

Virginia

The U.S. Bioscience Industry: Fostering Innovation
and Driving America's Economy Forward

Bioscience industry employers in Virginia have increased employment by 15 percent since 2018, outpacing the national growth rate to reach 28,135 total jobs in 2021, while operating 2,696 business establishments. All five of the bioscience industry subsectors contributed to the overall job gains. Virginia's largest industry subsector is research, testing, and medical laboratories. Virginia's research universities had \$967 million in bioscience-related R&D expenditures in 2020. Fueling this academic R&D activity, NIH funding in the state has grown in recent years and totaled \$505 million in 2021. Venture capital investments in state bioscience companies have increased steadily and significantly in recent years and in 2021 totaled \$426 million.

Bioscience Performance Metrics

Summary of State Performance in Selected Bioscience-related Metrics

Metric	Virginia	United States	Quintile
Bioscience Industry, 2021			
Bioscience Industry Employment	28,135	2,135,704	III
Bioscience Industry Location Quotient	0.52	n/a	V
Bioscience Industry Establishments	2,696	127,389	II
Academic Bioscience R&D Expenditures, FY 2020			
Bioscience R&D (\$ thousands)	\$967,418	\$51,108,737	II
Bioscience Share of Total R&D	55%	63%	IV
Bioscience R&D Per Capita	\$112	\$154	III
NIH Funding, FY 2021			
Funding (\$ thousands)	\$504,645	\$34,751,109	II
Funding Per Capita	\$58	\$105	III
Bioscience Venture Capital Investments, 2018-21 (\$ millions)			
	\$1,034.89	\$197,674.54	II
Bioscience-Related Patents, 2018-21			
	1,862	153,072	III

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.

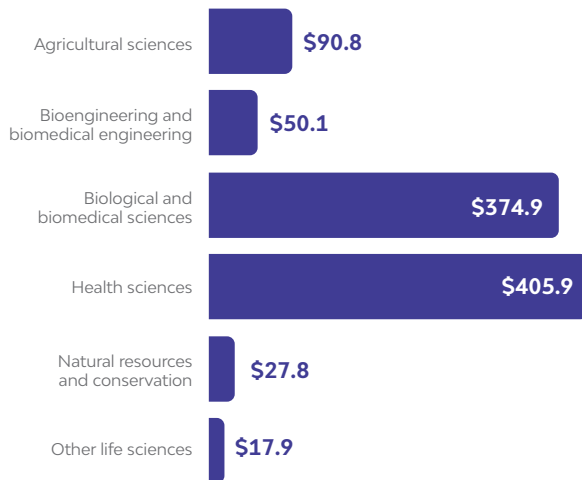
Industry Subsector		Virginia		United States	
		2021	2018–2021 Change	2021	2018–2021 Change
Agricultural Feedstock and Industrial Biosciences	Establishments	34	17.2%	1,948	10.0%
	Employment	527	77.1%	69,573	1.9%
	<i>Location Quotient</i>	0.30		n/a	
	Average Annual Wage	\$74,818	17.9%	\$91,989	13.1%
Bioscience- Related Distribution	Establishments	906	15.2%	62,697	14.7%
	Employment	8,876	21.7%	602,589	6.6%
	<i>Location Quotient</i>	0.58		n/a	
	Average Annual Wage	\$107,586	21.7%	\$121,606	15.0%
Medical Devices and Equipment	Establishments	281	38.0%	10,268	17.4%
	Employment	2,905	4.9%	398,847	5.5%
	<i>Location Quotient</i>	0.29		n/a	
	Average Annual Wage	\$80,239	-4.4%	\$98,481	8.7%
Pharmaceuticals	Establishments	166	73.2%	5,973	34.7%
	Employment	2,903	4.3%	344,839	11.9%
	<i>Location Quotient</i>	0.33		n/a	
	Average Annual Wage	\$102,198	10.5%	\$126,153	10.3%
Research, Testing, and Medical Laboratories	Establishments	1,309	30.7%	46,503	34.5%
	Employment	12,924	14.5%	719,856	19.3%
	<i>Location Quotient</i>	0.70		n/a	
	Average Annual Wage	\$97,624	20.5%	\$147,396	22.0%
Total Bioscience Industry	Establishments	2,696	27.4%	127,389	22.3%
	Employment	28,135	15.2%	2,135,704	11.0%
	<i>Location Quotient</i>	0.52		n/a	
	Average Annual Wage	\$99,016	17.0%	\$125,750	16.4%
Total Private Sector	Establishments	288,522	6.6%	10,665,643	9.3%
	Employment	3,146,067	-1.3%	123,376,557	-1.5%
	<i>Location Quotient</i>	1.00		n/a	
	Average Annual Wage	\$68,143	17.8%	\$67,826	18.9%

