

TEconomy/BIO

The Value of Bioscience Innovation in Growing Jobs and Improving Quality of Life 2016

Colorado

Colorado's bioscience industry is large and growing with nearly 30,000 employed in 2014 following 4.4 percent job growth since 2012. Industry growth in the state has been led by gains in bioscience-related distribution and in research, testing, and medical labs. Colorado has a highly specialized employment concentration in medical device and equipment manufacturing, its location quotient is 1.60 or 60 percent more concentrated relative to the national average. Colorado bioscience companies have received \$1.0 billion in venture capital investments since 2012 with three segments receiving more than \$200 million each—human biotechnology, biofuels, and health information technology. Patents in bioscience-related technology areas have been increasing in Colorado. State inventors have been issued 2,931 patents in bioscience-related technologies since 2012 with medical and surgical devices as the leading focus area.

Bioscience Performance Metrics

Summary of State Performance in Selected Bioscience-related Metrics

| Metric | Colorado | United States | Quintile |
|--|-----------|---------------|----------|
| Bioscience Industry, 2014 | | | |
| Bioscience Industry Employment | 29,774 | 1,655,680 | II |
| Bioscience Industry Location Quotient | 1.03 | n/a | II |
| Bioscience Industry Establishments | 1,833 | 77,283 | II |
| Academic Bioscience R&D Expenditures, FY 2014 | | | |
| Bioscience R&D (\$ thousands) | \$554,648 | \$38,873,926 | II |
| Bioscience Share of Total R&D | 47% | 61% | IV |
| Bioscience R&D Per Capita | \$104 | \$122 | III |
| NIH Funding, FY 2015 | | | |
| Funding (\$ thousands) | \$328,799 | \$22,869,746 | II |
| Funding Per Capita | \$60 | \$71 | II |
| Bioscience Venture Capital Investments, 2012–15 (\$ millions) | \$1,019.0 | \$48,742.10 | II |
| Bioscience and Related Patents, 2012–15 | 2,931 | 101,026 | II |

State ranking figures for bioscience performance metrics are calculated as quintiles, where:

top quintile – I II III IV V – bottom quintile

For source notes, see end of State Profile.



