Kentucky

Kentucky's bioscience industry employment has grown by more than 5 percent since 2007 with gains contributed by three of its five major subsectors. The state's two largest subsectors—bioscience-related distribution and research, testing, and medical labs, each had employment gains during the 5-year period to 2012, increasing by 5 percent and 22 percent, respectively. Kentucky's research universities are heavily focused in the biosciences with their $403 million in bioscience academic R&D in 2012 accounting for 74 percent of all academic research compared with 61 percent for the national average. Venture capital invested in state bioscience companies totaled $147 million from 2009 through 2013 with the majority of these investments made in pharmaceutical firms.

Bioscience Performance Metrics

Summary of State Performance in Selected Bioscience-related Metrics

Metric	Kentucky	United States	Quintile
Bioscience Industry, 2012			
Bioscience Industry Employment	11,405	1,619,746	III
Bioscience Industry Location Quotient	0.54	n/a	IV
Bioscience Industry Establishments	972	73,088	III
Academic Bioscience R&D Expenditures, FY 2012			
Bioscience R&D ($ thousands)	$403,098	$38,139,876	III
Bioscience Share of Total R&D	74%	61%	I
Bioscience R&D Per Capita	$92	$119	III
NIH Funding, FY 2013			
Funding ($ thousands)	$142,245	$22,293,255	III
Funding Per Capita	$32	$70	III
Bioscience Venture Capital Investments, 2009–13 ($ millions)	$146.9	$49,401.7	III
Bioscience and Related Patents, 2009–13	597	100,238	III

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

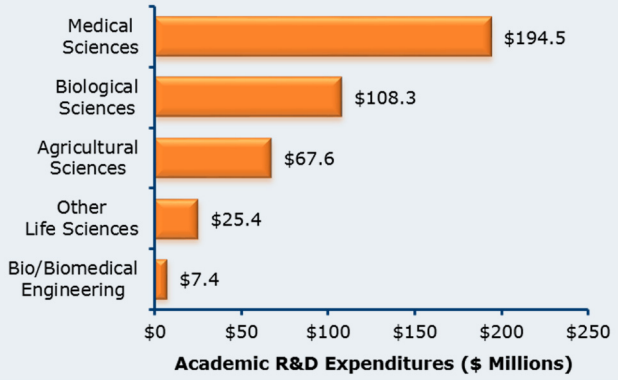
For source notes, see end of State Profile.

Industry Subsector	Kentucky		United States	
	2012	2007–2012 Change	2012	2007–2012 Change
Agricultural Feedstock & Chemicals				
Establishments	22	29.4%	1,772	5.2%
Employment	481	-8.8%	76,404	-1.0%
Location Quotient	0.48		n/a	
Direct-Effect Employment Multiplier	17.9		18.1	
Total Employment Impact	8,626		1,382,637	
Average Annual Wage	$51,718	1.9%	$75,828	14.2%
Bioscience-Related Distribution				
Establishments	616	34.9%	36,793	1.4%
Employment	5,915	5.0%	442,016	-3.9%
Location Quotient	1.05		n/a	
Direct-Effect Employment Multiplier	2.5		2.7	
Total Employment Impact	14,929		1,199,015	
Average Annual Wage	$73,713	4.5%	$85,188	11.5%
Drugs and Pharmaceuticals				
Establishments	18	-5.3%	3,057	12.0%
Employment	1,263	3.5%	284,331	-10.9%
Location Quotient	0.34		n/a	
Direct-Effect Employment Multiplier	5.9		9.9	
Total Employment Impact	7,466		2,673,265	
Average Annual Wage	$70,148	5.3%	$106,576	13.9%
Medical Devices and Equipment				
Establishments	59	25.5%	7,235	12.0%
Employment	1,253	-11.0%	349,432	1.4%
Location Quotient	0.27		n/a	
Direct-Effect Employment Multiplier	2.8		3.9	
Total Employment Impact	3,495		1,318,459	
Average Annual Wage	$46,003	-1.2%	$75,695	10.7%
Research, Testing, and Medical Laboratories				
Establishments	257	46.4%	24,231	31.0%
Employment	2,492	22.3%	467,563	9.7%
Location Quotient	0.41		n/a	
Direct-Effect Employment Multiplier	2.3		2.7	
Total Employment Impact	5,739		1,284,196	
Average Annual Wage	$52,820	12.1%	$91,248	15.9%
Total Bioscience Industry				
Establishments	972	35.9%	73,088	11.4%
Employment	11,405	5.3%	1,619,746	-0.4%
Location Quotient	0.54		n/a	
Direct-Effect Employment Multiplier	3.7		4.9	
Total Employment Impact	41,823		7,857,572	
Average Annual Wage	$64,781	5.1%	$88,202	12.8%
Total Private Sector				
Establishments	104,772	-2.5%	8,699,564	-0.5%
Employment	1,456,088	-3.0%	111,137,206	-3.1%
Average Annual Wage	$40,201	11.0%	$49,130	11.1%