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

Bioscience Research in Virginia

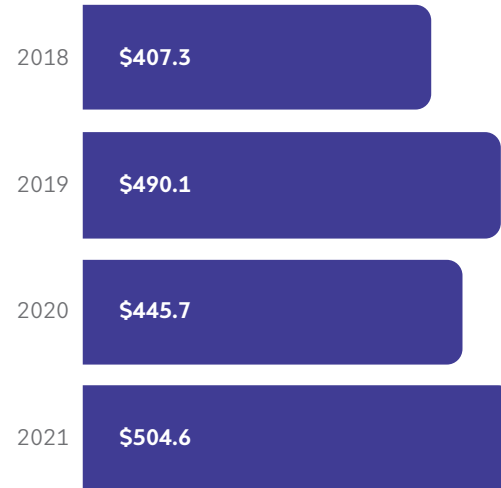
Bioscience Academic R&D Expenditures

\$ Millions, FY 2020



NIH Awards

\$ Millions, FY 2018-2021



Bioscience Venture Capital in Virginia

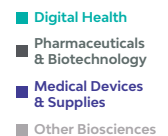
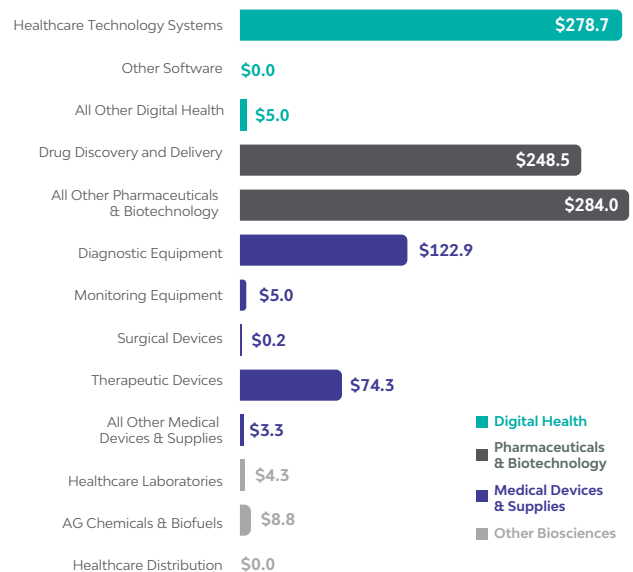
Bioscience-Related Venture Capital Investments

\$ Millions, 2018-2021



Bioscience-Related Venture Capital Investments by Segment

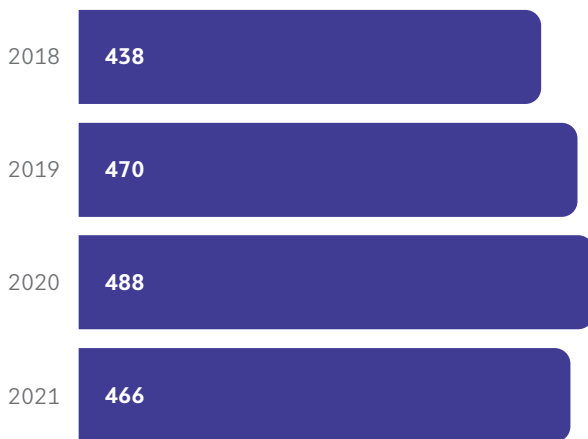
\$ Millions, 2018-2021



Bioscience Patents in Virginia

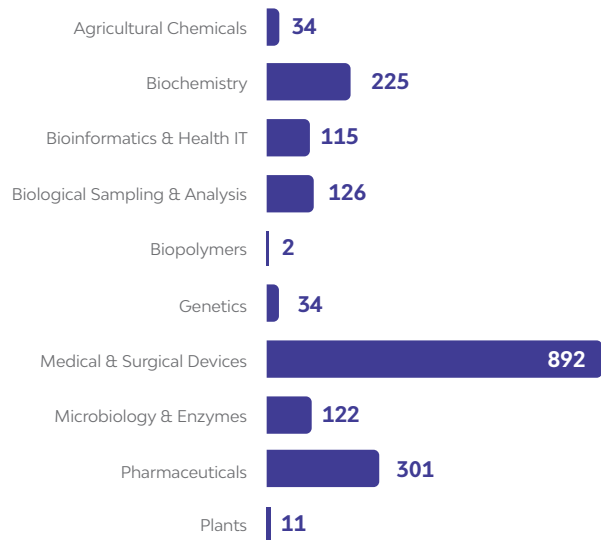
Bioscience-Related U.S. Patents

2018-2021



Bioscience-Related U.S. Patents by Segment

2018-2021



Source Notes

Employment, Establishments and Wages: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW), enhanced by Lightcast (Datarun 2022.3).

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.