

PUERTO RICO

Puerto Rico has an extremely high employment specialization (location quotient of 12.61) and more than 5 percent of national employment in the drugs and pharmaceuticals subsector. In addition, Puerto Rico was highly specialized and growing in medical devices and equipment (location quotient of 5.28) and in research, testing, and medical laboratories (1.68) with growth rates of 7 percent and 21 percent, respectively. All four subsectors grew and exceeded the national growth rate. Total academic bioscience research expenditures were \$59.6 million in 2006, mainly in the medical sciences. Puerto Rico had bioscience venture capital investments in both 2006 and 2007, totaling \$18.8 million, all in medical/health services. The 692 bioscience patents issued during the past 6 years were mainly in surgical and medical instruments and drugs and pharmaceuticals.

Major Industry Developments and Recent Successes

- **Abbott Biotechnology Limited** opened a new facility in Barceloneta in April 2007. The \$450 million facility is the company's largest single capital investment project to date and manufactures HUMIRA®. It employs 220 workers.
- **Lilly del Caribe** (a subsidiary of Eli Lilly and Company) opened a new 230,000-square-foot facility in August 2007. The \$150 million facility will employ 250 and manufacture the active ingredient in Cymbalta® and CIALIS®. This plant follows the 2006 opening of an \$850 million biotechnology manufacturing facility.
- **BD Biosciences** (a division of Becton-Dickinson) opened a new facility in October 2007 that will produce monoclonal antibody reagents for research and diagnostics. This project is an investment of \$53 million.

Recent State Initiatives

Puerto Rico continued pursuing the **Bio Island** strategy released in 2006. In October 2007, the government transferred 80 acres valued at \$200 million to the **Puerto Rico Science, Technology, and Research Trust**. The Trust plans to start construction within 36 months on the first phase of a "Science City," beginning with 250,000 square feet of laboratory and incubator space.

This project is at the heart of a 2,000-acre **San Juan Knowledge Corridor** linking new construction at the campuses of the University of Puerto Rico (UPR) and the Puerto Rico Cancer Center. At the Cancer Center, which won an \$18 million Partnership for Excellence award from the National Cancer Institute in partnership with the University of Texas M.D. Anderson Cancer Center, a 40,000-square-foot research building will open in October. At UPR, a 120,000-square-foot molecular sciences complex will open in 2009. UPR and the Puerto Rico Industrial Development Company (PRIDCO) partnered with members of the Puerto Rico Bioscience Alliance to open a new **Bioprocess Development and Training Complex** comprising 28,000 square feet over two separate wings for research and training.

Four UPR campuses now offer certificates in biotech, and the Pontifical Catholic University will offer a master's degree with emphasis on business administration. In November 2007, Amgen announced a \$1 million grant to UPR for a **Biotechnology Mentorship Initiative to Develop Scientists**, sponsoring 200 undergraduate research projects. At the K-12 level, UPR Mayaguez hosts a 2-week **Biotechnology Summer Camp**.

For additional information on Puerto Rico's bioscience policies and programs, please see <http://www.pridco.org/portal/> or <http://www.induniv.org>.

Bioscience Industry Base, 2006

Industry Subsector	Puerto Rico		United States	
	2006	2001-06 Change	2006	2001-06 Change
Agricultural Feedstock & Chemicals				
Establishments	13	225.0%	2,183	3.8%
Employment	505	41.1%	105,846	-6.1%
Location Quotient	0.73		n.a.	
Direct-Effect Employment Multiplier	n.a.		11.22	
Total Employment Impact	n.a.		1,214,709	
Average Annual Wage	\$48,535		\$67,870	
Drugs & Pharmaceuticals				
Establishments	87	14.5%	2,654	1.9%
Employment	26,251	10.5%	317,149	4.0%
Location Quotient	12.61		n.a.	
Direct-Effect Employment Multiplier	n.a.		9.92	
Total Employment Impact	n.a.		2,880,242	
Average Annual Wage	\$53,151		\$86,892	
Medical Devices & Equipment				
Establishments	116	31.8%	15,215	0.3%
Employment	14,659	6.7%	422,993	-0.9%
Location Quotient	5.28		n.a.	
Direct-Effect Employment Multiplier	n.a.		4.85	
Total Employment Impact	n.a.		1,980,128	
Average Annual Wage	\$31,248		\$59,441	
Research, Testing, & Medical Laboratories				
Establishments	680	23.5%	22,857	32.7%
Employment	4,973	21.2%	449,991	17.8%
Location Quotient	1.68		n.a.	
Direct-Effect Employment Multiplier	n.a.		3.25	
Total Employment Impact	n.a.		1,440,500	
Average Annual Wage	\$21,299		\$71,284	
Total Private Sector				
Establishments	58,572	17.8%	8,575,730	10.2%
Employment	744,527	2.6%	113,463,842	3.1%
Average Annual Wage	\$22,215		\$42,272	

