Vermont

Vermont's bioscience industry is modest in size but growing across each of its major subsectors. Since 2007, the state industry has increased employment by 50 percent and stands at nearly 2,600 jobs in 2012 across 234 business establishments. Vermont's largest bioscience subsector, medical devices and equipment, is considered to have a specialized employment concentration with 50 percent greater concentration in the state's economy relative to the national average (location quotient is 1.50). Vermont's research universities are especially focused in the biosciences relative to other fields with their $96 million in bioscience academic R&D in 2012 accounting for 79 percent of all academic research compared with 61 percent for the national average. The state has an above-average concentration of bioscience academic R&D as well as NIH funding on a per capita basis.

Bioscience Performance Metrics

Summary of State Performance in Selected Bioscience-related Metrics

Metric	Vermont	United States	Quintile
Bioscience Industry, 2012			
Bioscience Industry Employment	2,585	1,619,746	V
Bioscience Industry Location Quotient	0.72	n/a	IV
Bioscience Industry Establishments	234	73,088	V
Academic Bioscience R&D Expenditures, FY 2012			
Bioscience R&D ($ thousands)	$96,181	$38,139,876	V
Bioscience Share of Total R&D	79%	61%	I
Bioscience R&D Per Capita	$153	$119	II
NIH Funding, FY 2013			
Funding ($ thousands)	$54,870	$22,293,255	IV
Funding Per Capita	$88	$70	II
Bioscience Venture Capital Investments, 2009–13 ($ millions)	$15.2	$49,401.7	IV
Bioscience and Related Patents, 2009–13	183	100,238	V

State ranking figures for bioscience performance metrics are calculated as quintiles, where I = top quintile, III = middle quintile, and V = bottom quintile.

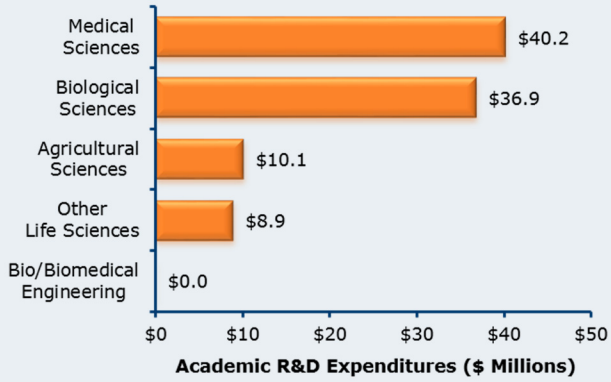
For source notes, see end of State Profile.

Industry Subsector	Vermont		United States	
	2012	2007–2012 Change	2012	2007–2012 Change
Agricultural Feedstock & Chemicals				
Establishments	5	0.0%	1,772	5.2%
Employment	33	42.4%	76,404	-1.0%
Location Quotient	0.20		n/a	
Direct-Effect Employment Multiplier	13.1		18.1	
Total Employment Impact	436		1,382,637	
Average Annual Wage	$39,471	41.7%	$75,828	14.2%
Bioscience-Related Distribution				
Establishments	155	14.4%	36,793	1.4%
Employment	812	30.5%	442,016	-3.9%
Location Quotient	0.68		n/a	
Direct-Effect Employment Multiplier	2.4		2.7	
Total Employment Impact	1,980		1,199,015	
Average Annual Wage	$85,567	5.7%	$85,188	11.5%
Drugs and Pharmaceuticals				
Establishments	8	60.0%	3,057	12.0%
Employment	422	881.4%	284,331	-10.9%
Location Quotient	0.67		n/a	
Direct-Effect Employment Multiplier	7.0		9.9	
Total Employment Impact	2,934		2,673,265	
Average Annual Wage	$75,212	34.6%	$106,576	13.9%
Medical Devices and Equipment				
Establishments	21	-4.5%	7,235	12.0%
Employment	1,162	31.0%	349,432	1.4%
Location Quotient	1.50		n/a	
Direct-Effect Employment Multiplier	3.3		3.9	
Total Employment Impact	3,867		1,318,459	
Average Annual Wage	$62,963	18.7%	$75,695	10.7%
Research, Testing, and Medical Laboratories				
Establishments	45	18.5%	24,231	31.0%
Employment	157	1.7%	467,563	9.7%
Location Quotient	0.15		n/a	
Direct-Effect Employment Multiplier	2.5		2.7	
Total Employment Impact	386		1,284,196	
Average Annual Wage	$74,153	33.9%	$91,248	15.9%
Total Bioscience Industry				
Establishments	234	13.9%	73,088	11.4%
Employment	2,585	49.5%	1,619,746	-0.4%
Location Quotient	0.72		n/a	
Direct-Effect Employment Multiplier	3.9		4.9	
Total Employment Impact	10,072		7,857,572	
Average Annual Wage	$72,436	14.9%	$88,202	12.8%
Total Private Sector				
Establishments	22,881	-1.8%	8,699,564	-0.5%
Employment	246,879	-1.8%	111,137,206	-3.1%
Average Annual Wage	$40,177	10.5%	$49,130	11.1%

