BIOSCIENCE 08

DELAWARE

Two bioscience subsectors have employment specializations in Delaware—medical devices and equipment (location quotient of 2.01) and research, testing, and medical laboratories (1.63). A third subsector, agricultural feedstock and chemicals (location quotient of 1.19), is highly concentrated and nearly specialized. Academic research expenditures in the biosciences were $34.4 million in 2006, with a heavy concentration in the agricultural sciences, and an overall growth rate of 48 percent, higher than the national rate. Funding from the National Institutes of Health grew by 15 percent over the past 6 years, also higher than nationally. The 1,534 patents issued in the past 6 years were well diversified and placed Delaware substantially higher than its rank by population.

Major Industry Developments and Recent Successes

- Air Liquide opened a Delaware Research and Technology Center in Newark during 2007. Its focus areas include healthcare, among other fields.
- Dade Behring (now Siemens Healthcare Diagnostics) opened a Customer Solutions Center in Newark in 2007, showcasing products for physicians.
- Thermo Fisher Scientific acquired NanoDrop Technologies in 2007. A developer of laboratory instruments, Wilmington-based NanoDrop was founded in 2000 by former employees of the DuPont Agricultural Genomics Laboratories.

Recent State Initiatives

Shortly after the last BIO report, the Delaware bioscience industry launched the State's first formal BIO affiliate, the **Delaware BioScience Association**. In addition, Governor Ruth Ann Minner created by executive order the **Delaware Science and Technology Council**, an academic-industrial board charged with advancing the State's position in several fields, including life sciences and biotechnology.

Among the programs funded by the State's Delaware Strategic Fund is a **Technology Based Seed Fund**, which offers equity financing up to $50,000 at Phase I or $100,000 at Phase II for start-ups in several fields, including the biosciences.

In 2008, the University of Delaware created an **Office of Economic Innovation and Partnerships**, led by David Weir, a former DuPont agbiotech executive who was the founding director of the University's **Delaware Biotechnology Institute**.

In 2007, the State opened the **Conrad Schools of Science**, a magnet program that includes a middle-school curriculum offering Wilmington students in grades 6 through 9 concentrated study in biotechnology. The school has a range of partners in the biopharma industry and the healthcare sector.

For additional information on Delaware's bioscience policies and programs, please see http://dedo.delaware.gov and http://www.delawarebio.org.

Bioscience Industry Base, 2006

Industry Subsector	Delaware		United States	
	2006	2001–06 Change	2006	2001–06 Change
Agricultural Feedstock & Chemicals				
Establishments	6	-24.3%	2,183	3.8%
Employment	406	-39.3%	105,846	-6.1%
Location Quotient	1.19		n.a.	
Direct-Effect Employment Multiplier	6.41		11.22	
Total Employment Impact	2,603		1,214,709	
Average Annual Wage	$82,643		$67,870	
Drugs & Pharmaceuticals				
Establishments	8	100.0%	2,654	1.9%
Employment	646	-22.9%	317,149	4.0%
Location Quotient	0.63		n.a.	
Direct-Effect Employment Multiplier	4.35		9.92	
Total Employment Impact	2,809		2,880,242	
Average Annual Wage	$69,920		$86,892	
Medical Devices & Equipment				
Establishments	33	11.8%	15,215	0.3%
Employment	2,733	-14.5%	422,993	-0.9%
Location Quotient	2.01		n.a.	
Direct-Effect Employment Multiplier	3.02		4.85	
Total Employment Impact	8,256		1,980,128	
Average Annual Wage	$69,914		$59,441	
Research, Testing, & Medical Laboratories				
Establishments	99	78.7%	22,857	32.7%
Employment	2,360	-36.5%	449,991	17.8%
Location Quotient	1.63		n.a.	
Direct-Effect Employment Multiplier	2.17		3.25	
Total Employment Impact	5,130		1,440,500	
Average Annual Wage	$89,685		$71,284	
Total Private Sector				
Establishments	29,651	18.7%	8,575,730	10.2%
Employment	364,287	3.1%	113,463,842	3.1%
Average Annual Wage	$46,273		$42,272	