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

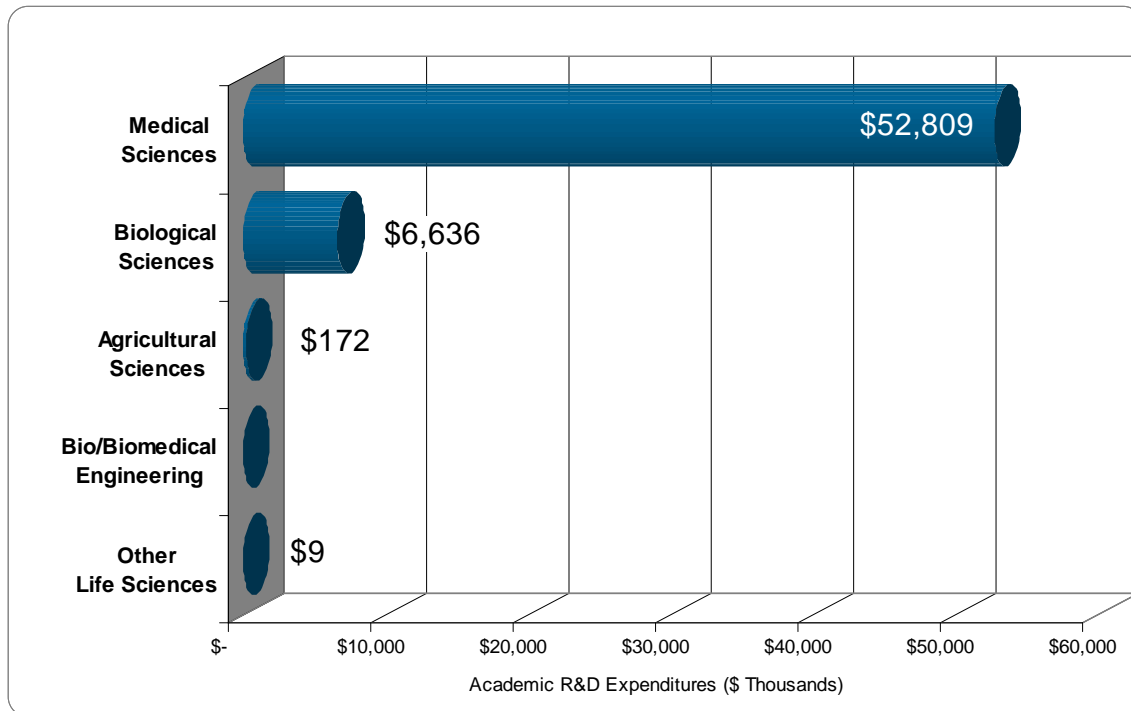
Additional Bioscience Performance Metrics

Summary of State Performance in Selected Bioscience-related Metrics

	Puerto Rico	United States	Rank
Academic R&D Expenditures, FY 2006			
Total (\$ thousands)	\$101,996	\$47,760,402	50
Bioscience R&D (\$ thousands)	\$59,626	\$29,307,628	46
Bioscience Share of Total R&D	58.5%	61.4%	
Bioscience R&D Per Capita	\$15.19	\$98.10	
Change in Bioscience R&D FY 2002–2006	34.3%	36.9%	
NIH Funding, FY 2007			
Total (\$ thousands)	\$59,856	\$21,066,389	41
Per Capita Funding	\$15.19	\$69.84	
Change in Funding, FY 2002–2007	-9.2%	11.2%	
Higher Education Degrees in Bioscience Fields, AY 2006	1,692	143,433	31
Employment in Bioscience-related Occupations, 2006	6,010	588,520	27
Bioscience Venture Capital Investments, 2002-2007 (\$ millions)	\$18.8	\$51,260.9	38
Bioscience and Related Patents, 2002-2007	692	121,817	34

