

MINNESOTA

Minnesota has more than 7 percent of national employment and a strong specialization in the medical devices and equipment subsector (location quotient of 3.48), which also grew by 27 percent over the 6 years ending in 2006. Total academic bioscience research expenditures in 2006 were \$440 million. In addition, funding from the National Institutes of Health grew faster than the national average. In both bioscience venture capital and bioscience patents, the State ranked in the top 10 nationally. Of the \$1.47 billion in venture capital invested in the biosciences over the past 6 years, the largest shares were in medical therapeutics and biotechnology equipment (which combined accounted for 72 percent of venture capital investments). The 4,790 bioscience patents issued were also heavily in surgical and medical instruments.

Major Industry Developments and Recent Successes

- **Genmab**, a leading international biotechnology company, acquired PDL BioPharma Inc.'s antibody manufacturing facility in Brooklyn Park for \$240 million. Genmab will retain 170 employees in Minnesota.
- **Nestle** chose the Twin cities as the North American headquarters for its HealthCare Nutrition business, which is part of Nestle Nutrition.
- **Eisai Co. Ltd.**, a research-based human health care company, acquired MGI Pharma Inc. for approximately \$3.9 billion in early 2008.

Recent State Initiatives

The Minnesota Partnership for Biotechnology and Medical Genomics is a collaborative venture among the Mayo Clinic, the University of Minnesota, and the State of Minnesota that seeks to position Minnesota as a world leader in biotechnology and medical genomics applications that will result in new medical discoveries, thereby improving health care for patients and supporting the development of new business and jobs in Minnesota. The State of Minnesota has invested \$70 million in the Partnership between 2003 and 2007. The Partnership funds R&D and infrastructure support projects and has used funds to recruit top scientists to Minnesota. The Partnership's new comprehensive genomics research facility was completed in 2007. It includes bioinformatics, the Advanced Genomics Technology Center, and proteomics research labs as well as space for Partnership research.

The Minnesota Legislature passed two bills in 2007 to implement the **Next Generation Energy Initiative** proposed by Governor Tim Pawlenty. Under this Initiative, Minnesota will provide more than \$40 million to spur renewable energy research, project demonstration and deployment, and the development of recommendations on the most efficient ways for Minnesota to achieve energy independence. A portion of these funds, \$2.4 million in FY 2007, will be used to conduct biomass research and other bioenergy projects.

For additional information on Minnesota's bioscience policies and programs, please see <http://www.deed.state.mn.us> and <http://www.lifesciencealley.org>.

Bioscience Industry Base, 2006

Industry Subsector	Minnesota		United States	
	2006	2001-06 Change	2006	2001-06 Change
Agricultural Feedstock & Chemicals				
Establishments	56	7.7%	2,183	3.8%
Employment	1,732	3.0%	105,846	-6.1%
Location Quotient	0.81		n.a.	
Direct-Effect Employment Multiplier	6.76		11.22	
Total Employment Impact	11,708		1,214,709	
Average Annual Wage	\$56,565		\$67,870	
Drugs & Pharmaceuticals				
Establishments	47	-7.8%	2,654	1.9%
Employment	2,887	28.3%	317,149	4.0%
Location Quotient	0.45		n.a.	
Direct-Effect Employment Multiplier	5.00		9.92	
Total Employment Impact	14,442		2,880,242	
Average Annual Wage	\$62,434		\$86,892	
Medical Devices & Equipment				
Establishments	422	12.2%	15,215	0.3%
Employment	29,763	27.0%	422,993	-0.9%
Location Quotient	3.48		n.a.	
Direct-Effect Employment Multiplier	3.63		4.85	
Total Employment Impact	107,907		1,980,128	
Average Annual Wage	\$71,424		\$59,441	
Research, Testing, & Medical Laboratories				
Establishments	233	23.2%	22,857	32.7%
Employment	3,695	12.2%	449,991	17.8%
Location Quotient	0.41		n.a.	
Direct-Effect Employment Multiplier	2.33		3.25	
Total Employment Impact	8,620		1,440,500	
Average Annual Wage	\$63,033		\$71,284	
Total Private Sector				
Establishments	158,735	7.2%	8,575,730	10.2%
Employment	2,296,036	2.5%	113,463,842	3.1%
Average Annual Wage	\$42,324		\$42,272	

Note: n.a. = metric is not applicable.

