

North Carolina

TECONOMY/BIO

The Bioscience Economy: Propelling Life-Saving Treatments, Supporting State & Local Communities

North Carolina's bioscience industry is among the national leaders in its size, specialized employment concentration, and diverse strengths. The industry has seen strong growth since 2016, increasing its employment base by 10 percent to reach more than 83,000 jobs in 2018 across 4,210 business establishments. All five industry subsectors contributed to the overall job gains. North Carolina has diverse strengths in the biosciences, with specialized employment concentrations in three subsectors—drugs and pharmaceuticals; research, testing and medical labs; and agricultural feedstock and industrial biosciences. The state is among the top tier in its bioscience-related university R&D activities with \$2.35 billion in expenditures in 2018. Funding from NIH to North Carolina institutions has been steadily increasing in recent years and reached nearly \$1.6 billion in 2019. The state has seen an increase in the volume of patents awarded in bioscience-related technology classes, which totaled 3,636 during the 2016-19 period.

Bioscience Performance Metrics

Summary of State Performance in Selected Bioscience-related Metrics

Metric	NC	United States	Quintile
Bioscience Industry, 2018			
Bioscience Industry Employment	83,245	1,869,955	I
Bioscience Industry Location Quotient	1.50	n/a	I
Bioscience Industry Establishments	4,210	101,143	I
Academic Bioscience R&D Expenditures, FY 2018			
Academic Bioscience R&D (\$ thousands)	\$2,352,469	\$47,183,197	I
Bioscience Share of Total Academic R&D	76%	63%	I
Academic Bioscience R&D Per Capita	\$227	\$144	I
NIH Funding, FY 2019			
Funding (\$ thousands)	\$1,589,742	\$30,886,675	I
Funding Per Capita	\$152	\$94	I
Bioscience Venture Capital Investments, 2016-19 (\$ millions)	\$1,513.19	\$102,728.33	II
Bioscience-Related Patents, 2016-19	3,636	108,438	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.

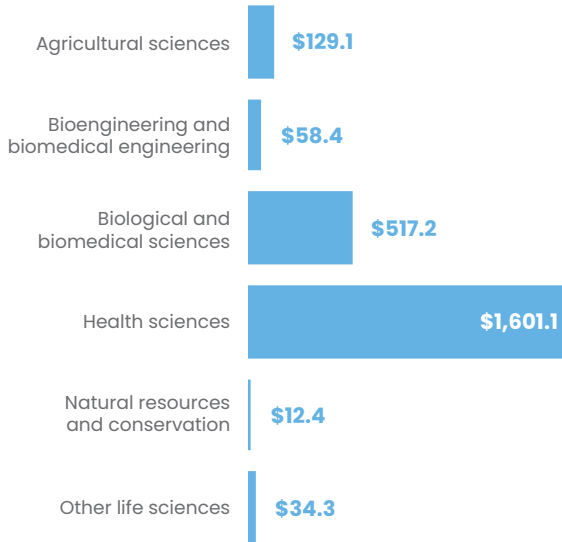
Industry Subsector	North Carolina		United States	
	2018	2016–2018 Change	2018	2016–2018 Change
Agricultural Feedstock and Industrial Biosciences				
Establishments	43	-4.4%	1,785	4.4%
Employment	2,448	5.0%	68,642	0.9%
Location Quotient	1.20		n/a	
Direct-Effect Employment Multiplier	6.49			
Total Employment Impact	15,887			
Average Annual Wage	\$99,703	-2.1%	\$83,151	2.7%
Bioscience-Related Distribution				
Establishments	1,986	23.0%	51,582	31.8%
Employment	18,122	18.5%	545,055	16.1%
Location Quotient	1.12		n/a	
Direct-Effect Employment Multiplier	3.77			
Total Employment Impact	68,345			
Average Annual Wage	\$102,861	13.0%	\$105,905	13.1%
Drugs and Pharmaceuticals				
Establishments	122	-2.4%	4,451	18.6%
Employment	21,705	5.1%	308,357	3.1%
Location Quotient	2.38		n/a	
Direct-Effect Employment Multiplier	4.82			
Total Employment Impact	104,548			
Average Annual Wage	\$97,577	-1.2%	\$113,544	-0.2%
Medical Devices and Equipment				
Establishments	192	-2.0%	8,753	8.3%
Employment	8,504	1.1%	378,431	5.3%
Location Quotient	0.76		n/a	
Direct-Effect Employment Multiplier	2.68			
Total Employment Impact	22,795			
Average Annual Wage	\$68,612	8.6%	\$90,541	6.8%
Research, Testing, and Medical Laboratories				
Establishments	1,868	0.3%	34,572	4.7%
Employment	32,467	12.4%	569,470	4.0%
Location Quotient	1.92		n/a	
Direct-Effect Employment Multiplier	2.56			
Total Employment Impact	82,957			
Average Annual Wage	\$101,992	9.2%	\$120,320	12.5%
Total Bioscience Industry				
Establishments	4,210	9.6%	101,143	18.0%
Employment	83,245	10.1%	1,869,955	7.2%
Location Quotient	1.50		n/a	
Direct-Effect Employment Multiplier	3.54			
Total Employment Impact	294,532			
Average Annual Wage	\$97,553	6.8%	\$107,610	8.7%
Total Private Sector				
Establishments	269,914	3.4%	9,776,674	3.1%
Employment	3,709,153	4.0%	125,195,944	3.3%
Average Annual Wage	\$50,863	7.6%	\$57,043	6.9%

