



## Overview and Summary of Recent Initiatives

In August 2005, the State of New Mexico's **BioTeP Initiative Task Force** issued a final report outlining a strategy to grow the state's convergent bioscience sector. The strategy was spearheaded by the Department of Economic Development's Office of Science and Technology with input from various public and private enterprises that make up the bioscience community in New Mexico. Governor Bill Richardson signed a proclamation recognizing the role that the biosciences have and will continue to play in the state's future economy. The New Mexico Office of Science and Technology recently joined forces with New Mexico Technology Research Corridor to leverage resources and minimize duplication of efforts.

The **New Mexico Biotechnology and Biomedical Association (NMBBA)** launched a new Web site in 2005 to improve communications and coordination on bioscience-related activities in the state and elected a new board in 2006. NMBBA also hosted a regulatory affairs workshop in December, which provided insight into key Food and Drug Administration (FDA) issues such as the importance of developing FDA-specific design controls for medical devices, clinical trial preparation and processes, FDA enforcement activities specific to biomedical and biotechnology companies, and related aspects of regulatory law.

## Building Bioscience R&D Capacity

### Recent state investments in facilities

**Pete and Nancy Domenici Hall**, a 42,300-square-foot expansion to the Clinical and Magnetic Resonance Research Center will house the MIND (Mental Illness and Neuroscience Discovery) Institute, the University of New Mexico (UNM) Mind Imaging Center, and the UNM BRAIN Center. The facility, which was completed in June 2005, brings together leading-edge neuro-imaging equipment and researchers, establishing a strong platform for disease-oriented, translational research.

The UNM plans to break ground in September 2006 on a **\$50 million Cancer Research and Treatment Center**. The designation as a National Cancer Institute center will also make it eligible for \$36 million in federal grants. The center will open by 2008 and will provide New Mexicans with state-of-the-art cancer treatments on par with the leading cancer centers across the United States. Funds originated from an increase in the cigarette tax in 2003.

### Research programs

The **New Mexico Tobacco Revenue Oversight Committee** has allocated a portion of the state's tobacco settlement revenues to bioscience research programs at the UNM Health Sciences Center (HSC). These

funds have been used for existing health care research programs by UNM HSC to translate research findings into effective clinical care programs, disseminate scholarly work, and recruit and hire scientists and support personnel.

## Encouraging Academic/Industrial Interaction

The **Southwest Biotechnology and Informatics Center (SWBIC)** at New Mexico State University (NMSU), funded initially by the U.S. Army Research Office, provides a single point of access to a store of widely distributed biotechnology information as well as developing new educational and bioinformatics services. SWBIC encourages information sharing among researchers in academia, industry, government, and the Department of Defense.

## Moving Technology into the Marketplace

### Commercializing university technology

**New Mexico Technology Research Collaborative (TRC)** is composed of a variety of organizations across the various regions in New Mexico. Members range from research universities and the State of New Mexico Department of Economic Development to institutes, national laboratories, and technology accelerators. The mission of TRC is to collaborate in the acceleration of new technology business formations and expansions that will benefit research programs of TRC members, entrepreneurs, industry, and investors. By promoting interaction among its members, TRC serves as a resource for both public and private sector entities interested in new job creation in the technology sector.

The **Science and Technology Corporation (STC)** at UNM is a nonprofit corporation formed in 1995 by the Regents of UNM and owned entirely by UNM to protect and transfer its faculty inventions to the commercial marketplace. STC licenses technology developed at UNM, including optics, microfluidics, and high-performance materials, as well as therapeutics, diagnostics, medical devices, and drug discovery tools. Additionally, STC manages all patenting, patent prosecution, and other intellectual property (IP) protection of UNM IP.

**Arrowhead Center, Inc.** is a nonprofit corporation created to commercialize IP at NMSU. The Arrowhead Center helps foster economic growth by integrating academic, research, and business talents in the business development process. The center also works to help recruit and retain faculty talent. Organizers hope the activities of the center will help create jobs, enhance student education, recruit and retain faculty, and attract and deploy venture capital to and in New Mexico.