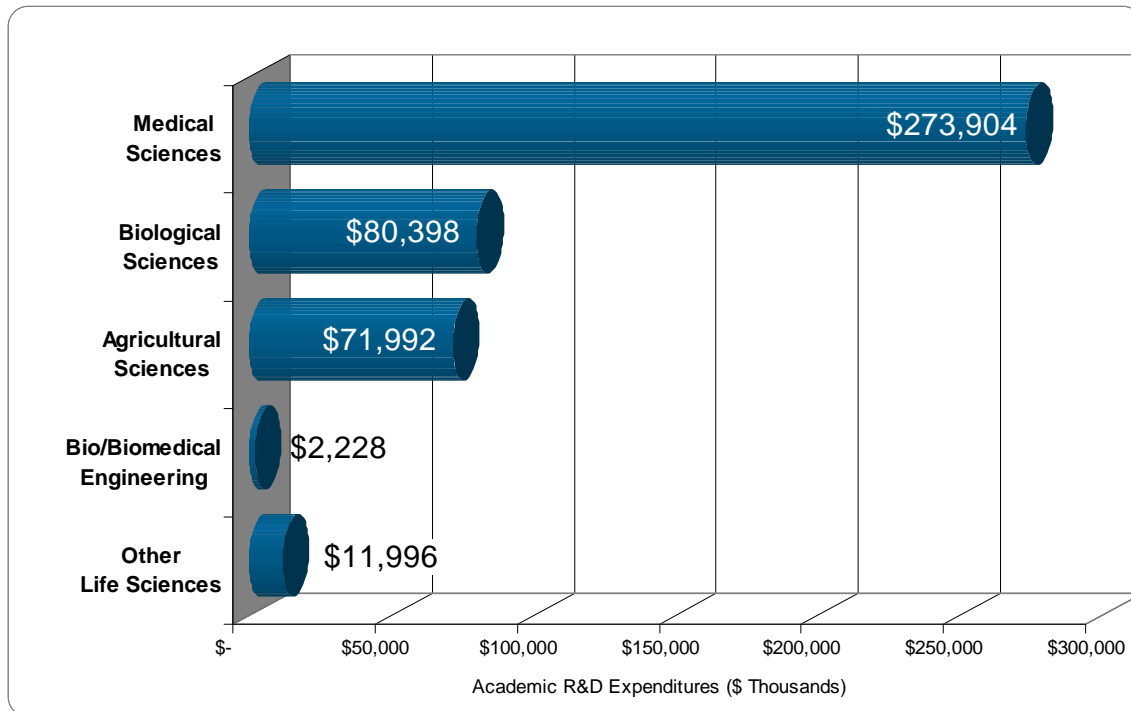
Additional Bioscience Performance Metrics

Summary of State Performance in Selected Bioscience-related Metrics

	Minnesota	United States	Rank
Academic R&D Expenditures, FY 2006			
Total (\$ thousands)	\$605,201	\$47,760,402	23
Bioscience R&D (\$ thousands)	\$440,518	\$29,307,628	20
Bioscience Share of Total R&D	72.8%	61.4%	
Bioscience R&D Per Capita	\$85.46	\$98.10	
Change in Bioscience R&D FY 2002–2006	17.6%	36.9%	
NIH Funding, FY 2007			
Total (\$ thousands)	\$443,524	\$21,066,389	14
Per Capita Funding	\$85.33	\$69.84	
Change in Funding, FY 2002–2007	19.1%	11.2%	
Higher Education Degrees in Bioscience Fields, AY 2006	3,188	143,433	13
Employment in Bioscience-related Occupations, 2006	13,530	588,520	14
Bioscience Venture Capital Investments, 2002-2007 (\$ millions)	\$1,474.0	\$51,260.9	8
Bioscience and Related Patents, 2002-2007	4,790	121,817	6

