

Utah has employment specializations in medical devices and equipment (location quotient of 2.54) and drugs and pharmaceuticals (1.64) and a lesser concentration in research, testing, and medical laboratories (1.10). Employment growth from 2001–2006 was rapid across all four subsectors. Total academic bioscience research expenditures were \$229 million in 2006, led by medical sciences with \$101 million. Venture capital invested in the biosciences during the past 6 years totaled \$252 million. Most funds were invested in medical therapeutics, medical diagnostics, and human biotechnology. The 1,126 bioscience patents were led by surgical and medical instruments and other medical equipment and generally well distributed across other categories.

Major Industry Developments and Recent Successes

- **Q Therapeutics**, a Salt Lake City–based developer of therapeutics for glial-mediated disease, announced in April 2008 a collaboration on Parkinson’s disease with the Buck Institute of Novato, California.
- **TechniScan Medical Systems**, a Salt Lake City–based developer of ultrasound technology for breast imaging, announced in February 2008 that it had closed a Series E round of \$13 million.

Recent State Initiatives

Since the last BIO report, Utah rolled out the **Utah Science Technology and Research (USTAR)** initiative announced in 2006. USTAR was appropriated \$15 million in annual funding to create research and outreach teams in several fields including the biosciences, and additional capital funds over 4 years for new interdisciplinary research buildings at the University of Utah and Utah State University (focusing on biofuels). USTAR also provides consulting resources to technology-based companies statewide through its Technology Outreach and Innovation Program and hosts a Department of Labor “WIRED” (Workforce Innovation in Regional Economic Development) grant focusing on bioscience career training.

The State also increased the amount of tax credit backing its **Utah Capital Investment Corp.** (a fund of venture funds) from \$100 million to \$300 million and increased its Research Activities tax credit.

For additional information on Utah’s bioscience policies and programs, please see <http://ustar.utah.gov> and <http://www.uita.org>

Bioscience Industry Base, 2006

| Industry Subsector | Utah | | United States | |
|--|----------|----------------|---------------|----------------|
| | 2006 | 2001-06 Change | 2006 | 2001-06 Change |
| Agricultural Feedstock & Chemicals | | | | |
| Establishments | 15 | 47.5% | 2,183 | 3.8% |
| Employment | 185 | 19.7% | 105,846 | -6.1% |
| Location Quotient | 0.20 | | n.a. | |
| Direct-Effect Employment Multiplier | 5.28 | | 11.22 | |
| Total Employment Impact | 977 | | 1,214,709 | |
| Average Annual Wage | \$50,034 | | \$67,870 | |
| Drugs & Pharmaceuticals | | | | |
| Establishments | 71 | 29.1% | 2,654 | 1.9% |
| Employment | 4,493 | 17.4% | 317,149 | 4.0% |
| Location Quotient | 1.64 | | n.a. | |
| Direct-Effect Employment Multiplier | 5.35 | | 9.92 | |
| Total Employment Impact | 24,017 | | 2,880,242 | |
| Average Annual Wage | \$46,090 | | \$86,892 | |
| Medical Devices & Equipment | | | | |
| Establishments | 244 | 19.2% | 15,215 | 0.3% |
| Employment | 9,245 | 1.6% | 422,993 | -0.9% |
| Location Quotient | 2.54 | | n.a. | |
| Direct-Effect Employment Multiplier | 3.43 | | 4.85 | |
| Total Employment Impact | 31,724 | | 1,980,128 | |
| Average Annual Wage | \$48,119 | | \$59,441 | |
| Research, Testing, & Medical Laboratories | | | | |
| Establishments | 218 | 27.2% | 22,857 | 32.7% |
| Employment | 4,281 | 32.0% | 449,991 | 17.8% |
| Location Quotient | 1.10 | | n.a. | |
| Direct-Effect Employment Multiplier | 2.45 | | 3.25 | |
| Total Employment Impact | 10,470 | | 1,440,500 | |
| Average Annual Wage | \$49,163 | | \$71,284 | |
| Total Private Sector | | | | |
| Establishments | 82,297 | 25.8% | 8,575,730 | 10.2% |
| Employment | 978,277 | 12.2% | 113,463,842 | 3.1% |
| Average Annual Wage | \$34,727 | | \$42,272 | |