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

Bioscience Research in North Carolina

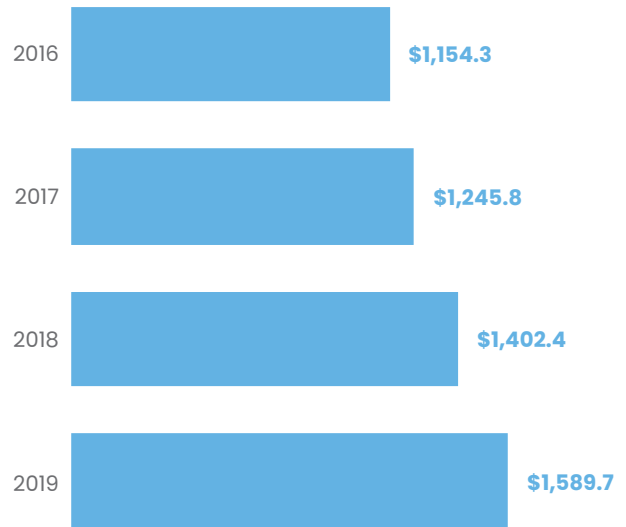
Bioscience Academic R&D Expenditures

\$ Millions, FY 2018



NIH Awards

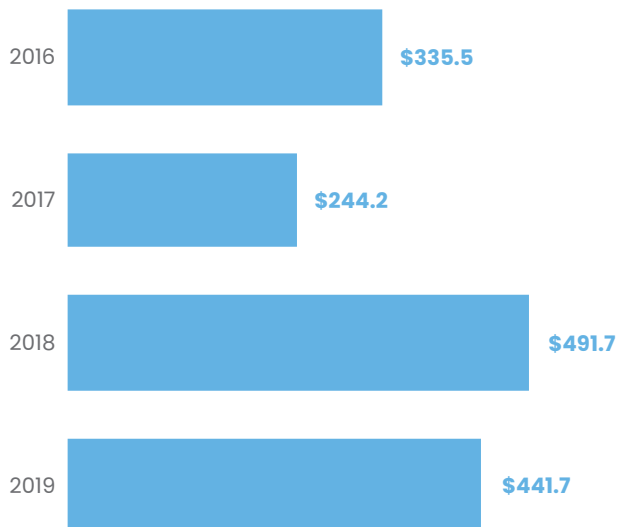
\$ Millions, FY 2016-2019



Bioscience Venture Capital in North Carolina

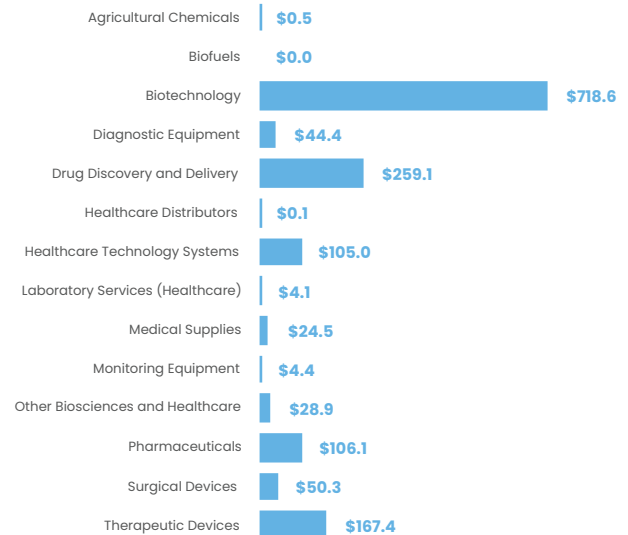
Bioscience-Related Venture Capital Investments

\$ Millions, 2016-2019