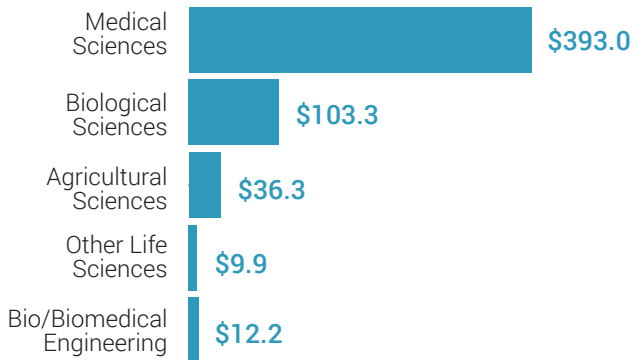
| Industry Subsector | Colorado | | United States | |
|--|-----------|------------------|---------------|------------------|
| | 2014 | 2012–2014 Change | 2014 | 2012–2014 Change |
| Agricultural Feedstock and Chemicals | | | | |
| Establishments | 22 | -17.2% | 1,811 | 2.2% |
| Employment | 323 | -3.1% | 77,545 | 1.5% |
| Location Quotient | 0.24 | | n/a | |
| Direct-Effect Employment Multiplier | 15.2 | | 18.4 | |
| Total Employment Impact | 4,913 | | 1,432,125 | |
| Average Annual Wage | \$57,396 | 6.9% | \$80,640 | 6.3% |
| Bioscience-Related Distribution | | | | |
| Establishments | 1,028 | 27.9% | 37,833 | 2.8% |
| Employment | 8,809 | 9.1% | 452,325 | 2.3% |
| Location Quotient | 1.12 | | n/a | |
| Direct-Effect Employment Multiplier | 3.2 | | 3.0 | |
| Total Employment Impact | 28,149 | | 1,358,820 | |
| Average Annual Wage | \$100,257 | 9.2% | \$90,458 | 6.2% |
| Drugs and Pharmaceuticals | | | | |
| Establishments | 84 | 40.0% | 3,301 | 8.0% |
| Employment | 2,953 | 0.2% | 293,353 | 3.2% |
| Location Quotient | 0.58 | | n/a | |
| Direct-Effect Employment Multiplier | 12.3 | | 11.0 | |
| Total Employment Impact | 36,449 | | 3,242,627 | |
| Average Annual Wage | \$98,839 | 9.6% | \$117,524 | 10.3% |
| Medical Devices and Equipment | | | | |
| Establishments | 153 | -1.3% | 7,636 | 5.5% |
| Employment | 9,778 | -0.2% | 349,045 | -0.1% |
| Location Quotient | 1.60 | | n/a | |
| Direct-Effect Employment Multiplier | 4.8 | | 4.6 | |
| Total Employment Impact | 46,993 | | 1,596,802 | |
| Average Annual Wage | \$81,435 | 11.2% | \$79,537 | 5.1% |
| Research, Testing, and Medical Laboratories | | | | |
| Establishments | 546 | 0.5% | 26,702 | 10.2% |
| Employment | 7,910 | 7.5% | 483,412 | 3.4% |
| Location Quotient | 0.94 | | n/a | |
| Direct-Effect Employment Multiplier | 3.4 | | 3.1 | |
| Total Employment Impact | 26,857 | | 1,554,719 | |
| Average Annual Wage | \$89,194 | 0.7% | \$97,485 | 6.8% |
| Total Bioscience Industry | | | | |
| Establishments | 1,833 | 15.4% | 77,283 | 5.7% |
| Employment | 29,774 | 4.4% | 1,655,680 | 2.2% |
| Location Quotient | 1.03 | | n/a | |
| Direct-Effect Employment Multiplier | 5.3 | | 5.5 | |
| Total Employment Impact | 159,118 | | 9,185,094 | |
| Average Annual Wage | \$90,530 | 7.8% | \$94,543 | 7.2% |
| Total Private Sector | | | | |
| Establishments | 172,730 | 2.6% | 8,937,672 | 2.7% |
| Employment | 2,026,342 | 7.1% | 116,018,300 | 4.4% |
| Average Annual Wage | \$53,068 | 4.2% | \$51,148 | 4.3% |

Note: U.S. employment metrics include Puerto Rico.