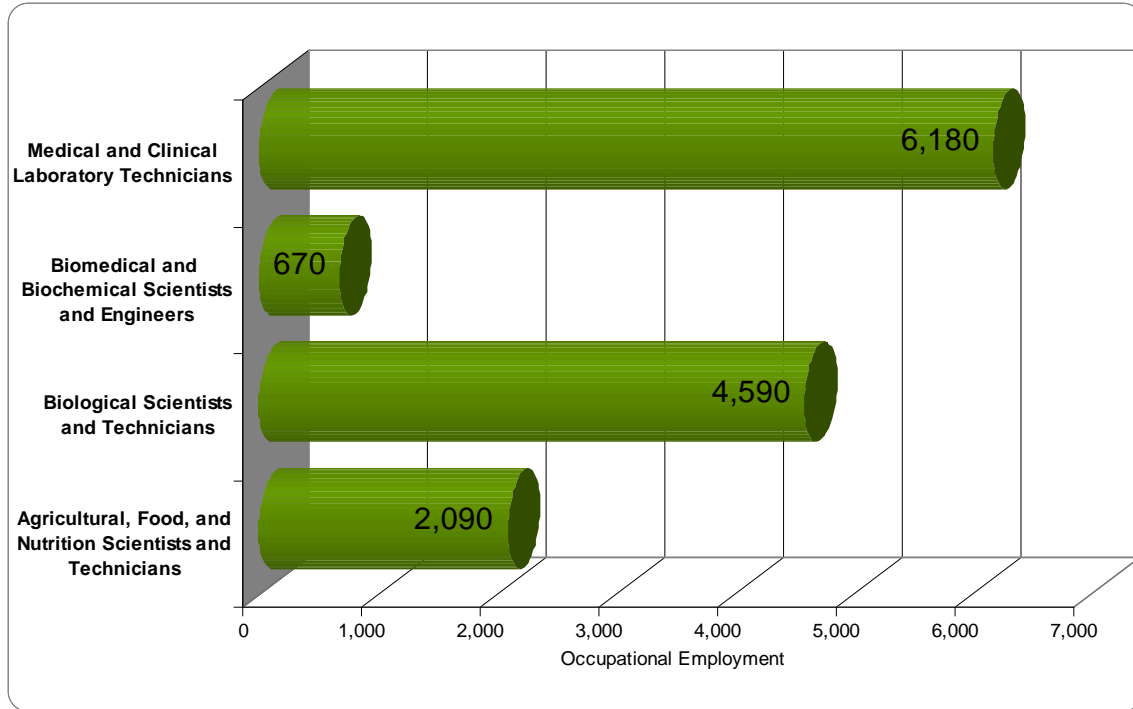
Bioscience R&D Base

Bioscience Academic R&D Expenditures in Minnesota, FY 2006

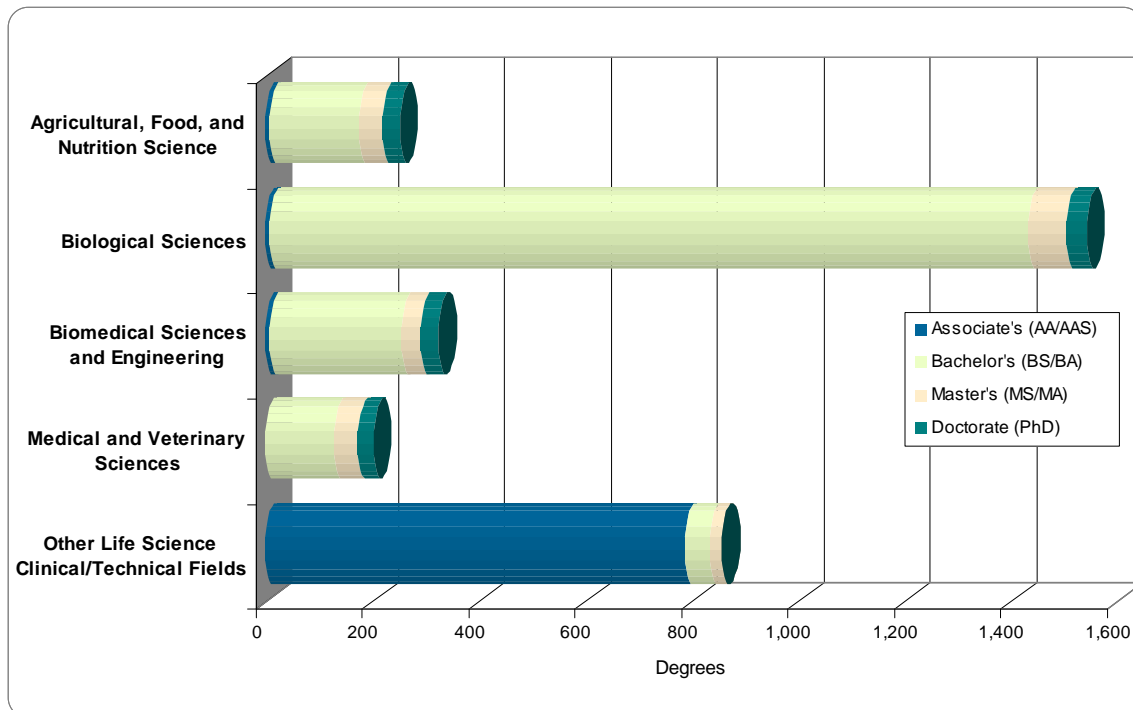


Bioscience Talent Base

Bioscience-related Occupational Employment in Minnesota, 2006

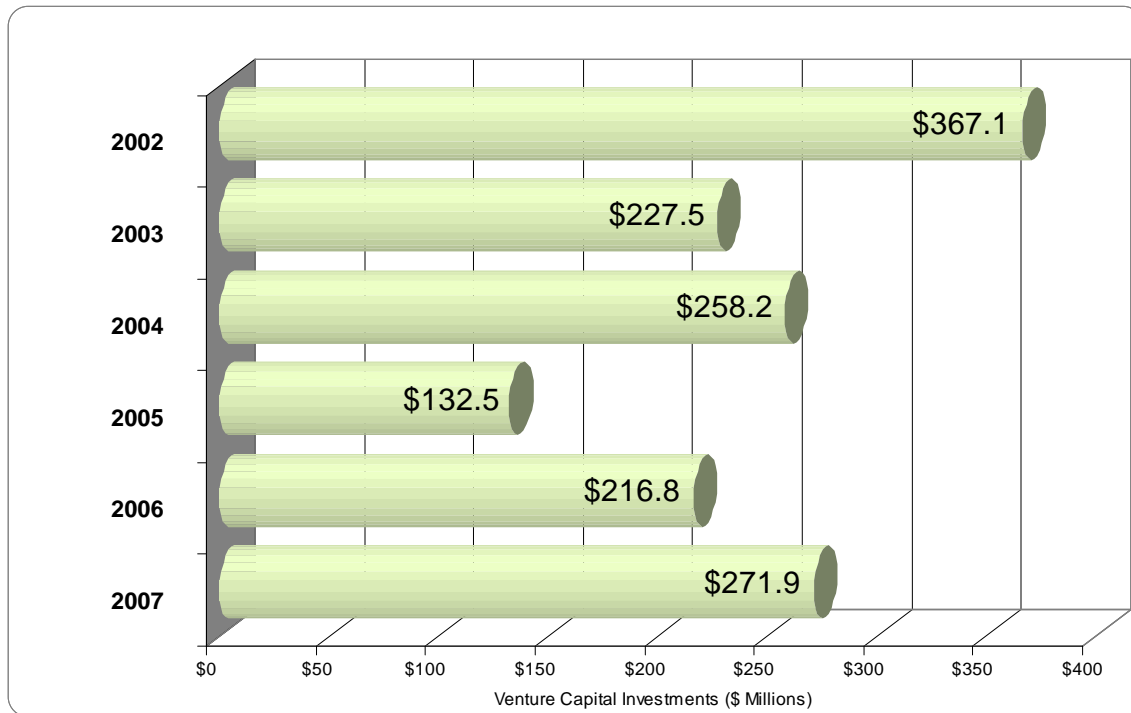


Bioscience-related Degrees in Minnesota, AY 2006

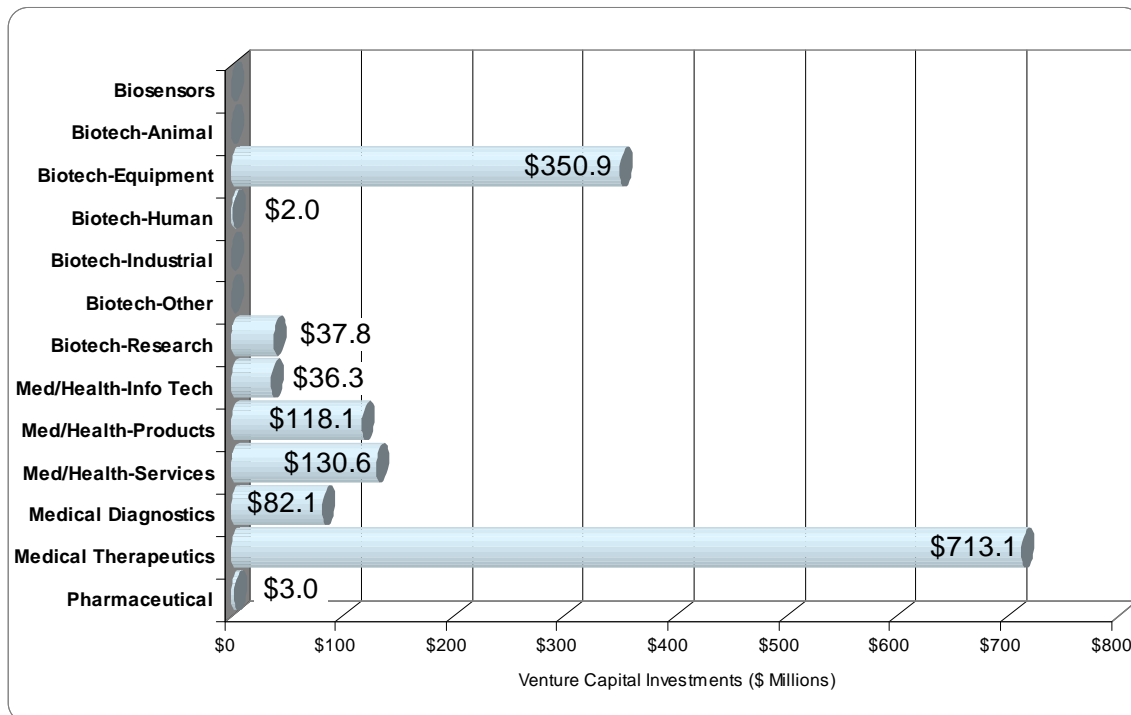


Bioscience Venture Capital

Bioscience-related Venture Capital Investments in Minnesota, 2002–2007

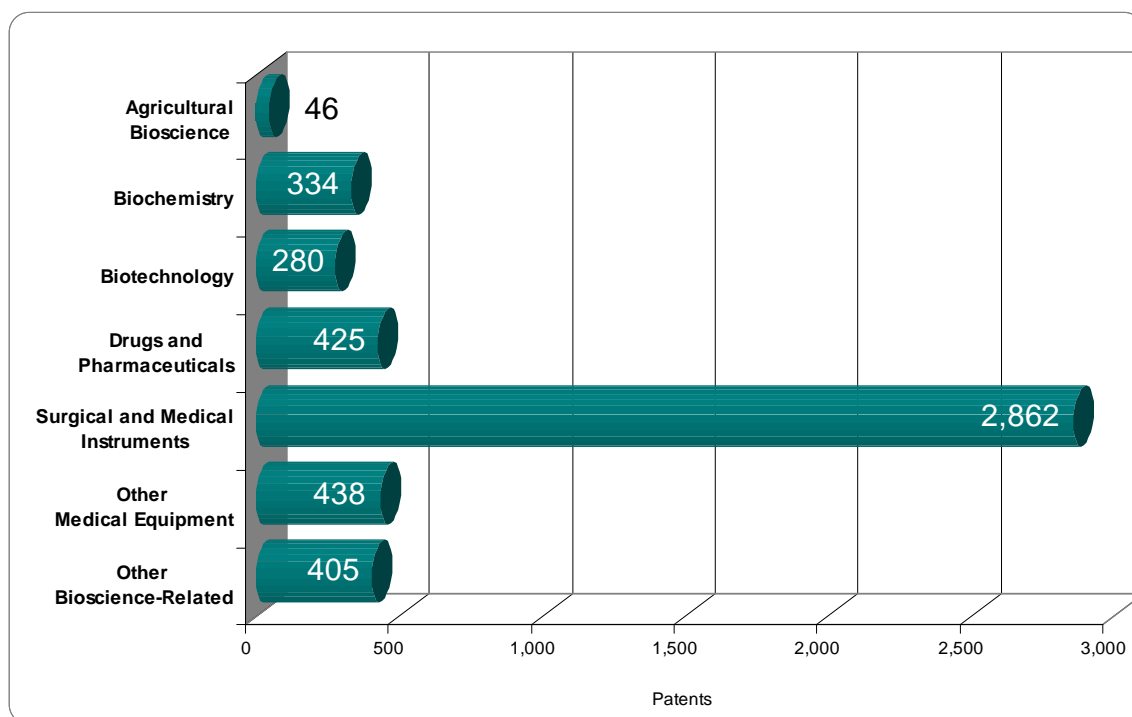


Bioscience-related Venture Capital Investments in Minnesota by Segment, 2002–2007



Bioscience Patents

Bioscience-related Patents by Classification Group in Minnesota, 2002–2007



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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 2006.

Employment Multipliers: U.S. Bureau of Economic Analysis RIMS II Employment Multipliers, 2005 (most currently available).

Academic R&D Expenditures: National Science Foundation (NSF) Survey of Research and Development Expenditures at Universities and Colleges, 2002 and 2006.

NIH Funding: National Institutes of Health – Office of Extramural Research, Award Trends – Dollars Awarded by State, 2002 and 2007.

Higher Education Degrees: National Center for Educational Statistics, Integrated Postsecondary Education Data System (IPEDS), 2006.

Occupational Employment: U.S. Bureau of Labor Statistics, Occupational Employment Statistics (OES) survey data, 2006.

Venture Capital: Thomson Reuters VentureExpert Database, 2002-2007, as of May 1, 2008.

Patents: U.S. Patent & Trademark Office data as available from the Thomson Reuters' Delphion Patent Analysis Database, 2002–2007, as of May 1, 2008.

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