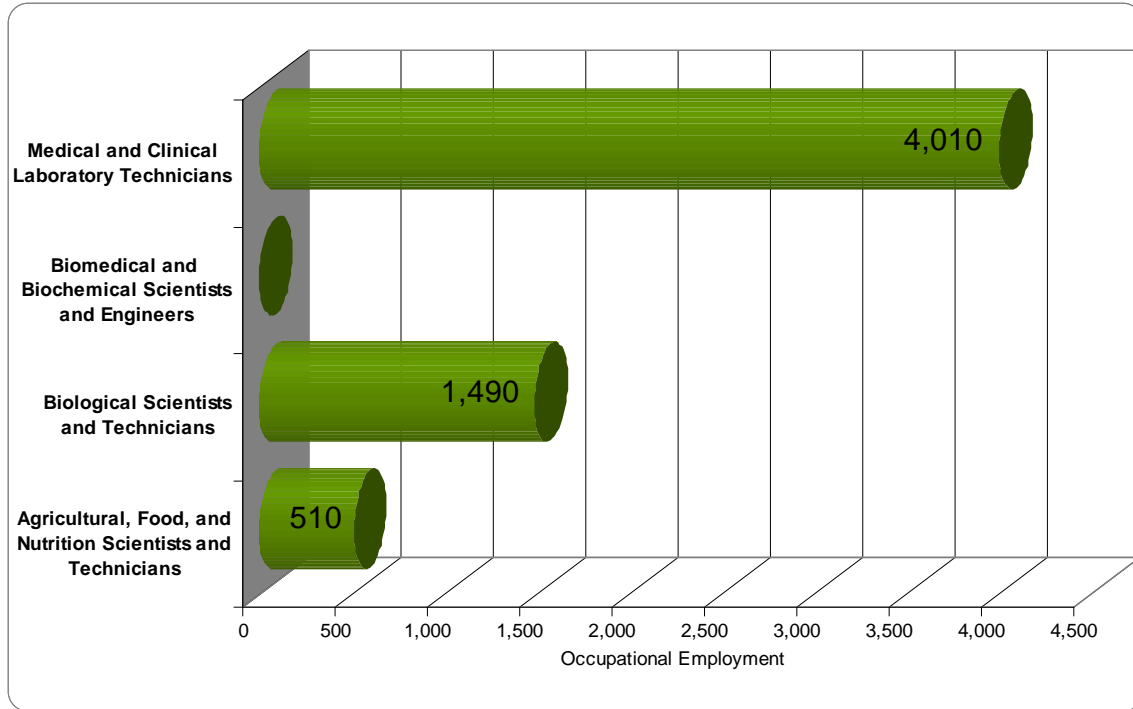
Bioscience R&D Base

Bioscience Academic R&D Expenditures in Puerto Rico, FY 2006

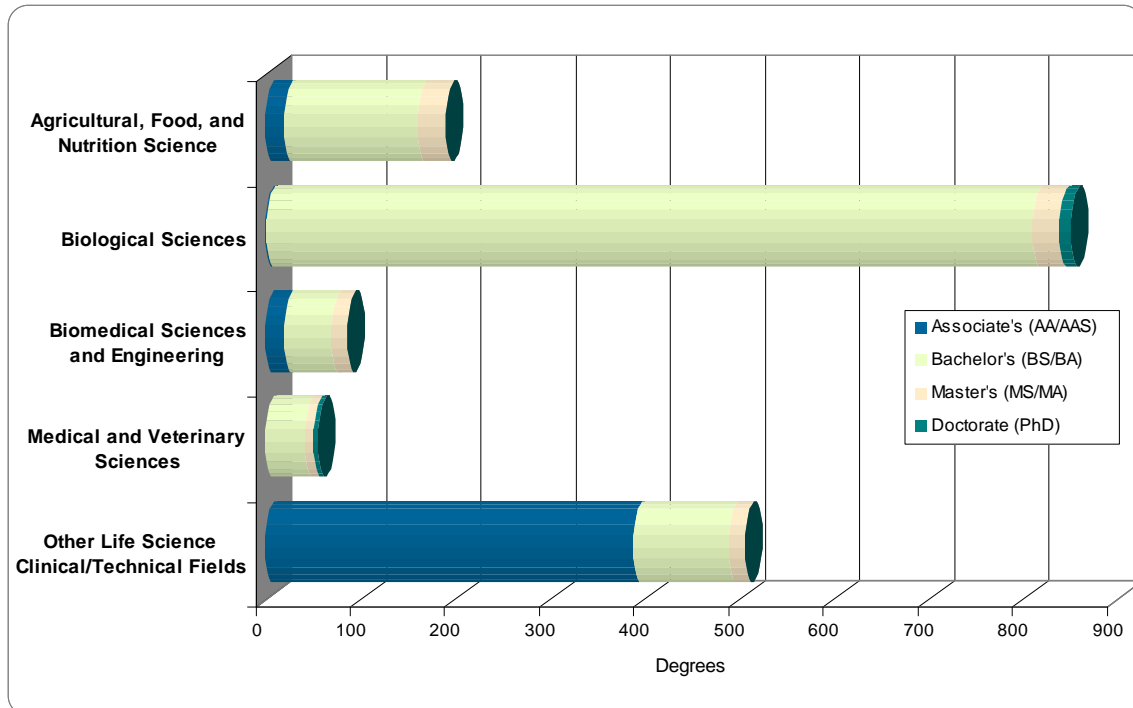


Bioscience Talent Base

Bioscience-related Occupational Employment in Puerto Rico, 2006