### Supporting bioscience entrepreneurs and emerging companies

**Technology Ventures Corporation (TVC)**, a nonprofit organization sponsored by Lockheed Martin since 1993 as part of its contract with the Department of Energy for management of Sandia National Laboratories, identifies technologies with commercial potential, coordinates the development of business and management capabilities, and seeks sources of capital investment for businesses. Since its founding, TVC has assisted in securing \$627 million in capital investments and creating 7,824 jobs and 78 businesses. In addition to its offices in New Mexico, TVC has offices in California and Nevada.

**Lobo VentureLabs (LVL)**, a program of the STC, links companies with technologies in various stages of development to the resources necessary to commercialize these technologies. LVL provides a full array of commercialization services.

**Next Generation Economy (NextGen)** is a nonprofit organization that provides specific programs for entrepreneurs in several key clusters: entrepreneurial mentoring programs, professional services and capital resource mapping, business research/development services, and infrastructure support and talent connecting. Convergent bioscience is one of six economic clusters targeted for development by NextGen.

## Making Capital Available

### Pre-seed and seed capital

**New Mexico Private Investors (NMPI)** is an angel investor network whose members invest in early-stage technology and life science companies in New Mexico. NMPI members typically invest \$250,000 to \$1 million and will participate with venture capital firms or corporate strategic partners at a premoney valuation of less than \$5 million. NMPI provides seed capital, business plan development, staff recruitment and mentoring, marketing and financial advice, and help raising the next round of capital.

Other funds that provide seed capital in which New Mexico has invested include the following:

- **Mesa Capital Partners** was established in 2004 as an early-stage private-equity firm focusing on high-potential small businesses in industries and geographic areas underserved by other capital providers.
- **Verge** is a seed and pre-seed venture capital fund, investing in promising technology opportunities in New Mexico.
- **Village Ventures** is an early-stage venture-capital firm that invests in entrepreneurs building technology and life science companies in emerging U.S. technology centers.

### Venture capital

New Mexico has actively tried to improve the availability of venture capital through the creation of the **New Mexico Venture Capital Investment Program** at the New Mexico State Investment Council (NMSIC). The program allows the NMSIC to be a limited investor in venture capital funds provided the fund has an office in the state and assists emerging New Mexico companies. In 2003, the New Mexico State Legislature amended the program's statutory language to allow the NMSIC to make direct equity investments in New Mexico companies as well. The NMSIC's structure is fairly young, and its efforts have helped create a vibrant atmosphere of entrepreneurship and investment in New Mexico. With the strong support of Governor Richardson, this program has committed nearly \$200 million to quality New Mexico companies and funds in the past 3 years. Notably in 2005 alone, more than \$140 million in venture capital was invested in New Mexico technology companies.

Each New Mexico venture-capital fund must be a limited partnership or corporation organized and operating in the United States and maintaining its principal active office in New Mexico. Not more than \$15 million may be invested in any one New Mexico venture-capital fund, and such investments cannot exceed 50 percent of the committed capital of that fund. The funds may be invested in entrepreneurial businesses with the following conditions: the company must have an experienced management team, a rapidly growing and potentially large market, and a convincing proprietary or competitive advantage

where there are barriers to entry for other businesses and opportunity for significant capital appreciation for investors over a 5- to 7-year period. The total capital under investment in 23 venture capital funds as of 2005 is \$235 million, with the total amounts available now for investment at \$135+ million. The total amount committed in a typical year is \$20 million to \$40 million.

