



Kentucky

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

Kentucky's bioscience industry has grown by nearly 11 percent since 2018, matching the national growth rate for the industry and reaching 16,354 jobs in 2021. Four of the state's five major bioscience industry subsectors contributed to the overall job gains. Kentucky has a high employment concentration in bioscience-related distribution relative to the national average (a location quotient of 1.07), which employs just over half in the state industry. The state's research universities conducted nearly \$503 million in bioscience-related R&D activity in 2020, which represents 82 percent of all university R&D, a very high concentration in biosciences research relative to the national average of 63 percent. NIH funding contributes to academic R&D expenditures, and these awards have been steadily increasing in Kentucky, reaching \$255 million in FY 2021.

Bioscience Performance Metrics

Summary of State Performance in Selected Bioscience-related Metrics

Metric	Kentucky	United States	Quintile
Bioscience Industry, 2021			
Bioscience Industry Employment	16,354	2,135,704	III
Bioscience Industry Location Quotient	0.60	n/a	IV
Bioscience Industry Establishments	1,860	127,389	III
Academic Bioscience R&D Expenditures, FY 2020			
Bioscience R&D (\$ thousands)	\$502,576	\$51,108,737	III
Bioscience Share of Total R&D	82%	63%	I
Bioscience R&D Per Capita	\$112	\$154	IV
NIH Funding, FY 2021			
Funding (\$ thousands)	\$255,049	\$34,751,109	III
Funding Per Capita	\$57	\$105	III
Bioscience Venture Capital Investments, 2018-21 (\$ millions)			
	\$512.85	\$197,674.54	III
Bioscience-Related Patents, 2018-21			
	837	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.

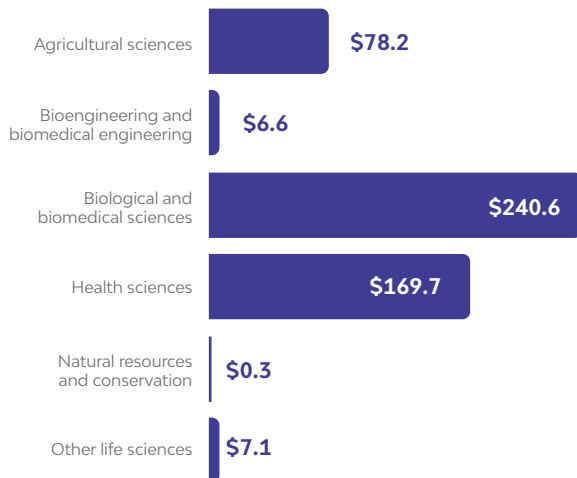
Industry Subsector		Kentucky		United States	
		2021	2018–2021 Change	2021	2018–2021 Change
Agricultural Feedstock and Industrial Biosciences	Establishments	32	33.3%	1,948	10.0%
	Employment	451	0.5%	69,573	1.9%
	<i>Location Quotient</i>	0.51		n/a	
	Average Annual Wage	\$72,844	17.8%	\$91,989	13.1%
Bioscience- Related Distribution	Establishments	1,061	7.3%	62,697	14.7%
	Employment	8,242	7.1%	602,589	6.6%
	<i>Location Quotient</i>	1.07		n/a	
	Average Annual Wage	\$104,059	8.6%	\$121,606	15.0%
Medical Devices and Equipment	Establishments	153	87.7%	10,268	17.4%
	Employment	1,169	-8.4%	398,847	5.5%
	<i>Location Quotient</i>	0.23		n/a	
	Average Annual Wage	\$69,692	27.9%	\$98,481	8.7%
Pharmaceuticals	Establishments	122	247.9%	5,973	34.7%
	Employment	1,830	5.4%	344,839	11.9%
	<i>Location Quotient</i>	0.41		n/a	
	Average Annual Wage	\$94,607	3.4%	\$126,153	10.3%
Research, Testing, and Medical Laboratories	Establishments	493	39.4%	46,503	34.5%
	Employment	4,661	28.4%	719,856	19.3%
	<i>Location Quotient</i>	0.51		n/a	
	Average Annual Wage	\$79,900	16.4%	\$147,396	22.0%
Total Bioscience Industry	Establishments	1,860	25.4%	127,389	22.3%
	Employment	16,354	10.6%	2,135,704	11.0%
	<i>Location Quotient</i>	0.60		n/a	
	Average Annual Wage	\$92,798	10.5%	\$125,750	16.4%
Total Private Sector	Establishments	128,160	10.0%	10,665,643	9.3%
	Employment	1,580,147	-0.8%	123,376,557	-1.5%
	<i>Location Quotient</i>	1.00		n/a	
	Average Annual Wage	\$52,948	14.6%	\$67,826	18.9%

