

Wisconsin has specialized employment concentrations in two of the four bioscience industry subsectors—medical devices and equipment (location quotient of 1.29) and agricultural feedstock and chemicals (1.23). In the State, academic bioscience research and development expenditures totaled \$760 million in 2008, which translates into an above-average per capita figure. Bioscience academic R&D is primarily in medical sciences and in biological sciences. Wisconsin’s postsecondary institutions contribute substantially to the bioscience talent base with 4,099 students graduating with degrees in bioscience-related fields in 2008. Venture capital invested in State bioscience companies during the last six years totaled \$295 million, led by pharmaceuticals and human biotechnology. The 2,187 bioscience patents issued to Wisconsin inventors over the same six-year period were well diversified, led by surgical and medical instruments and biochemistry.

## ●●● Bioscience Performance Metrics

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

Metrics	Wisconsin	United States	Rank*
<b>Bioscience Industry, 2008</b>			
Total Bioscience Industry Employment, 2008	24,694	1,420,324	II
Bioscience Industry Location Quotient, 2008	0.83	n/a	III
Biosciences Industry Establishments, 2008	752	47,593	II
<b>Academic R&amp;D Expenditures, FY 2008</b>			
Bioscience R&D (\$ thousands)	\$759,863	\$31,818,810	14
Bioscience Share of Total R&D	68.0%	61.3%	10
Bioscience R&D Per Capita	\$135.02	\$104.54	9
Change in Bioscience R&D, FY 2004–08	20.8%	22.3%	27
<b>NIH Funding, FY 2009</b>			
Total, Including ARRA Funds (\$ thousands)	\$440,857	\$25,837,590	18
Per Capita Funding	\$77.96	\$84.16	17
Change in Baseline Funding, FY 2004–09**	-3.3%	-4.7%	29
Change in Total Funding, FY 2004–09	12.2%	14.6%	36
<b>Clinical Trials, Initiated 2009</b>	279	5,299	27
<b>Higher Education Degrees in Bioscience Fields, AY 2008</b>	4,099	161,811	12
<b>Employment in Bioscience-related Occupations, 2008</b>	12,890	717,510	19
<b>Bioscience Venture Capital Investments, 2004–09 (\$ millions)</b>	\$295.2	\$60,099	21
<b>Bioscience and Related Patents, 2004–09</b>	2,187	75,593	15

\*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.

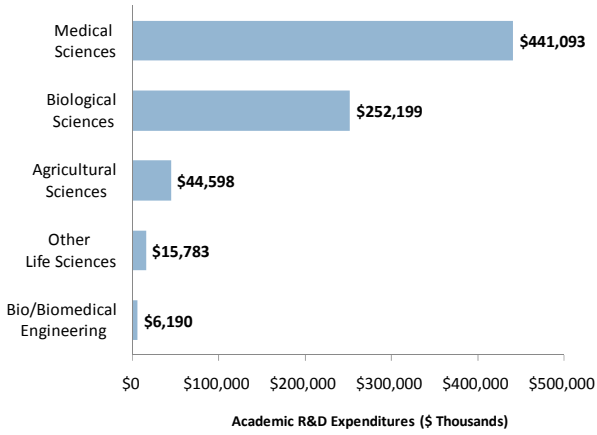
## ●●● Bioscience Industry Base, 2008

INDUSTRY SUBSECTOR	Wisconsin		United States	
	2008	2001-08 Change	2008	2001-08 Change
<b>AGRICULTURAL FEEDSTOCK &amp; CHEMICALS</b>				
Establishments	77	19.7%	2,440	16.0%
Employment	2,951	41.8%	114,793	1.9%
Location Quotient	1.23		n/a	
Direct-Effect Employment Multiplier	5.99		11.33	
Total Employment Impact	17,688		1,284,650	
Average Annual Wage	\$51,577		\$72,279	
<b>DRUGS &amp; PHARMACEUTICALS</b>				
Establishments	68	21.4%	2,771	6.4%
Employment	3,489	34.0%	311,882	2.3%
Location Quotient	0.53		n/a	
Direct-Effect Employment Multiplier	6.36		9.92	
Total Employment Impact	22,186		2,873,278	
Average Annual Wage	\$64,187		\$93,378	
<b>MEDICAL DEVICES &amp; EQUIPMENT</b>				
Establishments	341	17.6%	15,227	0.4%
Employment	11,800	-7.8%	435,509	2.0%
Location Quotient	1.29		n/a	
Direct-Effect Employment Multiplier	3.87		4.87	
Total Employment Impact	45,655		2,029,581	
Average Annual Wage	\$71,015		\$63,606	
<b>RESEARCH, TESTING, &amp; MEDICAL LABORATORIES</b>				
Establishments	266	51.8%	27,154	57.7%
Employment	6,454	68.1%	558,140	46.1%
Location Quotient	0.55		n/a	
Direct-Effect Employment Multiplier	2.30		3.30	
Total Employment Impact	14,845		1,853,127	
Average Annual Wage	\$62,745		\$80,785	
<b>TOTAL BIOSCIENCES INDUSTRY</b>				
Establishments	752	28.4%	47,593	28.3%
Employment	24,694	15.8%	1,420,324	15.8%
Location Quotient	0.83		n/a	
Direct-Effect Employment Multiplier	4.06		5.82	
Total Employment Impact	100,374		8,040,636	
Average Annual Wage	\$65,566		\$77,595	
<b>TOTAL PRIVATE SECTOR</b>				
Establishments	153,678	8.9%	8,860,956	13.8%
Employment	2,387,924	2.1%	113,917,377	3.5%
Average Annual Wage	\$38,752		\$45,229	