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

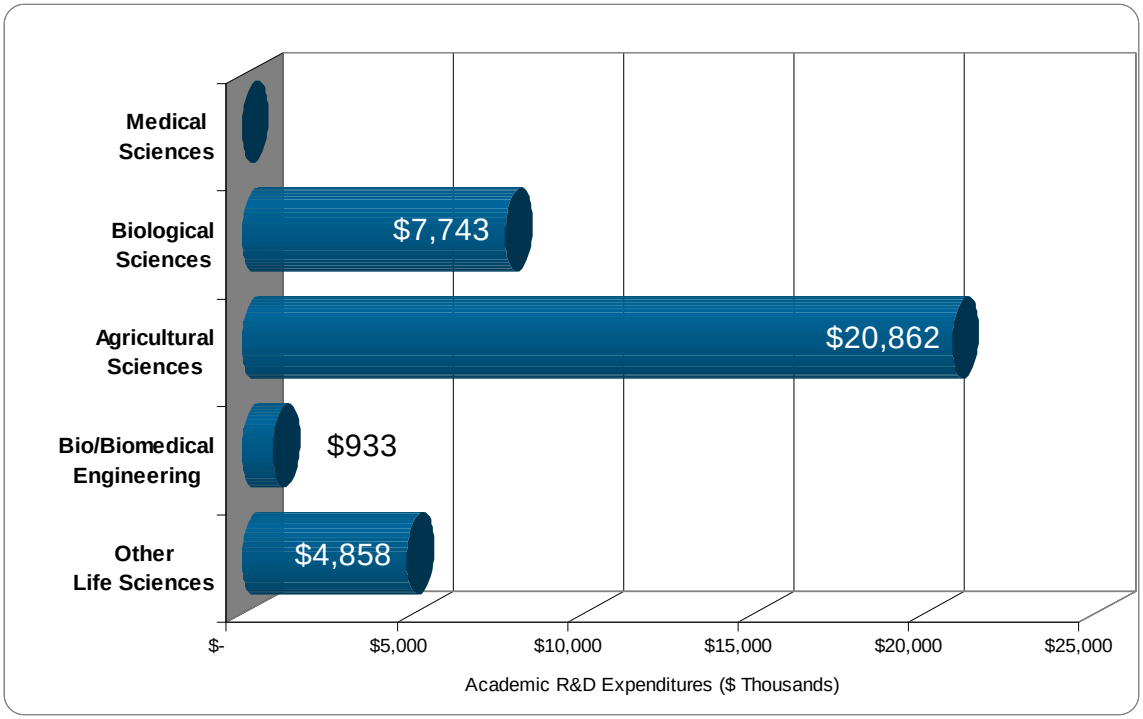
Additional Bioscience Performance Metrics

Summary of State Performance in Selected Bioscience-related Metrics

	Delaware	United States	Rank
Academic R&D Expenditures, FY 2006			
Total ($ thousands)	$122,001	$47,760,402	46
Bioscience R&D ($ thousands)	$34,396	$29,307,628	52
Bioscience Share of Total R&D	28.2%	61.4%	
Bioscience R&D Per Capita	$40.34	$98.10	
Change in Bioscience R&D FY 2002–2006	47.7%	36.9%	
NIH Funding, FY 2007			
Total ($ thousands)	$28,869	$21,066,389	44
Per Capita Funding	$33.38	$69.84	
Change in Funding, FY 2002–2007	15.2%	11.2%	
Higher Education Degrees in Bioscience Fields, AY 2006	478	143,433	47
Employment in Bioscience-related Occupations, 2006	1,320	588,520	49
Bioscience Venture Capital Investments, 2002-2007 ($ millions)	$0.0	$51,260.9	47
Bioscience and Related Patents, 2002-2007	1,534	121,817	25