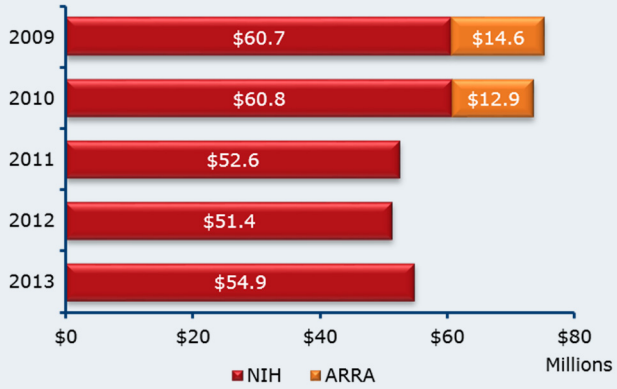
Note: U.S. employment metrics include Puerto Rico. Estimates of total impacts do not include Puerto Rico.

Bioscience Research in Vermont

Bioscience Academic R&D Expenditures, FY 2012



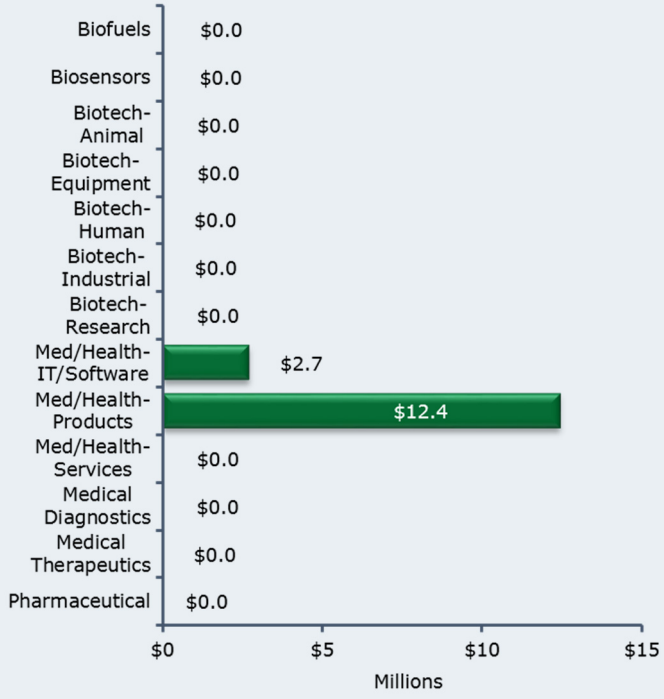
NIH Awards, 2009–2013



Bioscience Venture Capital in Vermont

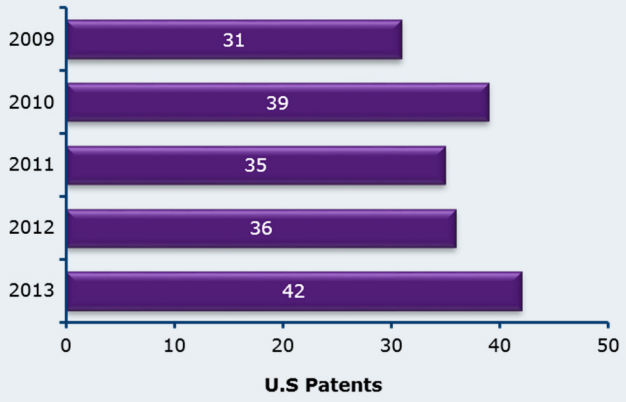
Bioscience-Related Venture Capital Investments, 2009–2013

Bioscience-Related Venture Capital Investments by Segment, 2009–2013

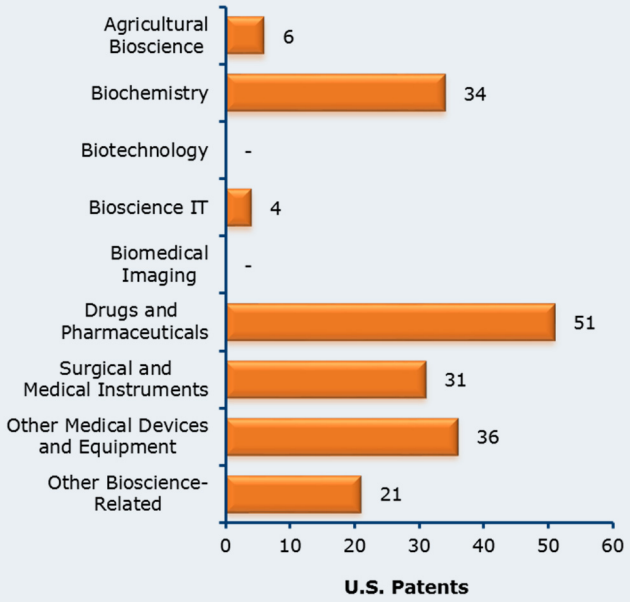


Bioscience Patents in Vermont

Bioscience-Related Patents, 2009–2013



Bioscience-Related Patents by Segment, 2009–2013



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), and NIH-managed funding for FY 2009 and FY 2010 from the American Recovery and Reinvestment Act (ARRA) website.

Venture Capital: Thomson Reuters Thomson ONE venture capital database.

Patents: U.S. Patent & Trademark Office data from Thomson Reuters Delphion Patent Analysis Database.

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