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

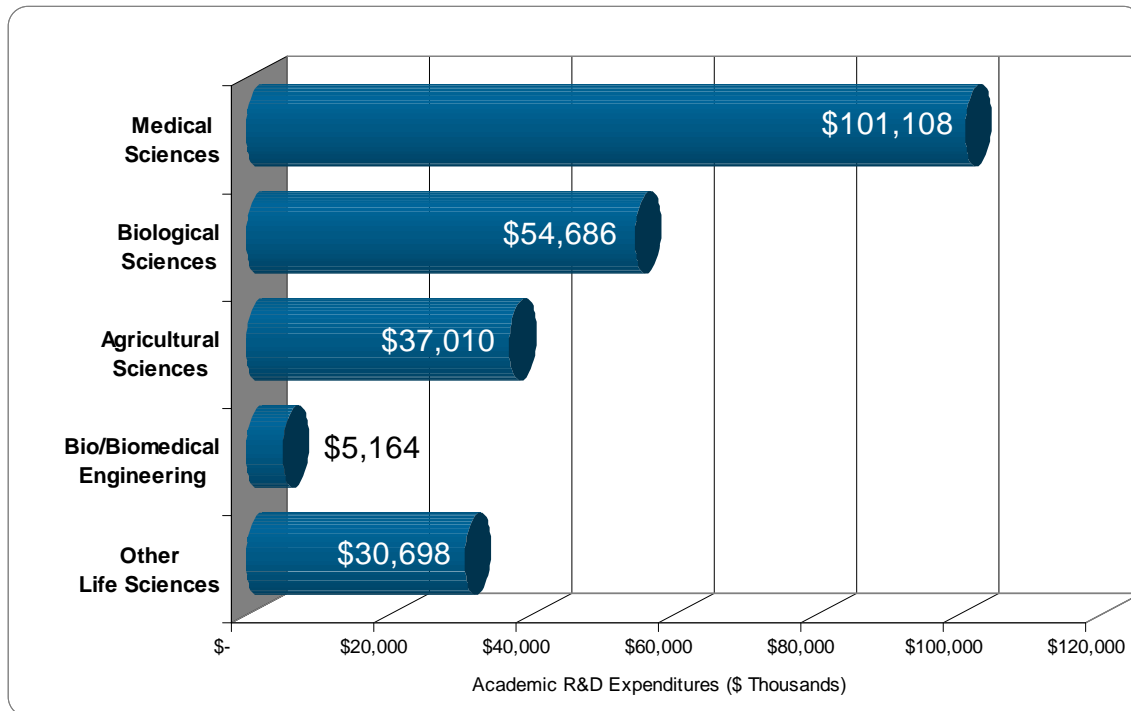
Additional Bioscience Performance Metrics

Summary of State Performance in Selected Bioscience-related Metrics

| | Utah | United States | Rank |
|---|-----------|---------------|------|
| Academic R&D Expenditures, FY 2006 | | | |
| Total (\$ thousands) | \$412,811 | \$47,760,402 | 31 |
| Bioscience R&D (\$ thousands) | \$228,666 | \$29,307,628 | 31 |
| Bioscience Share of Total R&D | 55.4% | 61.4% | |
| Bioscience R&D Per Capita | \$88.65 | \$98.10 | |
| Change in Bioscience R&D FY 2002–2006 | 22.7% | 36.9% | |
| NIH Funding, FY 2007 | | | |
| Total (\$ thousands) | \$132,537 | \$21,066,389 | 31 |
| Per Capita Funding | \$50.10 | \$69.84 | |
| Change in Funding, FY 2002–2007 | -9.3% | 11.2% | |
| Higher Education Degrees in Bioscience Fields, AY 2006 | 1,725 | 143,433 | 30 |
| Employment in Bioscience-related Occupations, 2006 | 6,360 | 588,520 | 24 |
| Bioscience Venture Capital Investments, 2002-2007 (\$ millions) | \$251.6 | \$51,260.9 | 22 |
| Bioscience and Related Patents, 2002-2007 | 1,126 | 121,817 | 28 |