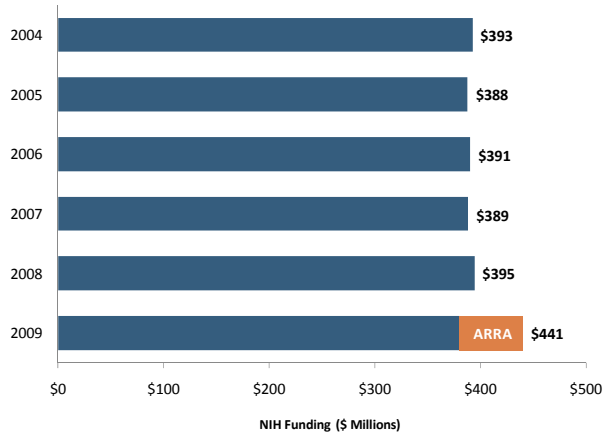
Note: U.S. employment metrics include Puerto Rico. Estimates of total employment impacts do not include Puerto Rico.

## ●●● Bioscience Performance Metrics

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

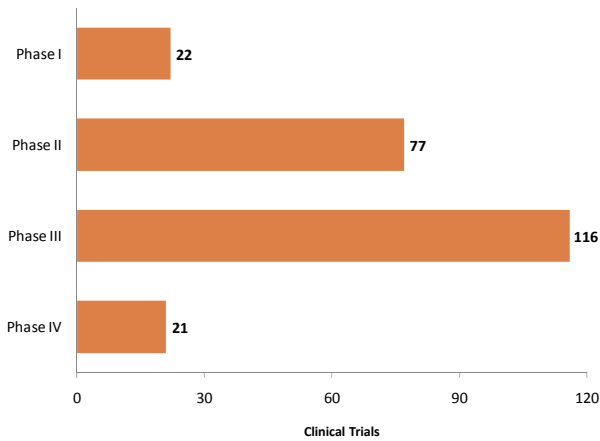


**NIH Awards in Wisconsin, 2004–2009**

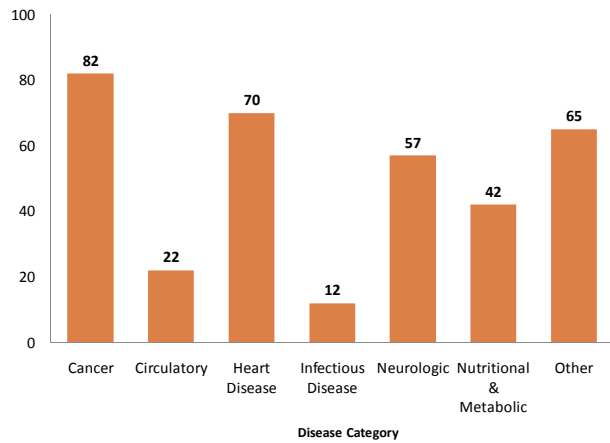


## ●●● Recent Clinical Trial Activities

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

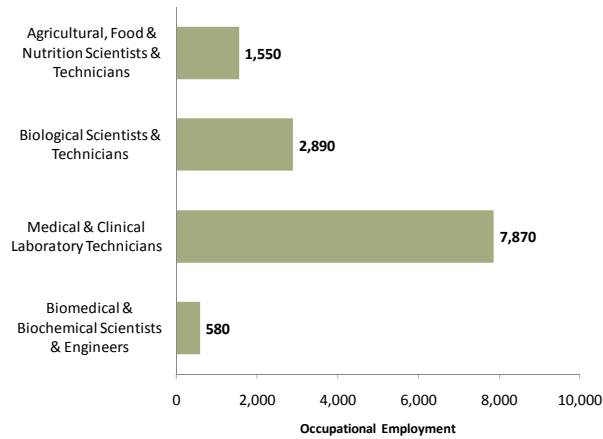


**Clinical Trials by Major Disease Category in Wisconsin, 2009**

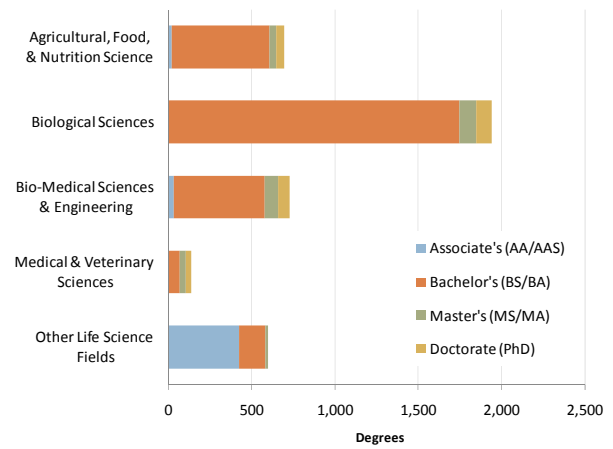


## Bioscience Talent Base

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