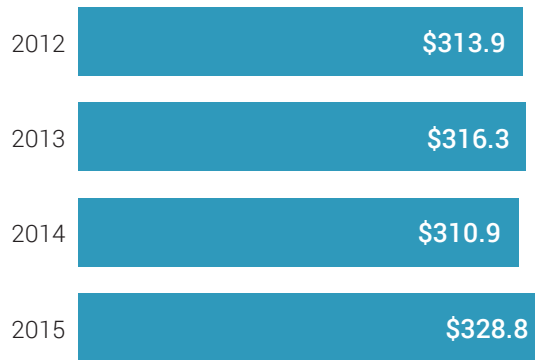


Bioscience Research in Colorado

Bioscience Academic R&D Expenditures
\$ Millions
FY 2014



NIH Awards
\$ Millions
FY 2012-2015

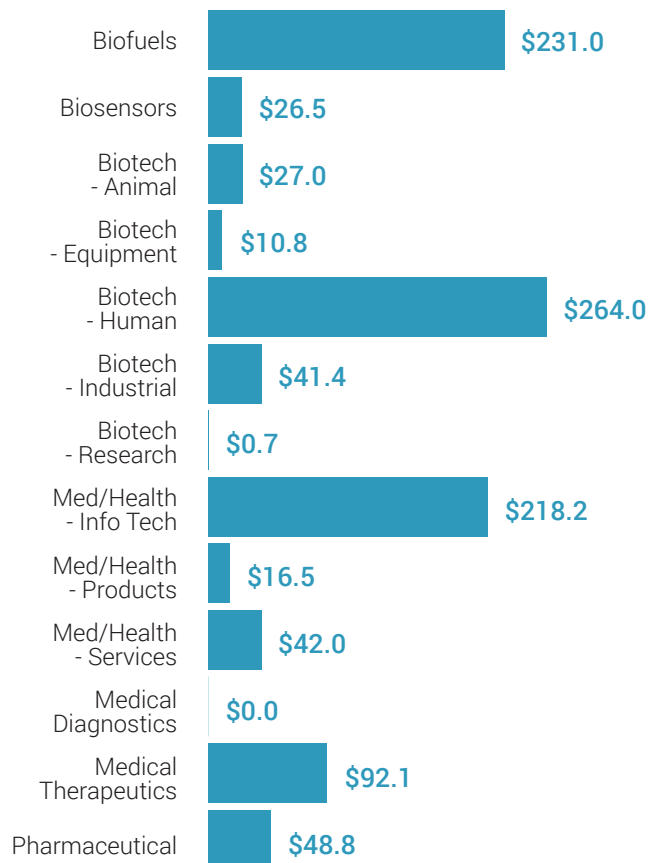


Bioscience Venture Capital in Colorado

Bioscience-Related Venture Capital Investments
\$ Millions
2012-2015



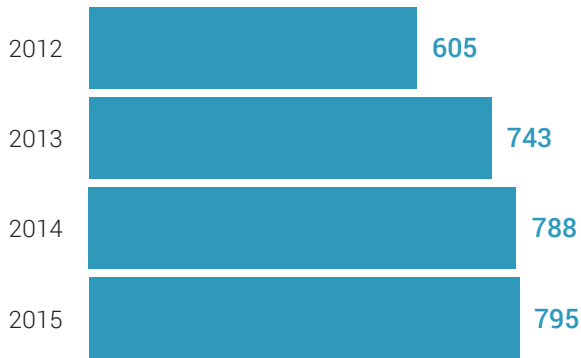
Bioscience-Related Venture Capital Investments by Segment
\$ Millions
2012-2015



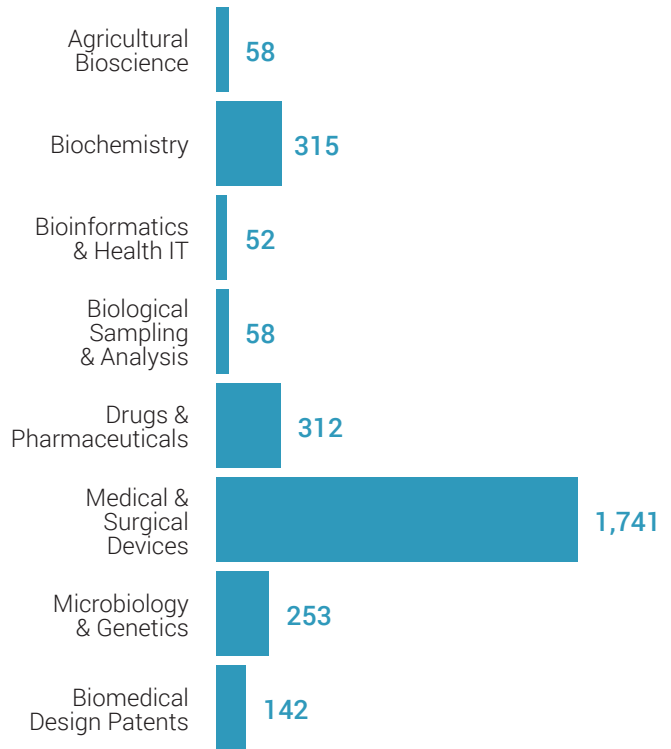


Bioscience Patents in Colorado

Bioscience-Related U.S. Patents 2012-2015



Bioscience-Related U.S. Patents by Segment 2012-2015



Source Notes

Employment, Establishments, and Wages: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW), enhanced file from the IMPLAN Group, LLC.

Employment Multipliers: IMPLAN Group, LLC state-level Input/Output models.

Academic R&D Expenditures: National Science Foundation (NSF) Higher Education Research and Development (HERD) Survey.

NIH Funding: National Institutes of Health, NIH Awards by Location & Organization (summary information within RePORT database).

Venture Capital: Thomson Reuters Thomson ONE venture capital database.

Patents: U.S. Patent & Trademark Office data from Thomson Reuters Thomson Innovation patent analysis database.

For a more detailed discussion of the data and methodology used, please see the Appendix to the full national report.