The New Mexico Venture Capital Investment Program has invested in the following venture-capital funds with a stated interest in the life sciences:

- **Fort Washington Capital Partners Group (FW Capital)** is the private equity division of Fort Washington Investment Advisors, Inc., a registered investment advisor. In New Mexico, FW Capital manages a \$46 million direct co-investment fund and provides advisory services to the state.
- **New Mexico Community Capital** was formed in late 2004 by business and community leaders to provide equity capital and management resources to qualifying businesses throughout New Mexico, particularly in rural and underinvested areas.
- **Technology Funding** manages public venture-capital funds with a focus on early-stage medical and biotechnology companies. Since its founding in 1979, Technology Funding has managed more than 20 funds and financed more than 250 emerging growth companies.
- **Tullis-Dickerson** provides venture capital to small and mid-sized health care companies at all stages of growth. Founded in 1986, the firm has raised four health-care venture-capital funds totaling approximately \$400 million. Within health care, Tullis-Dickerson focuses on biotechnology, the life sciences, health care information technology, health care services, medical devices, and medical distribution.
- **vSpring Capital**, with \$200million under management, invests in early-stage companies, particularly in the areas of information technology and the life sciences. The fund has offices in Utah and New Mexico.
- **Wasatch Venture Fund**, formed in 1994 with headquarters in Salt Lake City, Utah, and offices in Santa Fe, New Mexico, and Phoenix, Arizona, is a leading venture-capital firm in the Southwest region. Wasatch invests in early-stage technology companies and manages four funds with more than \$150 million in capital under management. Wasatch is an affiliate fund of Draper Fisher Jurvetson.

## Providing Space for Bioscience Companies

### Facilities financing

In 2005, legislation was passed and signed by the Governor creating the SMART Money Initiative under which the New Mexico Department of Economic Development and the New Mexico Finance Authority have joined forces to partner with New Mexico bankers to stimulate economic development in the state by offering low-cost loan financing to businesses creating new jobs for New Mexicans. The **SMART Money Fund** is a \$10 million fund that can be used to provide gap loans to companies looking to build or expand in New Mexico. The initiative is administered by the New Mexico Finance Authority.

The **Public Project Revolving Fund (PPRF)** was created in 1992 as a revolving loan fund to provide low-cost financing for capital projects with a useful life of 3 years or more. Public financing provides

borrowers with access to AAA-insured, tax-exempt rates—the same rates enjoyed by the State of New Mexico itself—because the PPRF is funded with government gross receipts tax revenues. The New Mexico Finance Authority administers the PPRF.

### Bioscience research parks

**Arrow Head Research Park** is a 257-acre tract of land located on the southern end of the NMSU campus. The first phase of development included construction of the Genesis Center (which serves as an incubation facility for small, start-up, research-oriented companies) and an Academic Research Center. The park also includes an 11,000 square-foot, single-tenant facility.

**Los Alamos Research Park** is a 40-acre technology community. Located adjacent to Los Alamos National Laboratory, tenants have access to its facilities, technologies, scientists, and engineers. The site is master planned to accommodate five buildings on 20,000-square-foot pads. Building One was completed for initial occupancy in February 2001. It is an 83,000-square-foot building incorporating office and light laboratory space.

**Sandia Science and Technology Park (SS&TP)** is a 217-acre technology community. Located adjacent to Sandia National Laboratories, tenants have easy access to its facilities, technologies, scientists, and engineers. Tenants in the SS&TP include Sandia industry partners and critical suppliers, as well as companies providing services to other high-tech companies in the park.

The **Science and Technology Park** at the UNM is managed by the UNM Real Estate Office. The park was established in 1987 and consists of research and development, laboratory, office, and mixed-use space with a focus on technology companies. The Science and Technology Park is a master-planned, 153-acre business and technology park adjacent to the UNM Campus, comprising more than 360,000 square feet of commercial space. The STC is located within the park.

## Addressing Talent Needs

### Recruiting management talent

Next Generation Economy, Inc., in concert with NMBBA, TVC, the State of New Mexico Department of Economic Development, and other organizations, provides referral services to technology entrepreneurs seeking management and technical professionals for their activities.