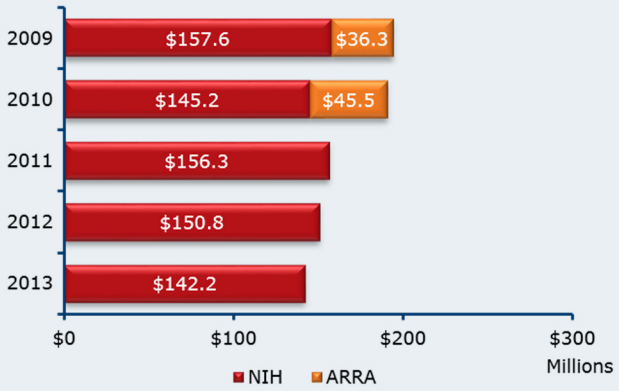
Note: U.S. employment metrics include Puerto Rico. Estimates of total impacts do not include Puerto Rico.

Bioscience Research in Kentucky

Bioscience Academic R&D Expenditures, FY 2012



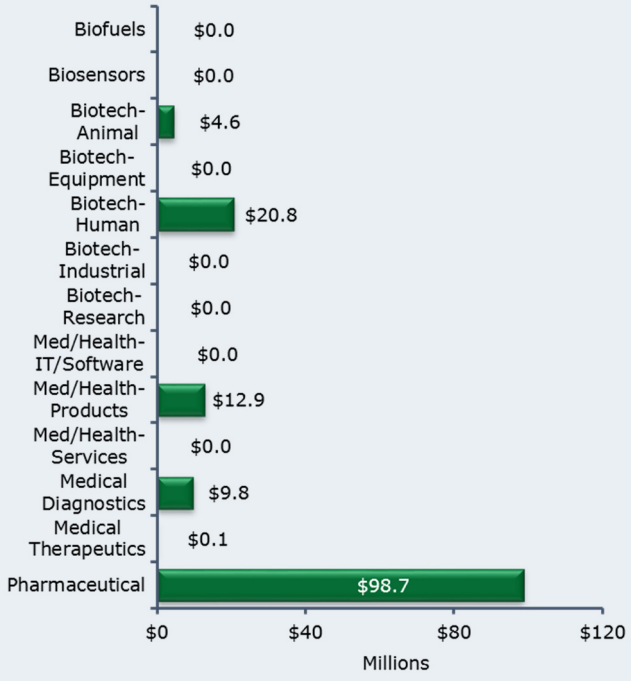
NIH Awards, 2009–2013



Bioscience Venture Capital in Kentucky

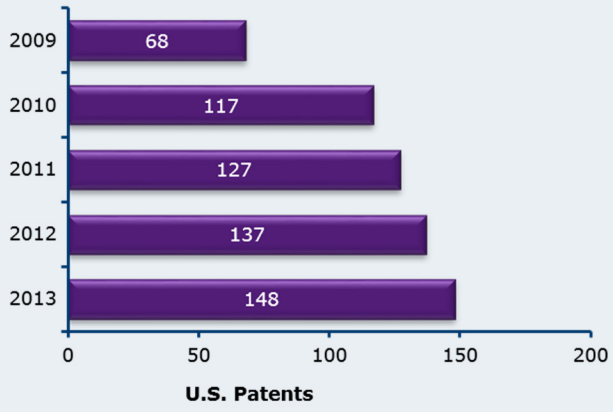
Bioscience-Related Venture Capital Investments, 2009–2013

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

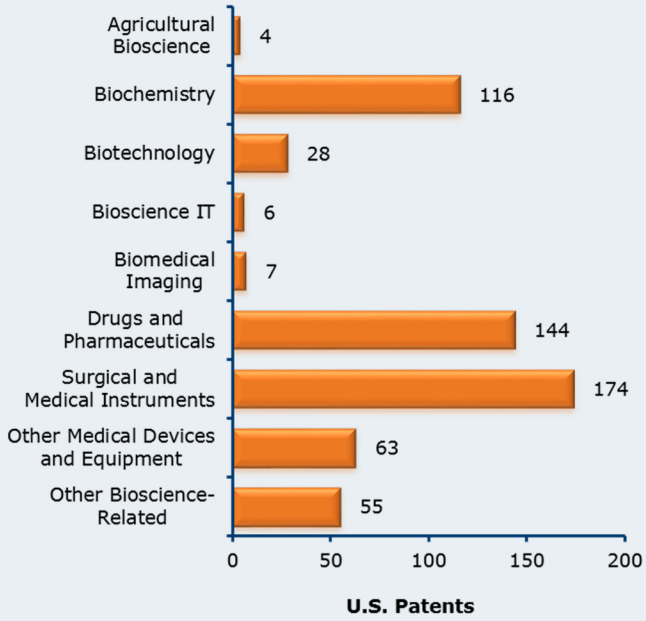


Bioscience Patents in Kentucky

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.