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

Bioscience Research in Kentucky

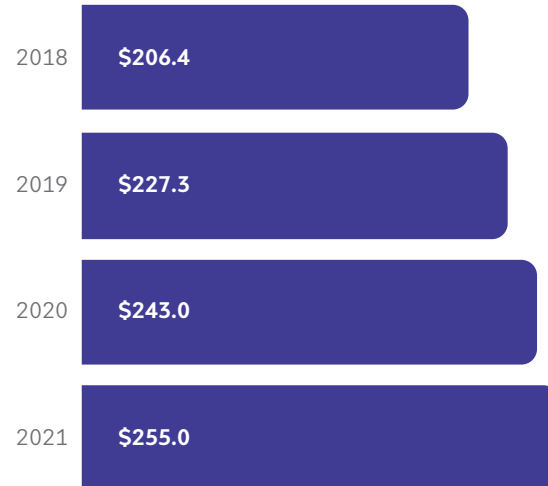
Bioscience Academic R&D Expenditures

\$ Millions, FY 2020



NIH Awards

\$ Millions, FY 2018-2021



Bioscience Venture Capital in Kentucky

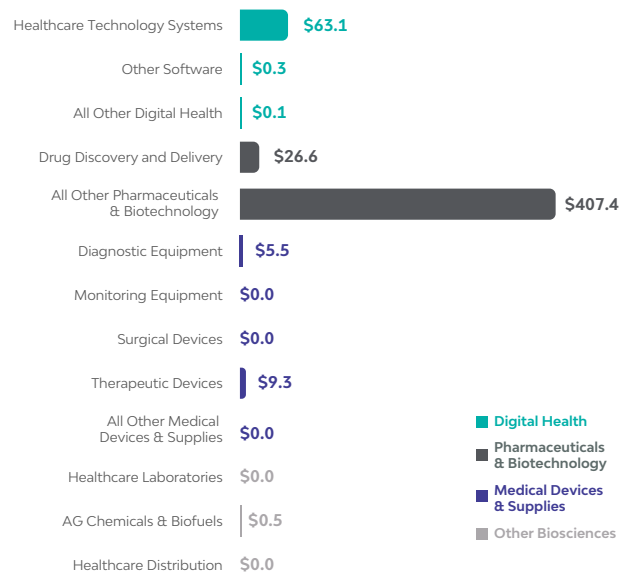
Bioscience-Related Venture Capital Investments

\$ Millions, 2018-2021



Bioscience-Related Venture Capital Investments by Segment

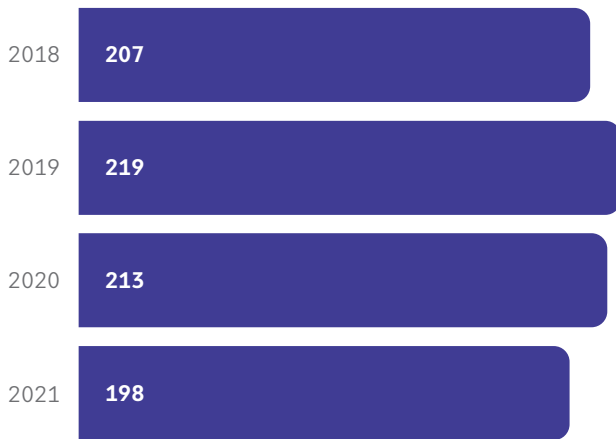
\$ Millions, 2018-2021



Bioscience Patents in Kentucky

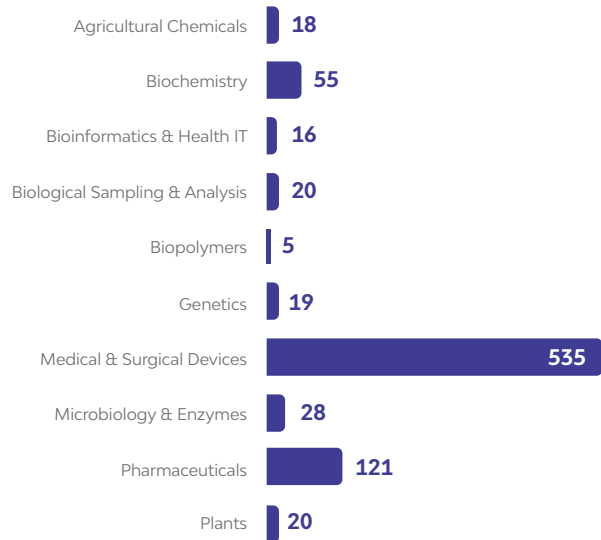
Bioscience-Related U.S. Patents

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.

