



Vermont’s bioscience firms employed 2,622 across 204 business establishments in 2016. Bioscience employment in Vermont grew by nearly 10 percent since 2014, more than double the national average. Employment growth occurred in four of the state’s five major subsectors. Vermont is specialized in its concentration of employment in the medical devices and equipment subsector, with one-third of all bioscience jobs in the sector and a location quotient of 1.29. Vermont’s \$98 million in bioscience academic R&D accounts for 82 percent of all science and engineering R&D, which is a higher concentration than nearly every other state.

Bioscience Performance Metrics

Summary of State Performance in Selected Bioscience-related Metrics

| Metric | Vermont | United States | Quintile |
|--|----------|---------------|----------|
| Bioscience Industry, 2016 | | | |
| Bioscience Industry Employment | 2,622 | 1,743,639 | V |
| Bioscience Industry Location Quotient | 0.72 | n/a | III |
| Bioscience Industry Establishments | 204 | 85,702 | V |
| Academic Bioscience R&D Expenditures, FY 2016 | | | |
| Bioscience R&D (\$ thousands) | \$98,180 | \$41,972,205 | V |
| Bioscience Share of Total R&D | 82% | 62% | I |
| Bioscience R&D Per Capita | \$158 | \$130 | II |
| NIH Funding, FY 2017 | | | |
| Funding (\$ thousands) | \$49,305 | \$26,150,485 | IV |
| Funding Per Capita | \$79 | \$80 | II |
| Bioscience Venture Capital Investments, 2014-17 (\$ millions) | \$2.37 | \$66,168.62 | V |
| Bioscience and Related Patents, 2014-17 | 199 | 102,862 | V |

State ranking figures for bioscience performance metrics are calculated as quintiles, where I = top quintile, III = middle quintile, and V = bottom quintile. For source notes, see end of State Profile.

| Industry Subsector | Vermont | | United States | |
|--|----------|------------------|---------------|------------------|
| | 2016 | 2014-2016 Change | 2016 | 2014-2016 Change |
| Agricultural Feedstock and Industrial Biosciences | | | | |
| Establishments | 9 | 50.0% | 1,709 | -3.2% |
| Employment | 58 | 51.2% | 68,027 | -1.2% |
| Location Quotient | 0.40 | | n/a | |
| Direct-Effect Employment Multiplier | 3.71 | | | |
| Total Employment Impact | 215 | | | |
| Average Annual Wage | \$32,812 | -14.8% | \$80,961 | 2.7% |
| Bioscience-Related Distribution | | | | |
| Establishments | 102 | -11.2% | 39,149 | 3.8% |
| Employment | 660 | -8.4% | 469,640 | 3.7% |
| Location Quotient | 0.67 | | n/a | |
| Direct-Effect Employment Multiplier | 2.00 | | | |
| Total Employment Impact | 1,322 | | | |
| Average Annual Wage | \$86,393 | 21.2% | \$93,677 | 2.7% |
| Drugs and Pharmaceuticals | | | | |
| Establishments | 7 | -12.5% | 3,754 | 13.7% |
| Employment | 643 | 1.3% | 299,113 | 2.0% |
| Location Quotient | 1.02 | | n/a | |
| Direct-Effect Employment Multiplier | 4.43 | | | |
| Total Employment Impact | 2,852 | | | |
| Average Annual Wage | \$75,253 | -2.3% | \$113,815 | -3.2% |
| Medical Devices and Equipment | | | | |
| Establishments | 20 | 17.6% | 8,083 | 5.9% |
| Employment | 976 | 22.6% | 359,293 | 2.9% |
| Location Quotient | 1.29 | | n/a | |
| Direct-Effect Employment Multiplier | 2.39 | | | |
| Total Employment Impact | 2,329 | | | |
| Average Annual Wage | \$63,200 | -5.3% | \$84,746 | 6.5% |
| Research, Testing and Medical Laboratories | | | | |
| Establishments | 66 | 11.6% | 33,007 | 13.1% |
| Employment | 285 | 38.8% | 547,566 | 8.2% |
| Location Quotient | 0.25 | | n/a | |
| Direct-Effect Employment Multiplier | 1.96 | | | |
| Total Employment Impact | 557 | | | |
| Average Annual Wage | \$69,001 | -3.4% | \$106,942 | 5.5% |
| Total Bioscience Industry | | | | |
| Establishments | 204 | -0.5% | 85,702 | 7.7% |
| Employment | 2,622 | 9.5% | 1,743,639 | 4.4% |
| Location Quotient | 0.71 | | n/a | |
| Direct-Effect Employment Multiplier | 2.77 | | | |
| Total Employment Impact | 7,276 | | | |
| Average Annual Wage | \$71,954 | 1.6% | \$98,961 | 3.1% |
| Total Private Sector | | | | |
| Establishments | 23,599 | 2.7% | 9,243,034 | 3.4% |
| Employment | 254,921 | 1.4% | 120,884,570 | 4.2% |
| Average Annual Wage | \$44,134 | 4.7% | \$53,354 | 4.3% |

