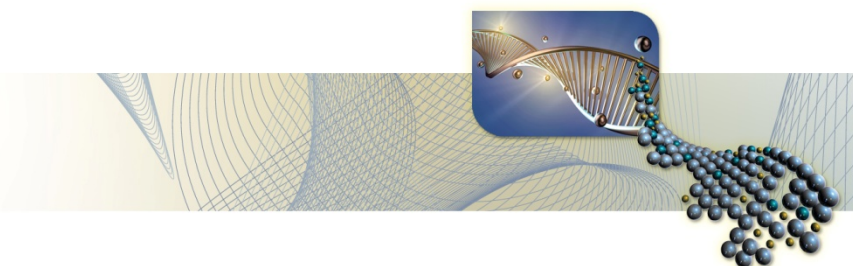


# MISSOURI



Missouri has a specialized employment concentration in agricultural feedstock and chemicals (location quotient 1.90) and a near-specialization in research, testing and medical laboratories (1.18), with both subsectors growing faster in Missouri than nationally since 2001. Academic bioscience research and development expenditures totaled \$792 million in 2008, with a considerably higher share of total academic research in the biosciences than the national average. A total of \$130 million in bioscience venture capital was invested in Missouri companies during the last six years across a range of sectors led by human biotechnology, medical therapeutics, and animal biotechnology. In the same period, there were 1,409 patents issued, predominantly in drugs and pharmaceuticals and in biochemistry. State biomedical institutions participated in 526 active clinical trials in 2009.

## ●●● Bioscience Performance Metrics

### Summary of State Performance in Selected Bioscience-related Metrics

Metrics	Missouri	United States	Rank*
<b>Bioscience Industry, 2008</b>			
Total Bioscience Industry Employment, 2008	27,409	1,420,324	II
Bioscience Industry Location Quotient, 2008	0.96	n/a	II
Biosciences Industry Establishments, 2008	868	47,593	II
<b>Academic R&amp;D Expenditures, FY 2008</b>			
Bioscience R&D (\$ thousands)	\$792,142	\$31,818,810	13
Bioscience Share of Total R&D	82.6%	61.3%	2
Bioscience R&D Per Capita	\$132.99	\$104.54	10
Change in Bioscience R&D, FY 2004–08	15.4%	22.3%	34
<b>NIH Funding, FY 2009</b>			
Total, Including ARRA Funds (\$ thousands)	\$566,693	\$25,837,590	12
Per Capita Funding	\$94.64	\$84.16	13
Change in Baseline Funding, FY 2004–09**	-5.4%	-4.7%	33
Change in Total Funding, FY 2004–09	13.9%	14.6%	34
<b>Clinical Trials, Initiated 2009</b>	526	5,299	12
<b>Higher Education Degrees in Bioscience Fields, AY 2008</b>	2,984	161,811	18
<b>Employment in Bioscience-related Occupations, 2008</b>	15,440	717,510	16
<b>Bioscience Venture Capital Investments, 2004–09 (\$ millions)</b>	\$130.4	\$60,099	31
<b>Bioscience and Related Patents, 2004–09</b>	1,409	75,593	20

\*State ranking figures for bioscience industry employment metrics are calculated as quintiles (I=Top Quintile; V=Bottom Quintile). All other metrics are ranked 1-52.

\*\*Baseline Funding does not include American Recovery and Reinvestment Act (ARRA) funds for 2009.

For source notes, see end of State Profile.