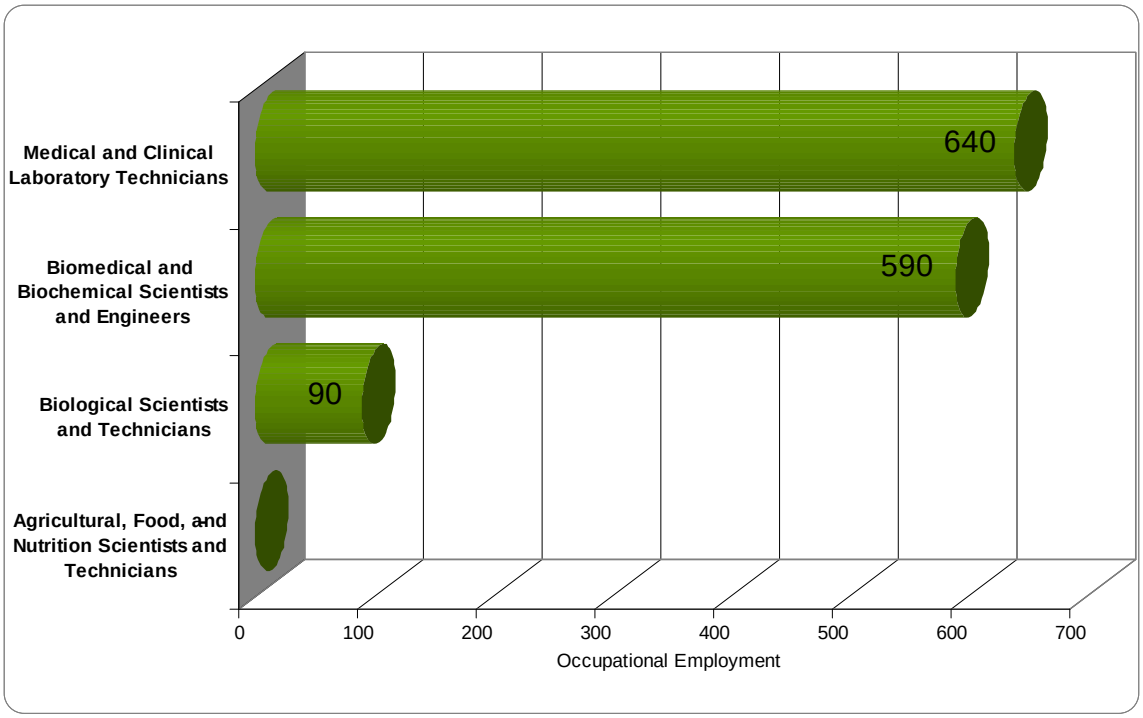
Bioscience R&D Base

Bioscience Academic R&D Expenditures in Delaware, FY 2006

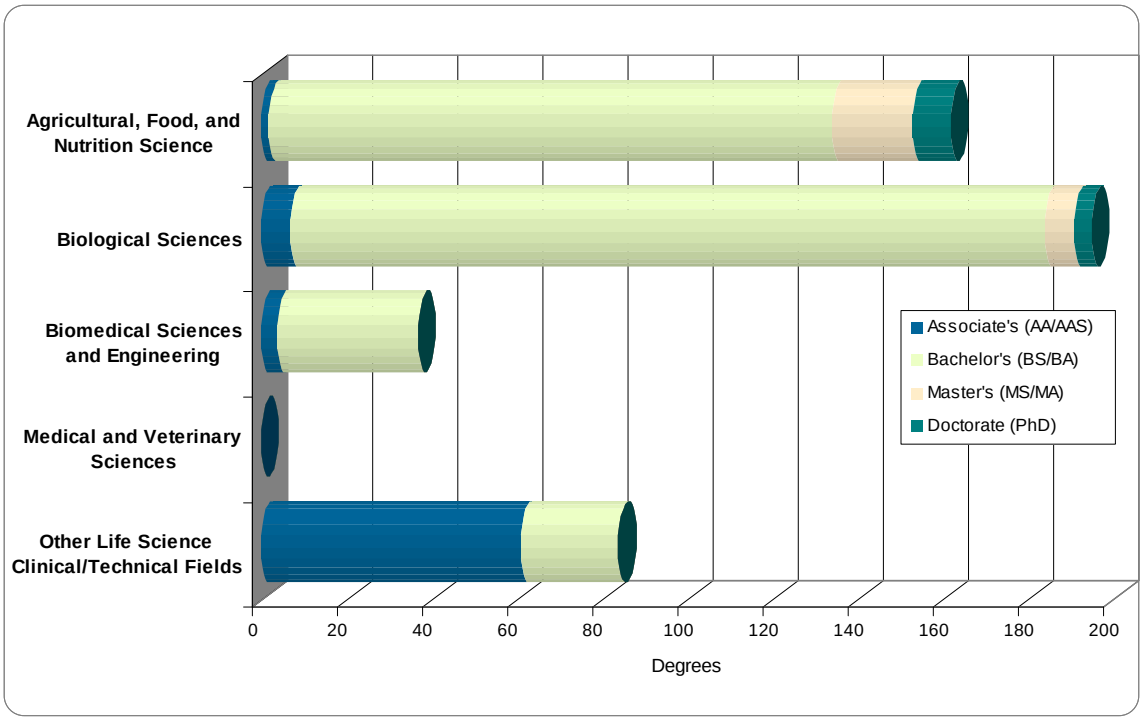


Bioscience Talent Base

Bioscience-related Occupational Employment in Delaware, 2006

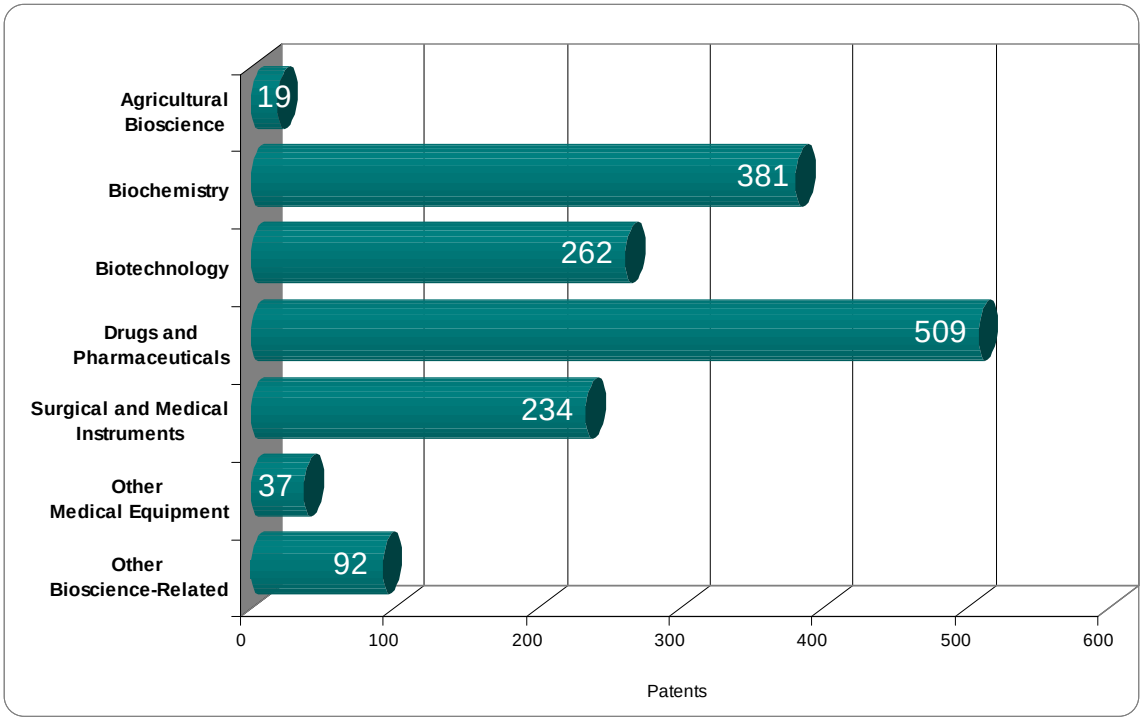


Bioscience-related Degrees in Delaware, AY 2006



Bioscience Patents

Bioscience-related Patents by Classification Group in Delaware, 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 VentureXpert 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.