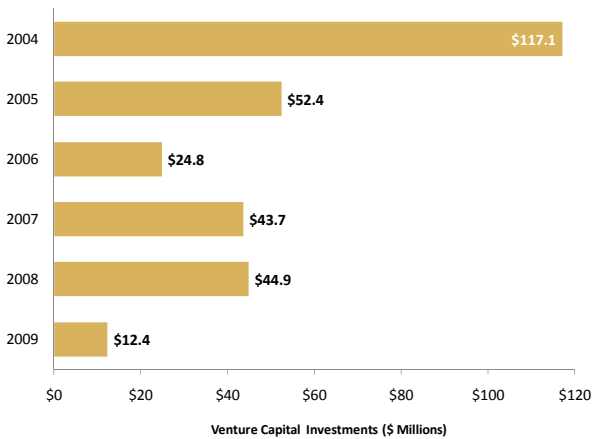


**Bioscience-related Degrees in Wisconsin, AY 2008**

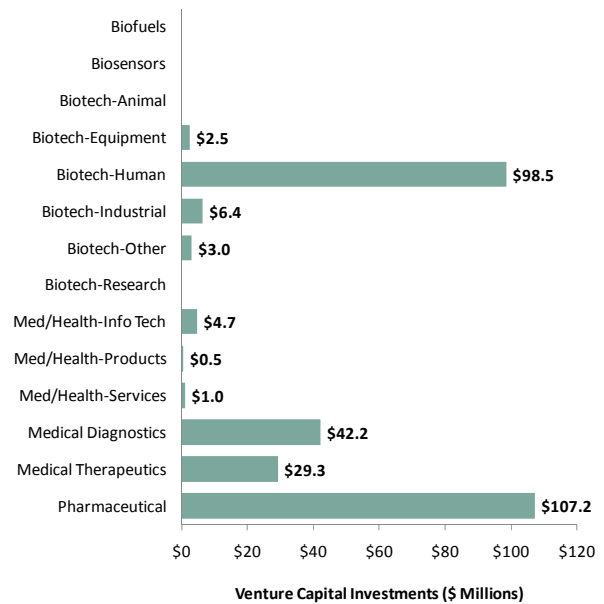


## Bioscience Venture Capital

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

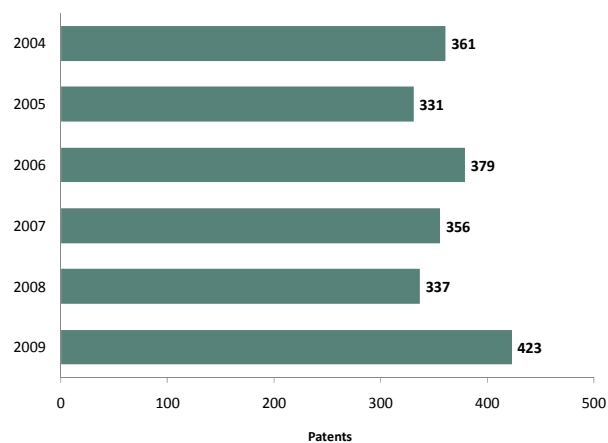


**Bioscience-related Venture Capital Investments in Wisconsin by Segment, 2004–2009**

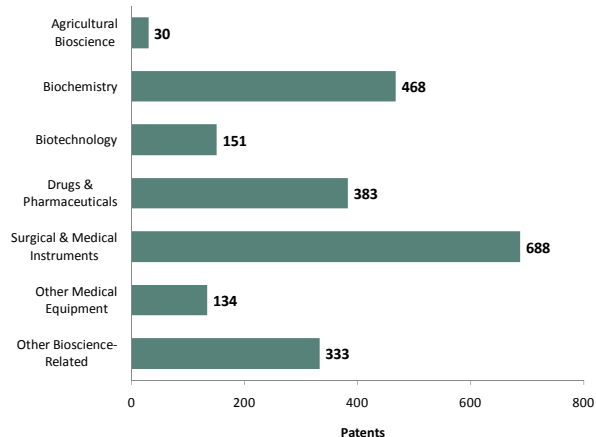


## ●●● Bioscience Patents

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



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



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## 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