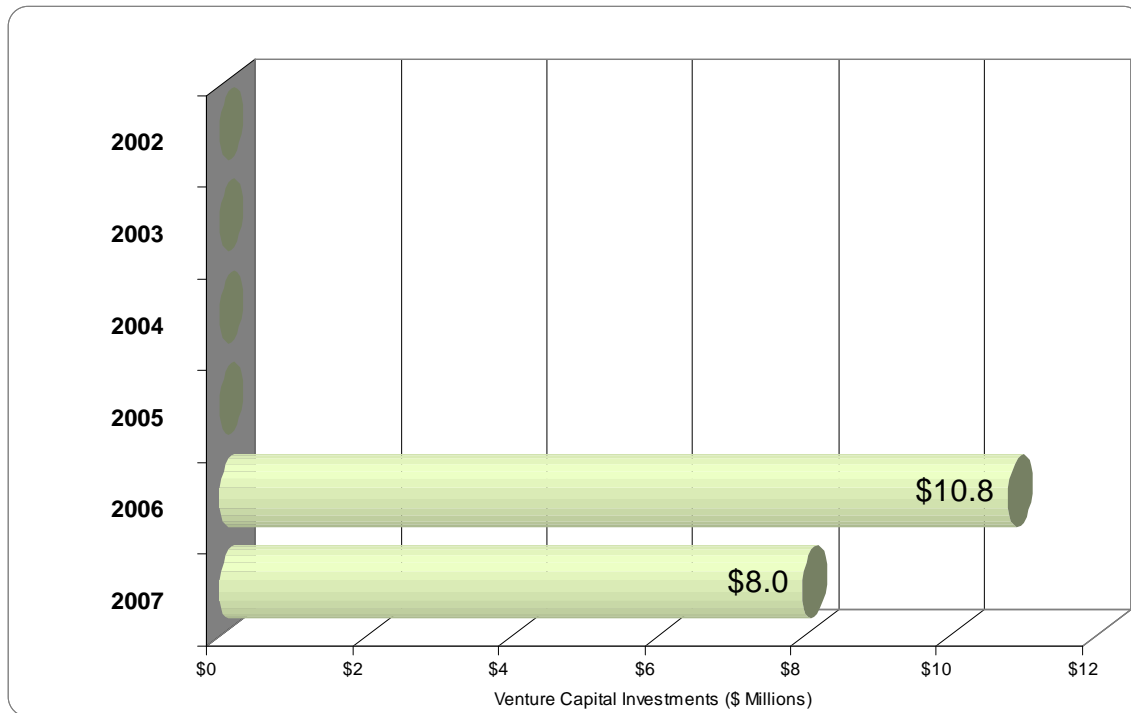


Bioscience-related Degrees in Puerto Rico, AY 2006

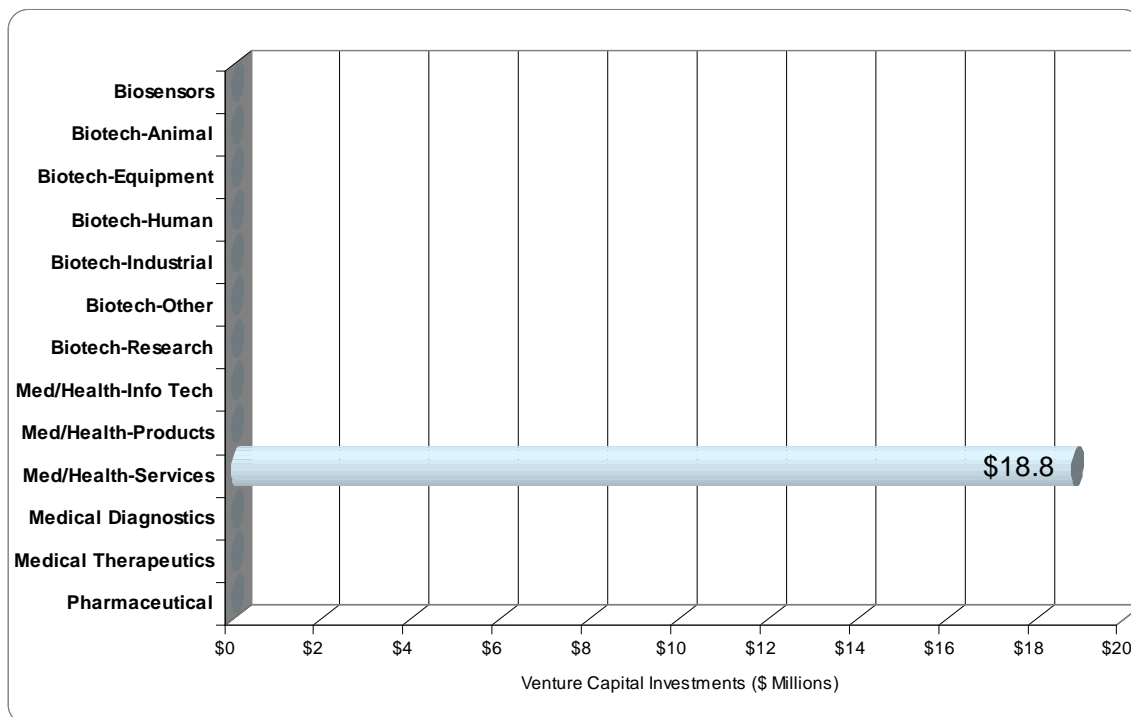


Bioscience Venture Capital

Bioscience-related Venture Capital Investments in Puerto Rico, 2002–2007