### Specialized postsecondary programs

**Albuquerque Technical Vocational Institute (TVI)** instituted the Biotechnology Training Program in 2003 to prepare students for employment in the biotechnology industry and facilities conducting research and development. TVI and UNM are articulating the transfer of credits of the biotechnology program for students who wish to pursue a baccalaureate degree in a related discipline. TVI is developing partnerships with the local biotechnology industry for internships and support.

**Northern New Mexico Community College** offers an associate of applied science degree in laboratory biotechnology. The program is designed to provide students with essential skills needed for positions as biotechnicians at industrial, medical, or research laboratories in the state. The program provides a strong background in the techniques and instruments used in biological and chemical laboratories with an emphasis on deoxyribonucleic acid (DNA) and protein isolation and analysis.

## K-12 outreach programs

**New Mexico Tech (NMT)** in Socorro has created a program to interest high school students in biotechnology. It offers mini-courses during the summers on the NMT campus. This year's course is entitled CSI: Socorro, and students learn about DNA forensic genotyping as part of a crime-solving exercise while learning molecular biology.

### Contacts

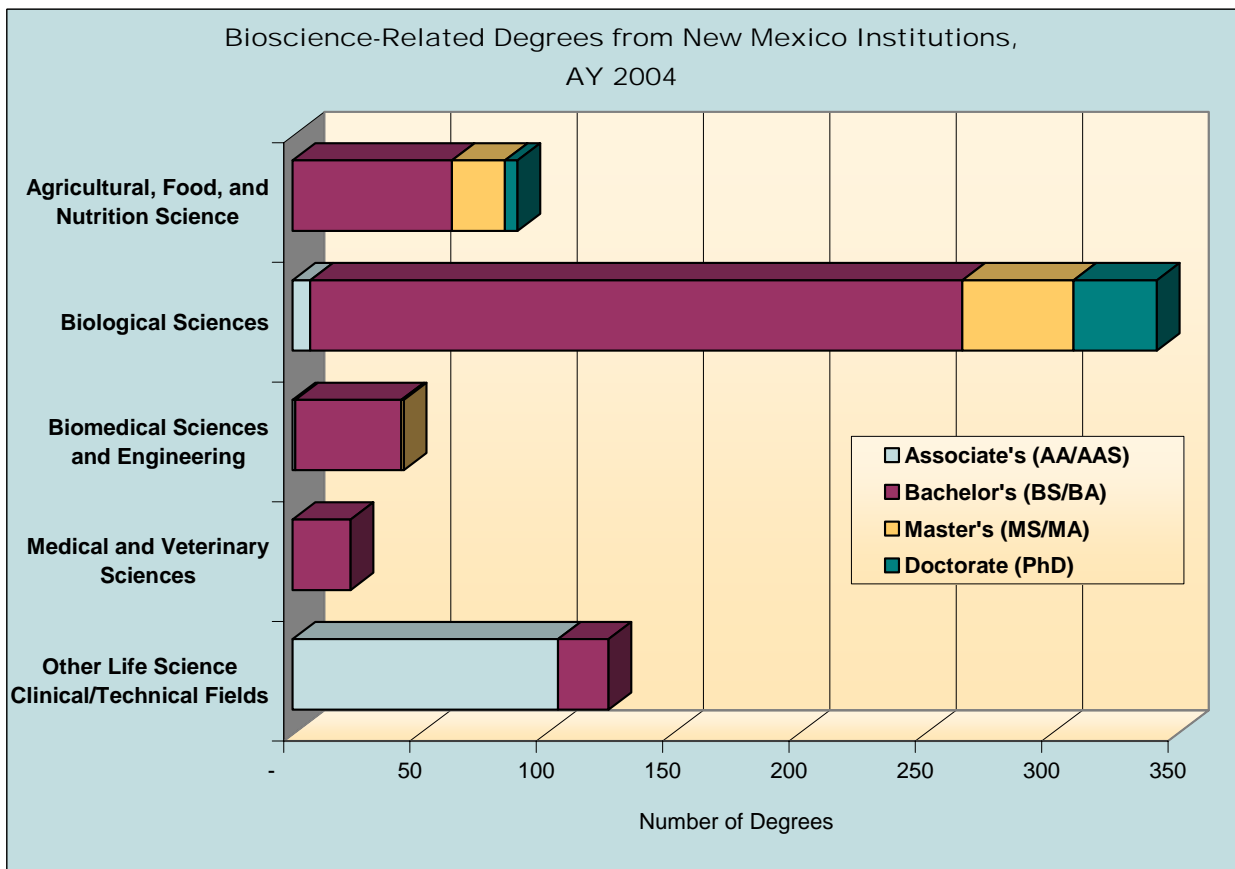
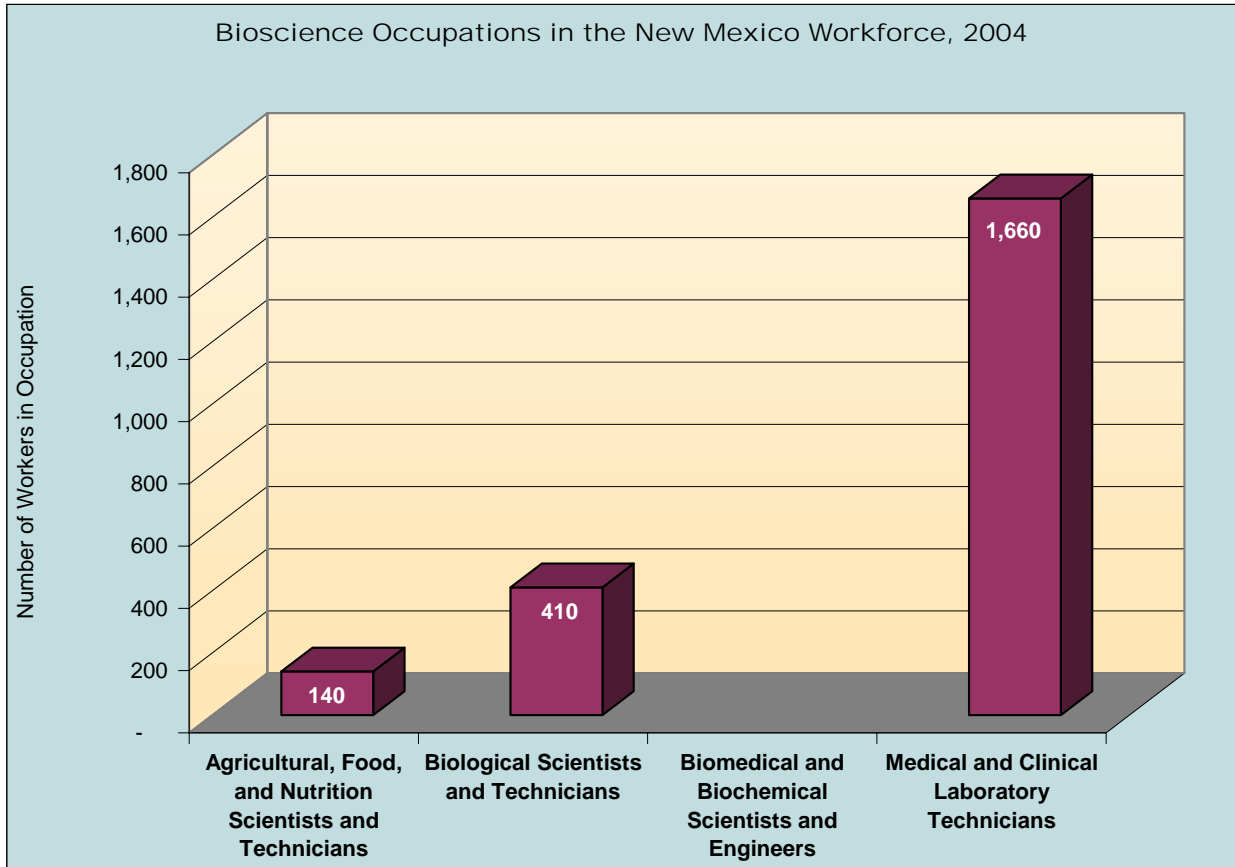
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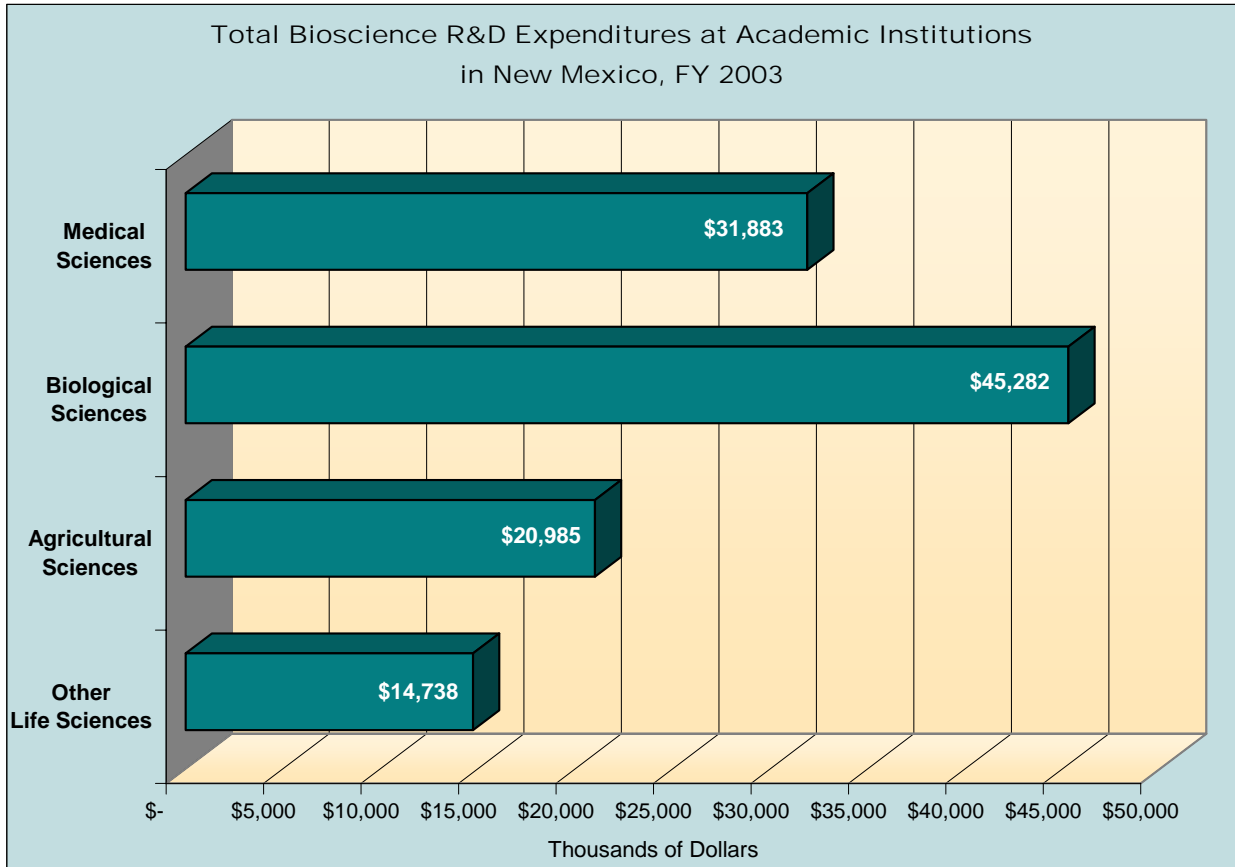
The New Mexico Biotechnology and Biomedical Association (NMBBA) connects regional bioscience organizations with national and international investors, customers, and collaborators. NMBBA further serves its membership of over 180 member and 100 device, diagnostics, bioinformatics, and pharmaceutical companies by sponsoring key networking events, workshops, and conferences.