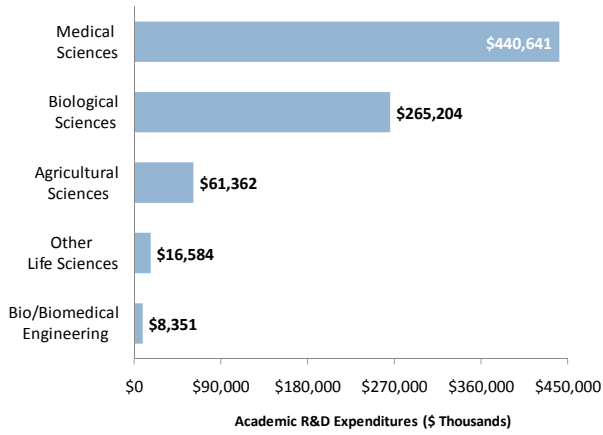
## ●●● Bioscience Industry Base, 2008

INDUSTRY SUBSECTOR	Missouri		United States	
	2008	2001-08 Change	2008	2001-08 Change
<b>AGRICULTURAL FEEDSTOCK &amp; CHEMICALS</b>				
Establishments	91	9.6%	2,440	16.0%
Employment	4,382	5.0%	114,793	1.9%
Location Quotient	1.90		n/a	
Direct-Effect Employment Multiplier	6.99		11.33	
Total Employment Impact	30,646		1,284,650	
Average Annual Wage	\$62,839		\$72,279	
<b>DRUGS &amp; PHARMACEUTICALS</b>				
Establishments	75	-10.7%	2,771	6.4%
Employment	5,080	-3.4%	311,882	2.3%
Location Quotient	0.81		n/a	
Direct-Effect Employment Multiplier	6.12		9.92	
Total Employment Impact	31,077		2,873,278	
Average Annual Wage	\$70,222		\$93,378	
<b>MEDICAL DEVICES &amp; EQUIPMENT</b>				
Establishments	248	-13.3%	15,227	0.4%
Employment	4,688	-1.8%	435,509	2.0%
Location Quotient	0.54		n/a	
Direct-Effect Employment Multiplier	2.97		4.87	
Total Employment Impact	13,926		2,029,581	
Average Annual Wage	\$44,845		\$63,606	
<b>RESEARCH, TESTING, &amp; MEDICAL LABORATORIES</b>				
Establishments	454	53.6%	27,154	57.7%
Employment	13,259	90.3%	558,140	46.1%
Location Quotient	1.18		n/a	
Direct-Effect Employment Multiplier	2.73		3.30	
Total Employment Impact	36,215		1,853,127	
Average Annual Wage	\$93,953		\$80,785	
<b>TOTAL BIOSCIENCES INDUSTRY</b>				
Establishments	868	16.0%	47,593	28.3%
Employment	27,409	29.5%	1,420,324	15.8%
Location Quotient	0.96		n/a	
Direct-Effect Employment Multiplier	4.08		5.82	
Total Employment Impact	111,864		8,040,636	
Average Annual Wage	\$76,181		\$77,595	
<b>TOTAL PRIVATE SECTOR</b>				
Establishments	165,554	7.7%	8,860,956	13.8%
Employment	2,285,271	1.9%	113,917,377	3.5%
Average Annual Wage	\$40,712		\$45,229	

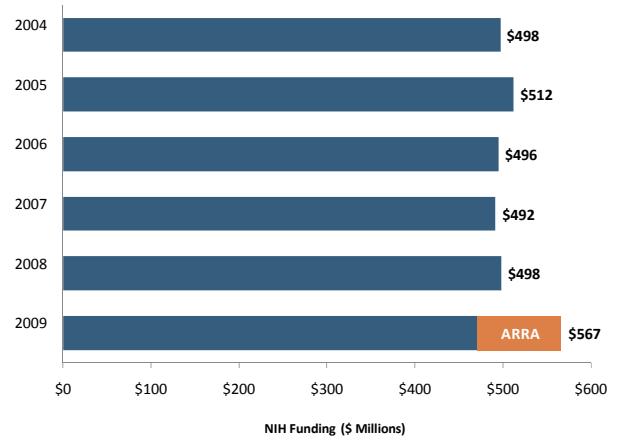
Note: U.S. employment metrics include Puerto Rico. Estimates of total employment impacts do not include Puerto Rico.

