



North Carolina's bioscience industry is large, growing, and highly specialized in its overall employment concentration. In 2016, state bioscience firms employed more than 75,000 in 3,843 individual business establishments. Industry employment has grown by 2.5 percent since 2014 with two of the five industry subsectors contributing strong job growth. North Carolina has diverse strengths in the biosciences, with specialized employment concentrations in two major subsectors—drugs and pharmaceuticals and research, testing and medical labs; as well as above-average concentrations in two others—agricultural feedstock and industrial biosciences and bioscience-related distribution. North Carolina has a breadth of strengths across its innovation ecosystem—it is in the top tier of states in measures of industry size and concentration, university R&D in the biosciences, NIH funding, and venture capital investments. In bioscience-related patents, state inventors have been associated with 3,258 since 2014, which places the state in the second quintile among all states.

Bioscience Performance Metrics

Summary of State Performance in Selected Bioscience-related Metrics

Metric	North Carolina	United States	Quintile
Bioscience Industry, 2016			
Bioscience Industry Employment	75,582	1,743,639	I
Bioscience Industry Location Quotient	1.47	n/a	I
Bioscience Industry Establishments	3,843	85,702	I
Academic Bioscience R&D Expenditures, FY 2016			
Bioscience R&D (\$ thousands)	\$2,159,908	\$41,972,205	I
Bioscience Share of Total R&D	76%	62%	I
Bioscience R&D Per Capita	\$213	\$130	I
NIH Funding, FY 2017			
Funding (\$ thousands)	\$1,245,779	\$26,150,485	I
Funding Per Capita	\$121	\$80	I
Bioscience Venture Capital Investments, 2014-17 (\$ millions)	\$1,368.19	\$66,168.62	I
Bioscience and Related Patents, 2014-17	3,258	102,862	II

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	North Carolina		United States	
	2016	2014-2016 Change	2016	2014-2016 Change
Agricultural Feedstock and Industrial Biosciences				
Establishments	45	-10.0%	1,709	-3.2%
Employment	2,331	-12.8%	68,027	-1.2%
Location Quotient	1.16		n/a	
Direct-Effect Employment Multiplier	6.38			
Total Employment Impact	14,872			
Average Annual Wage	\$101,868	10.5%	\$80,961	2.7%
Bioscience-Related Distribution				
Establishments	1,615	12.5%	39,149	3.8%
Employment	15,287	4.9%	469,640	3.7%
Location Quotient	1.10		n/a	
Direct-Effect Employment Multiplier	2.26			
Total Employment Impact	34,602			
Average Annual Wage	\$91,048	5.6%	\$93,677	2.7%
Drugs and Pharmaceuticals				
Establishments	125	5.9%	3,754	13.7%
Employment	20,656	-4.6%	299,113	2.0%
Location Quotient	2.34		n/a	
Direct-Effect Employment Multiplier	5.82			
Total Employment Impact	120,285			
Average Annual Wage	\$98,800	-1.1%	\$113,815	-3.2%
Medical Devices and Equipment				
Establishments	196	0.5%	8,083	5.9%
Employment	8,411	-1.6%	359,293	2.9%
Location Quotient	0.79		n/a	
Direct-Effect Employment Multiplier	2.76			
Total Employment Impact	23,222			
Average Annual Wage	\$63,153	5.1%	\$84,746	6.5%
Research, Testing and Medical Laboratories				
Establishments	1,862	23.9%	33,007	13.1%
Employment	28,896	9.9%	547,566	8.2%
Location Quotient	1.79		n/a	
Direct-Effect Employment Multiplier	2.43			
Total Employment Impact	70,135			
Average Annual Wage	\$93,432	6.5%	\$106,942	5.5%
Total Bioscience Industry				
Establishments	3,843	16.4%	85,702	7.7%
Employment	75,582	2.5%	1,743,639	4.4%
Location Quotient	1.47		n/a	
Direct-Effect Employment Multiplier	3.48			
Total Employment Impact	263,116			
Average Annual Wage	\$91,307	3.8%	\$98,961	3.1%
Total Private Sector				
Establishments	261,041	3.3%	9,243,034	3.4%
Employment	3,566,319	5.6%	120,884,570	4.2%
Average Annual Wage	\$47,248	4.9%	\$53,354	4.3%

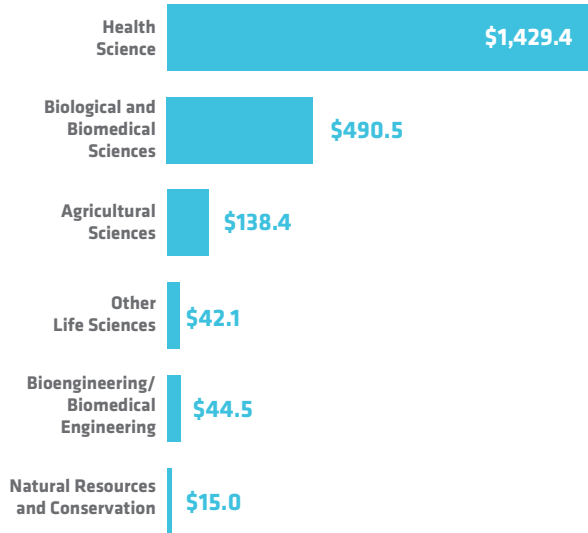
Note: U.S. employment metrics include Puerto Rico.