Bioscience-Related Venture Capital Investments by Segment

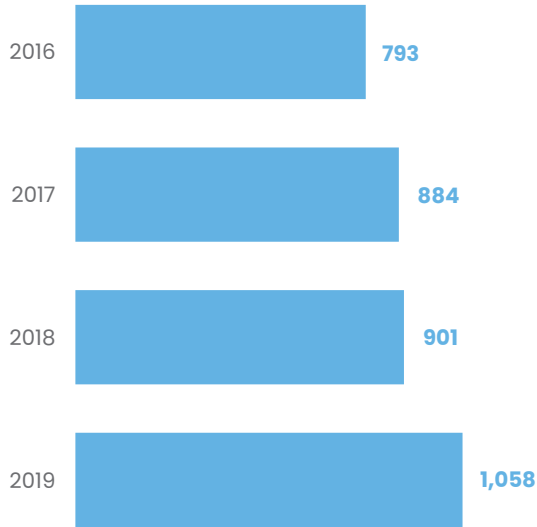
\$ Millions, 2016-2019



Bioscience Patents in North Carolina

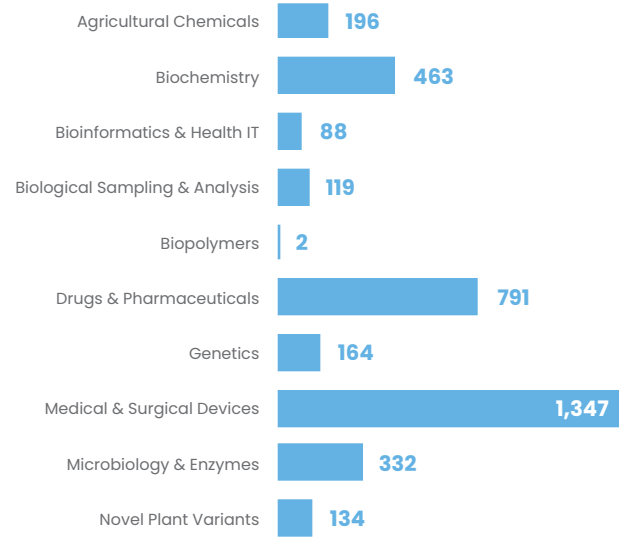
Bioscience-Related U.S. Patents

2016-2019



Bioscience-Related U.S. Patents by Segment

2016-2019



Source Notes

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

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

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.