## ●●● Bioscience Performance Metrics

**Bioscience Academic R&D Expenditures in Missouri, FY 2008**

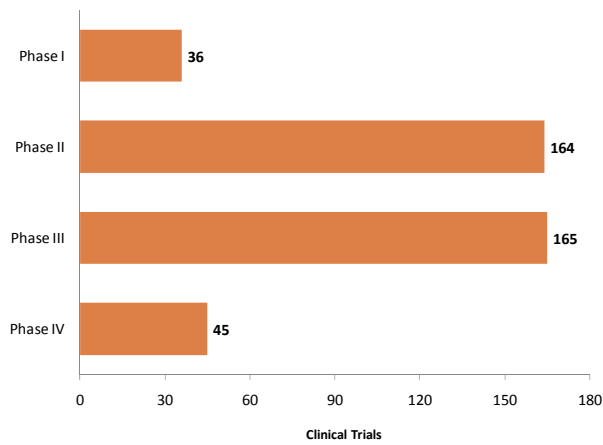


**NIH Awards in Missouri, 2004–2009**

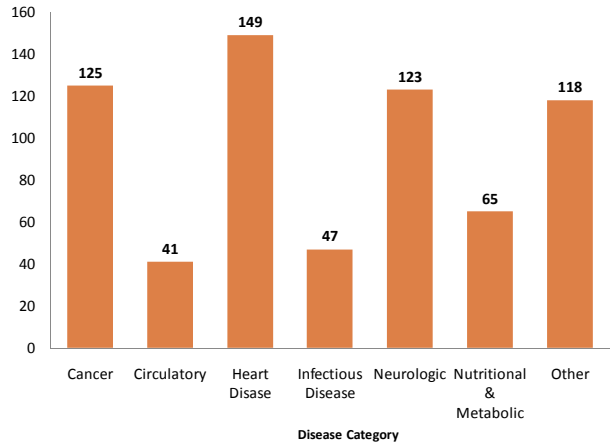


## ●●● Recent Clinical Trial Activities

**Clinical Trials by Phase in Missouri, 2009**

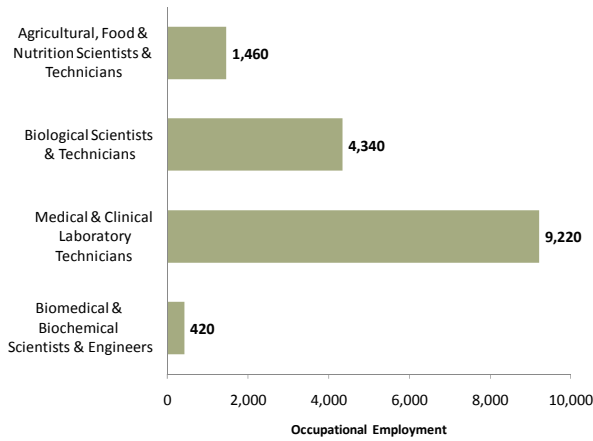


**Clinical Trials by Major Disease Category in Missouri, 2009**

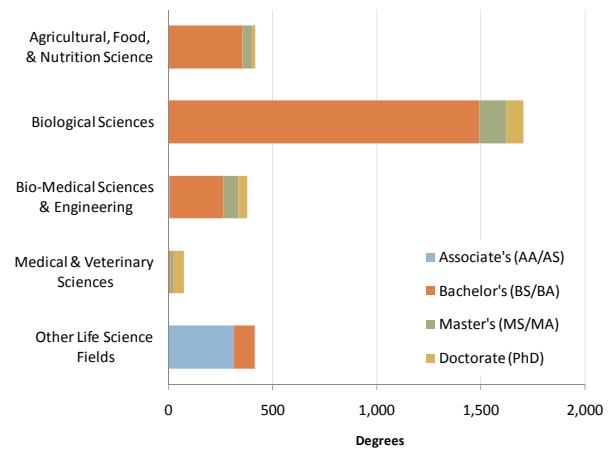


## Bioscience Talent Base

**Bioscience-related Occupational Employment in Missouri, 2008**

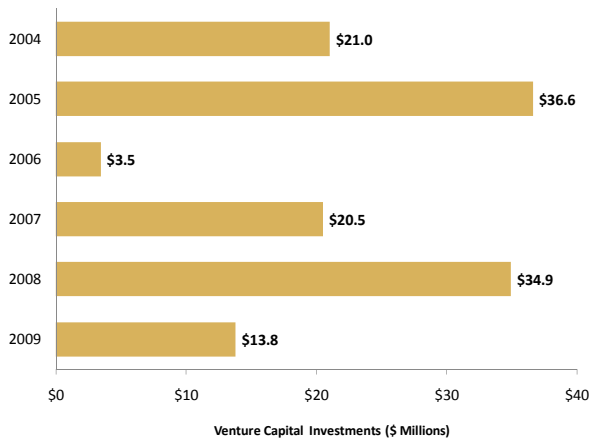


**Bioscience-related Degrees in Missouri, AY 2008**

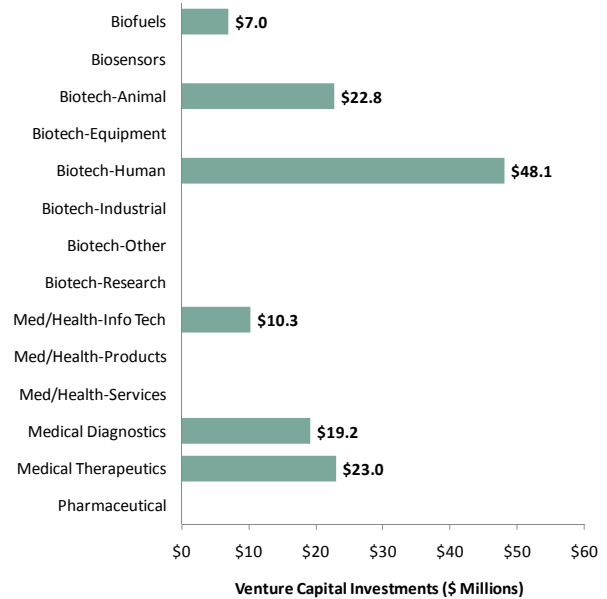


## Bioscience Venture Capital

**Bioscience-related Venture Capital Investments in Missouri, 2004–2009**

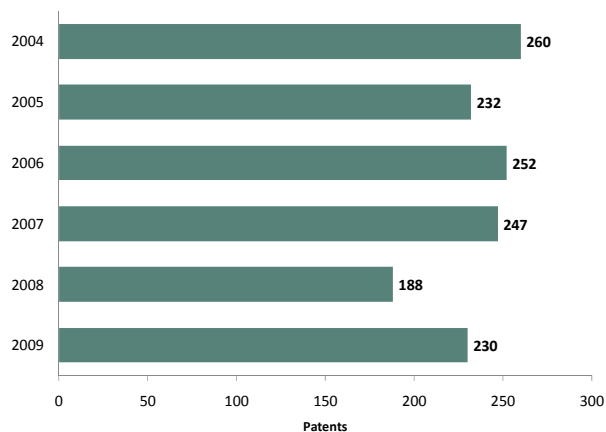


**Bioscience-related Venture Capital Investments in Missouri by Segment, 2004–2009**

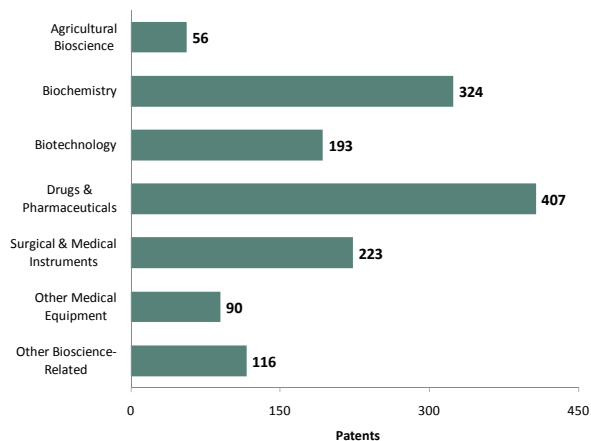


## ●●● Bioscience Patents

**Bioscience-related Patents in Missouri, 2004–2009**



**Bioscience-related Patents by Classification Group in Missouri, 2004–2009**



### State Bioscience Contact

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[www.mobio.org](http://www.mobio.org)