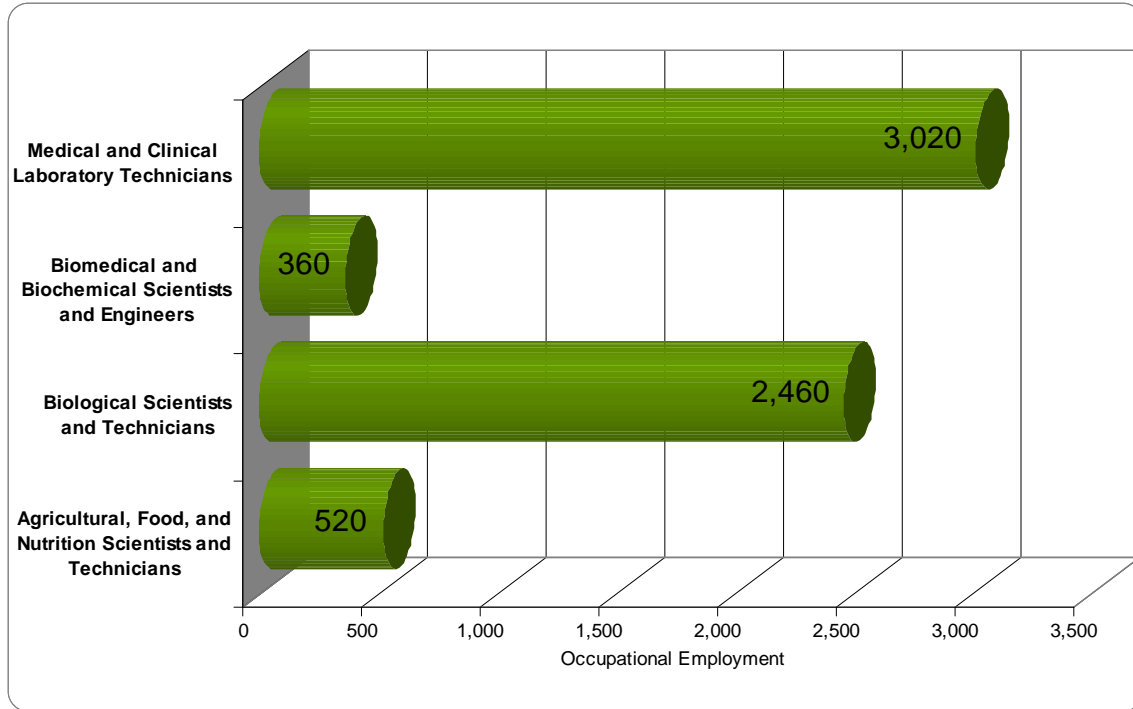
Bioscience R&D Base

Bioscience Academic R&D Expenditures in Utah, FY 2006

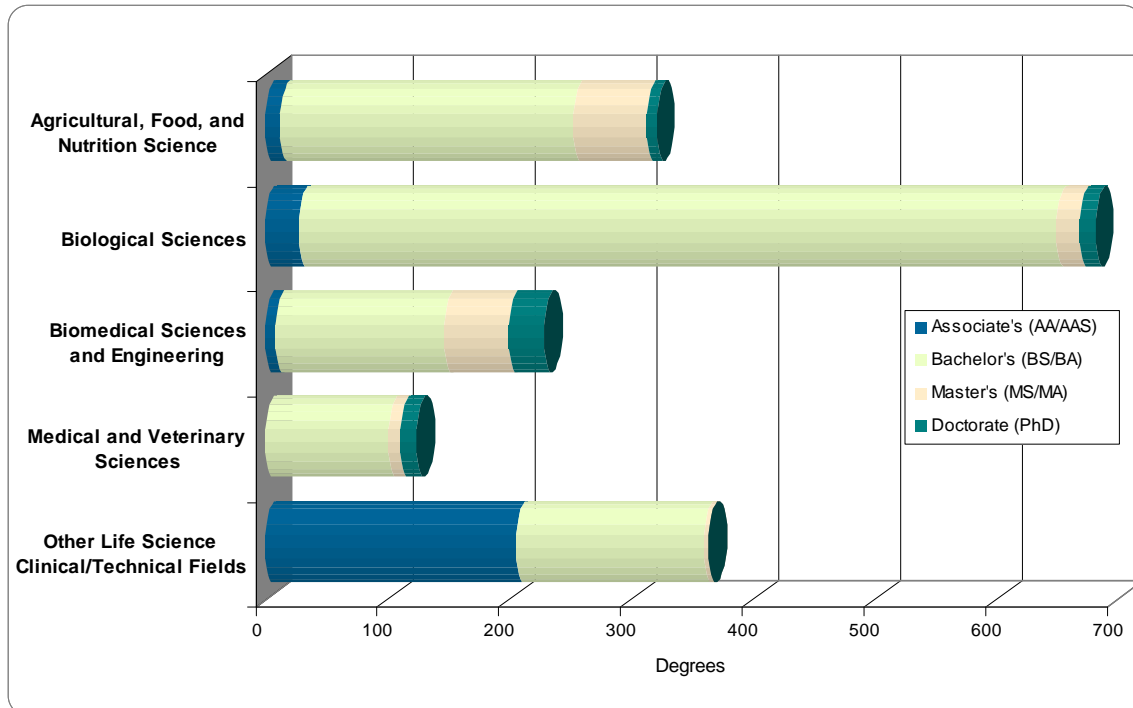


