>ND</td>
<td>$515M</td>
</tr>
<tr>
<td>U.S.</td>
<td>$515.3B</td>
</tr>
</tbody>
</table>

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

### 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>Venture Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>ND</td>
<td>&lt;$1M</td>
</tr>
<tr>
<td>U.S.</td>
<td>$80.6B</td>
</tr>
</tbody>
</table>

Source: Pitchbook Venture Capital and Private Equity Database

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**Percent change in R&D spending: 2000 to 2016**

(Adjusted for inflation to 2016 dollars)

- **Highest two:**
  - 243.4% WY
  - 153.1% North Dakota

- **Lowest two:**
  - -29.4% WV
  - -42% VT

**Year 2000 R&D Spending Level**

- **2000**
- **2016**

**Total annual venture capital investment: 2000 to 2017**

(Adjusted for inflation to 2017 dollars)

- **North Dakota Total**
- **50 States & D.C. Median**

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