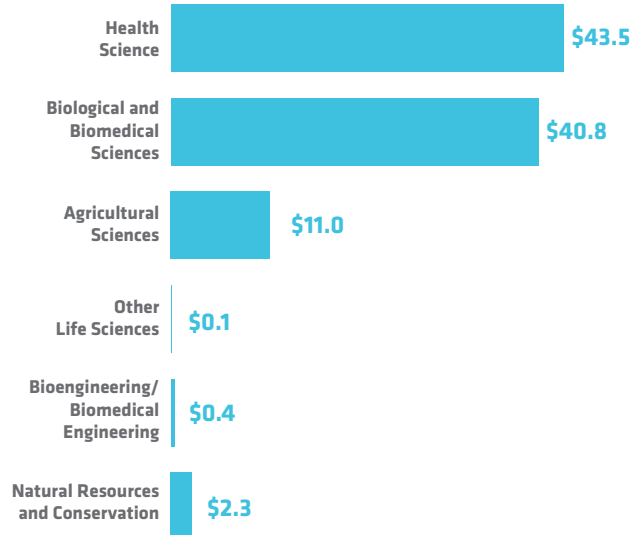
Note: U.S. employment metrics include Puerto Rico.

Bioscience Research in Vermont

Bioscience Academic R&D Expenditures

\$ Millions

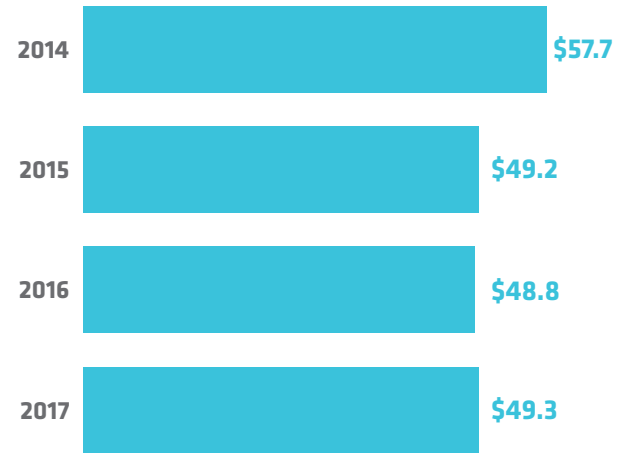
FY 2016



NIH Awards

\$ Millions

FY 2014-2017

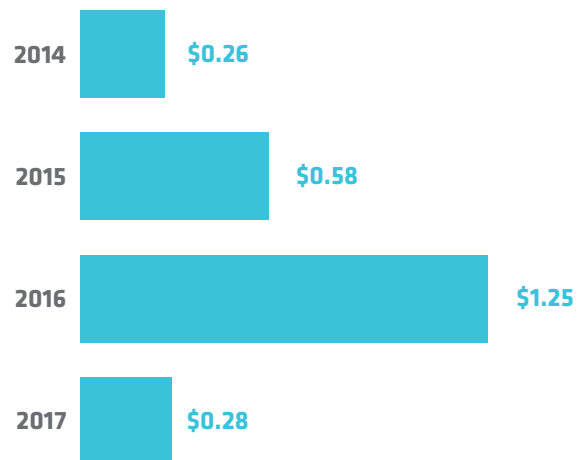


Bioscience Venture Capital in Vermont

Bioscience-Related Venture Capital Investments

\$ Millions

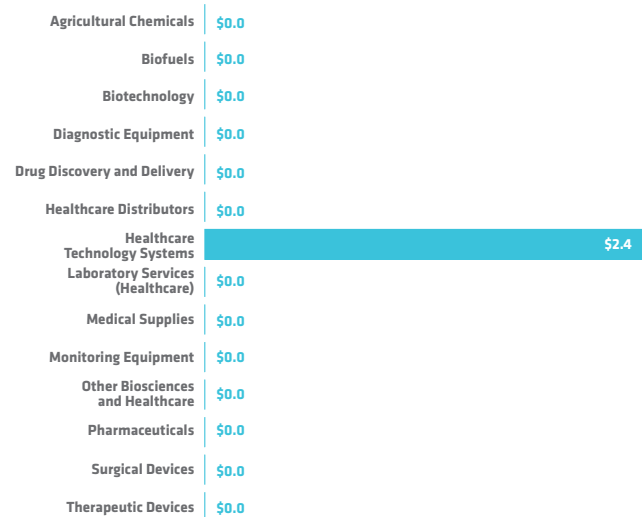
2014-2017



Bioscience-Related Venture Capital Investments by Segment

\$ Millions

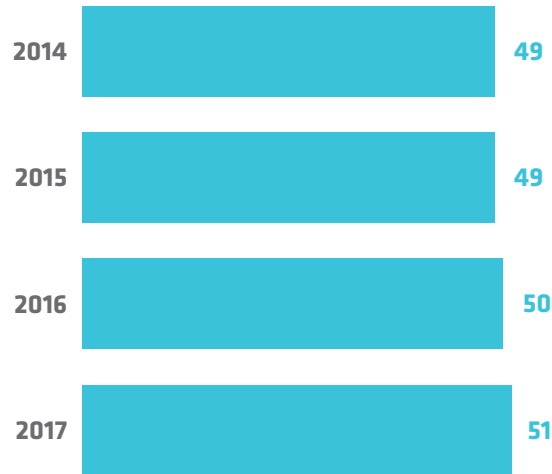
2014-2017