### Source Notes:

**Employment, Establishment, and Wage Data:** U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW) industry data provided by the Minnesota IMPLAN Group, 2001 and 2008.

**Employment Multipliers:** U.S. Bureau of Economic Analysis RIMS II Employment Multipliers, 2006 (most currently available).

**Academic R&D Expenditures:** National Science Foundation (NSF) Survey of Research and Development Expenditures at Universities and Colleges, 2004 and 2008.

**NIH Funding:** National Institutes of Health, Office of Extramural Research, Award Trends, Dollars Awarded by State, 2004 and 2009.

**Clinical Trials:** National Institutes of Health, [Clinicaltrials.gov](http://Clinicaltrials.gov), trials that were initiated in 2009.

**Higher Education Degrees:** National Center for Educational Statistics, Integrated Postsecondary Education Data System (IPEDS), 2008.

**Occupational Employment:** U.S. Bureau of Labor Statistics, Occupational Employment Statistics (OES) survey data, 2008.

**Venture Capital:** Thomson Reuters' VentureXpert Database, 2004–2009, as of January 15, 2010.

**Patents:** U.S. Patent & Trademark Office data as available from the Thomson Reuters' Delphion Patent Analysis Database, 2004–2009, as of January 15, 2010.

For a more detailed discussion of the data and methodology used, please see the Appendix to the full national report. ©2010