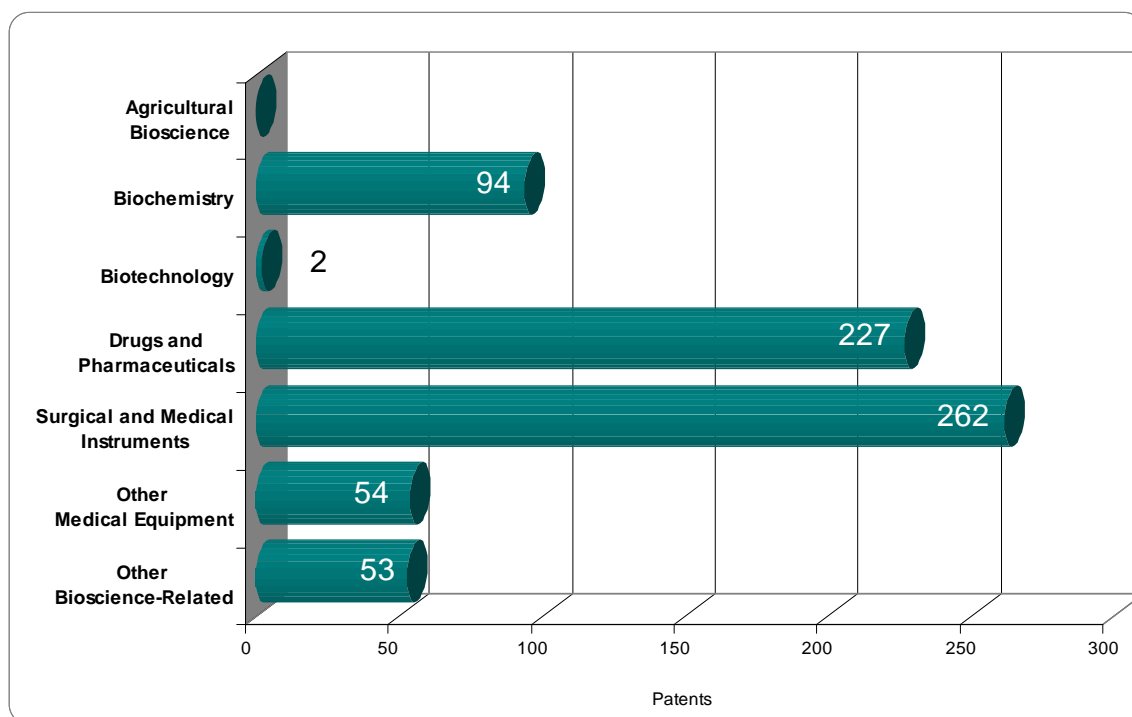


Bioscience-related Venture Capital Investments in Puerto Rico by Segment, 2002–2007



Bioscience Patents

Bioscience-related Patents by Classification Group in Puerto Rico, 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.