Bioscience Research in North Carolina

Bioscience Academic R&D Expenditures

\$ Millions

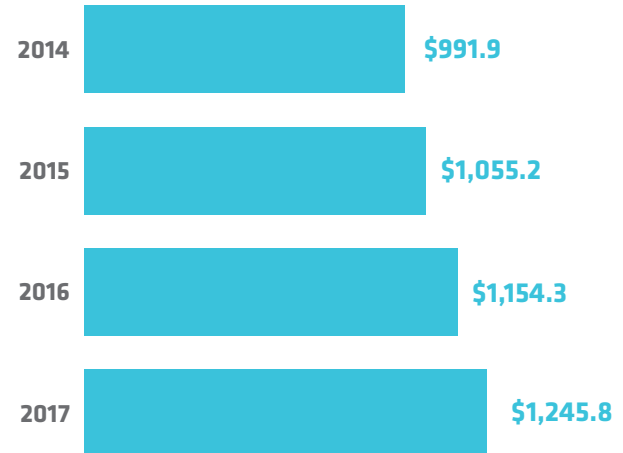
FY 2016



NIH Awards

\$ Millions

FY 2014-2017

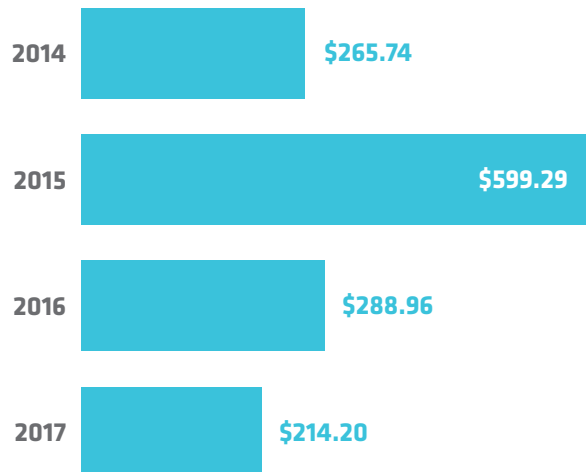


Bioscience Venture Capital in North Carolina

Bioscience-Related Venture Capital Investments

\$ Millions

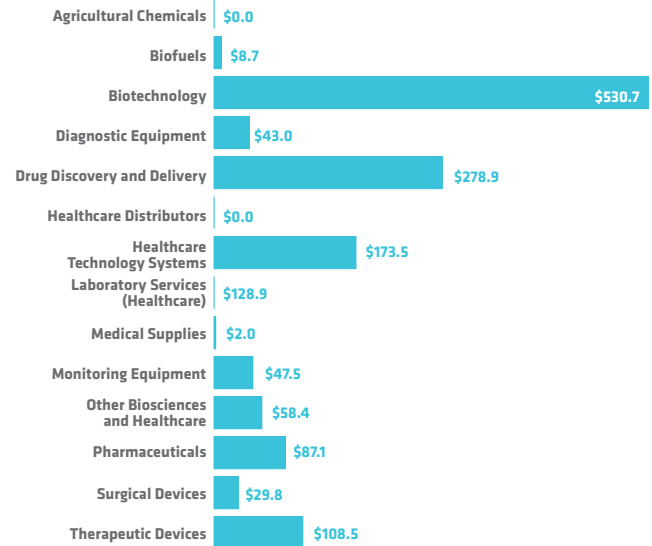
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Bioscience-Related Venture Capital Investments by Segment

\$ Millions

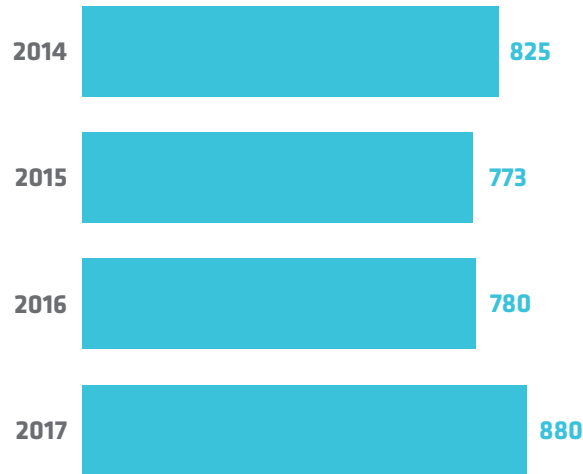
2014-2017



Bioscience Patents in North Carolina

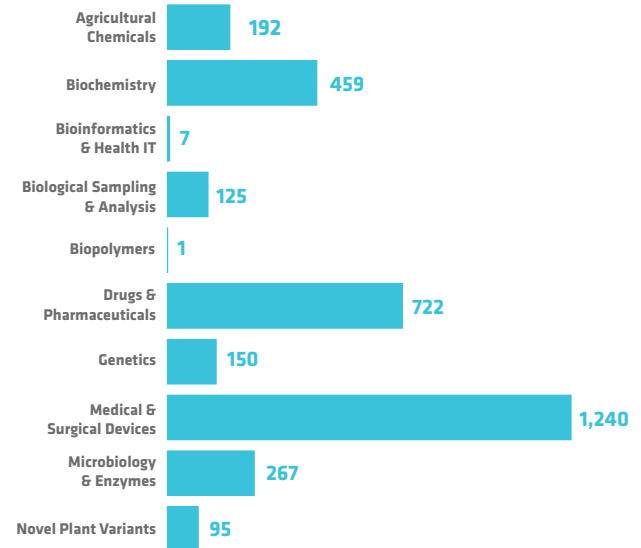
Bioscience-Related U.S. Patents

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.