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Industry Subsector	New Mexico	United States
<b>Agricultural Feedstock &amp; Chemicals</b>		
Establishments 2004	7	2,111
2001-2004 Establishment % Change	-9.9%	0.4%
Employment 2004	89	104,893
2001-2004 Employment % Change	32.6%	-6.9%
Share of U.S. Employment	0.1%	100.0%
Location Quotient	0.16	n.a.
Average Annual Wage 2004	\$33,130	\$63,383
Direct-Effect Employment Multiplier	4.16	10.91
Total Employment Impact	369	1,212,094
<b>Drugs &amp; Pharmaceuticals</b>		
Establishments 2004	9	2,589
2001-2004 Establishment % Change	-10.0%	-0.6%
Employment 2004	642	313,207
2001-2004 Employment % Change	83.4%	2.7%
Share of U.S. Employment	0.2%	100.0%
Location Quotient	0.38	n.a.
Average Annual Wage 2004	\$40,587	\$79,303
Direct-Effect Employment Multiplier	3.89	9.51
Total Employment Impact	2,500	2,731,321
<b>Medical Devices &amp; Equipment</b>		
Establishments 2004	89	15,190
2001-2004 Establishment % Change	21.2%	0.2%
Employment 2004	847	411,460
2001-2004 Employment % Change	9.1%	-3.6%
Share of U.S. Employment	0.2%	100.0%
Location Quotient	0.39	n.a.
Average Annual Wage 2004	\$31,496	\$56,449
Direct-Effect Employment Multiplier	2.43	4.56
Total Employment Impact	2,061	1,817,705
<b>Research, Testing, &amp; Medical Laboratories</b>		
Establishments 2004	147	20,565
2001-2004 Establishment % Change	12.7%	19.4%
Employment 2004	4,322	413,550
2001-2004 Employment % Change	22.9%	8.2%
Share of U.S. Employment	1.0%	100.0%
Location Quotient	1.96	n.a.
Average Annual Wage 2004	\$57,676	\$65,414
Direct-Effect Employment Multiplier	2.34	3.15
Total Employment Impact	10,129	1,272,936
<b>TOTAL PRIVATE SECTOR</b>		
Establishments 2004	46,649	8,156,137
2001-2004 Establishment % Change	3.0%	4.8%
Employment 2004	582,310	109,249,195
2001-2004 Employment % Change	3.6%	-0.7%
Share of U.S. Employment	0.5%	100.0%
Location Quotient	n.a.	n.a.
Average Annual Wage 2004	\$30,076	\$39,003

Source: Battelle calculations -- based on Bureau of Labor Statistics QCEW data from the Minnesota Implan Group, RIMS II Employment Multipliers from the Bureau of Economic Analysis, and the Census Bureau's Economic Census.  
 Note: n.a. = metric is not applicable.





	New Mexico	United States	Rank
<b>University R&amp;D Expenditures, FY 2003</b>			
Total (\$ thousands)	\$306,623	\$40,104,621	33
Life Science R&D (\$ thousands)	\$112,888	\$24,062,088	38
Percent of Total R&D	36.8%	60.0%	
Life Sciences Per Capita	\$60.22	\$82.74	
Change in Life Sciences FY 1999–2003	105.3%	52.7%	
<b>NIH Support to Institutions, FY 2004</b>			
Total (\$ thousands)	\$98,797	\$22,556,459	34
Per Capita Expenditures	\$52.70	\$77.56	
Change in Expenditures FY 2000–2004	51.7%	53.2%	
<b>Higher Education Degrees in Bioscience Fields, AY 2004</b>	623	111,329	40
<b>Bioscience Occupations in the Workforce, 2004</b>	2,210	616,140	40