Bioscience Patents in Vermont

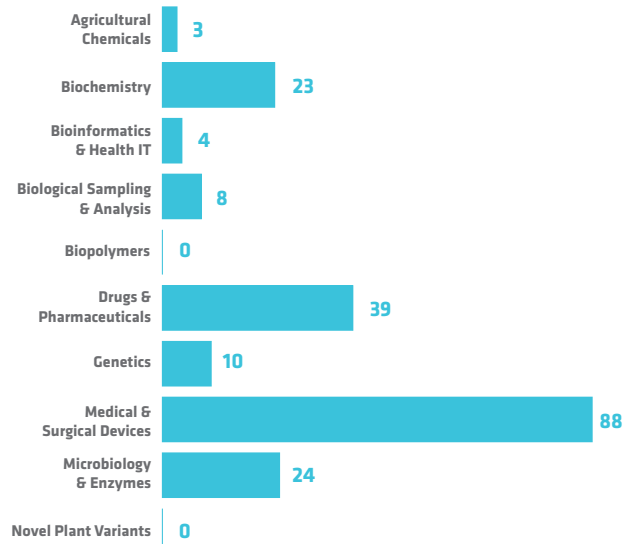
Bioscience-Related U.S. Patents

2014-2017



Bioscience-Related U.S. Patents by Segment

2014-2017



Source Notes

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

Employment Multipliers: IMPLAN 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: PitchBook Data, Inc.

Patents: U.S. Patent & Trademark Office data from Clarivate Analytics' Derwent Innovation patent analysis database. For a more detailed discussion of the data and methodology used, please see the Appendix to the full national report.