Bioscience Talent Base

Bioscience-related Occupational Employment in Utah, 2006

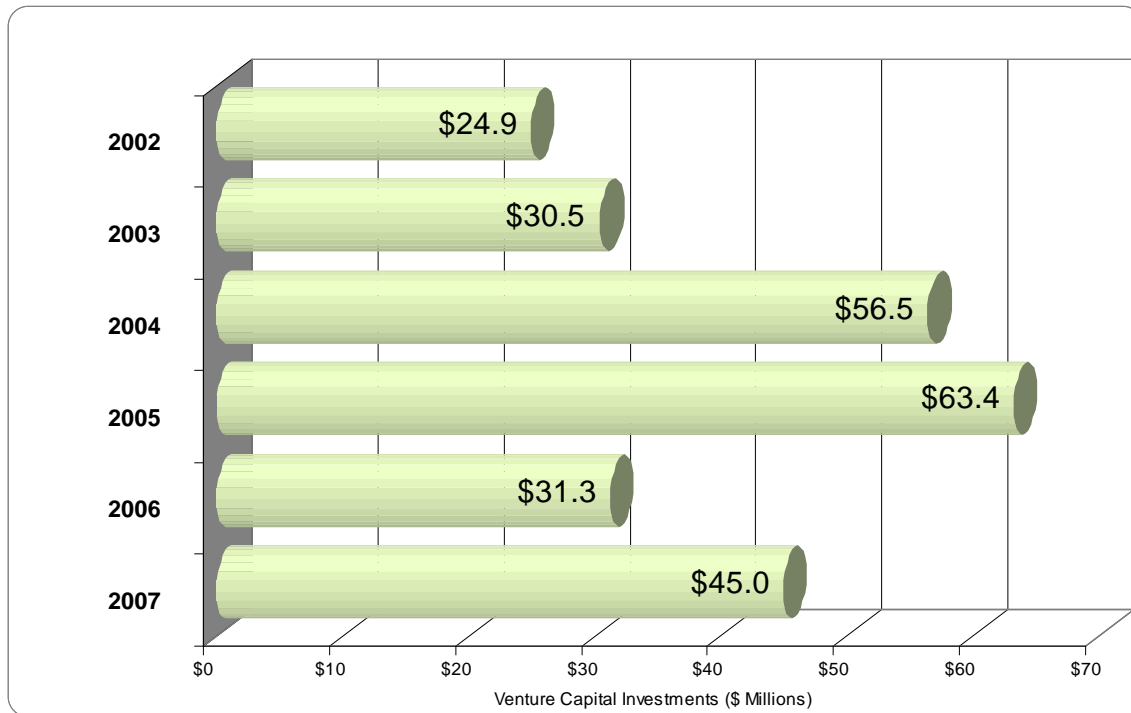


Bioscience-related Degrees in Utah, AY 2006

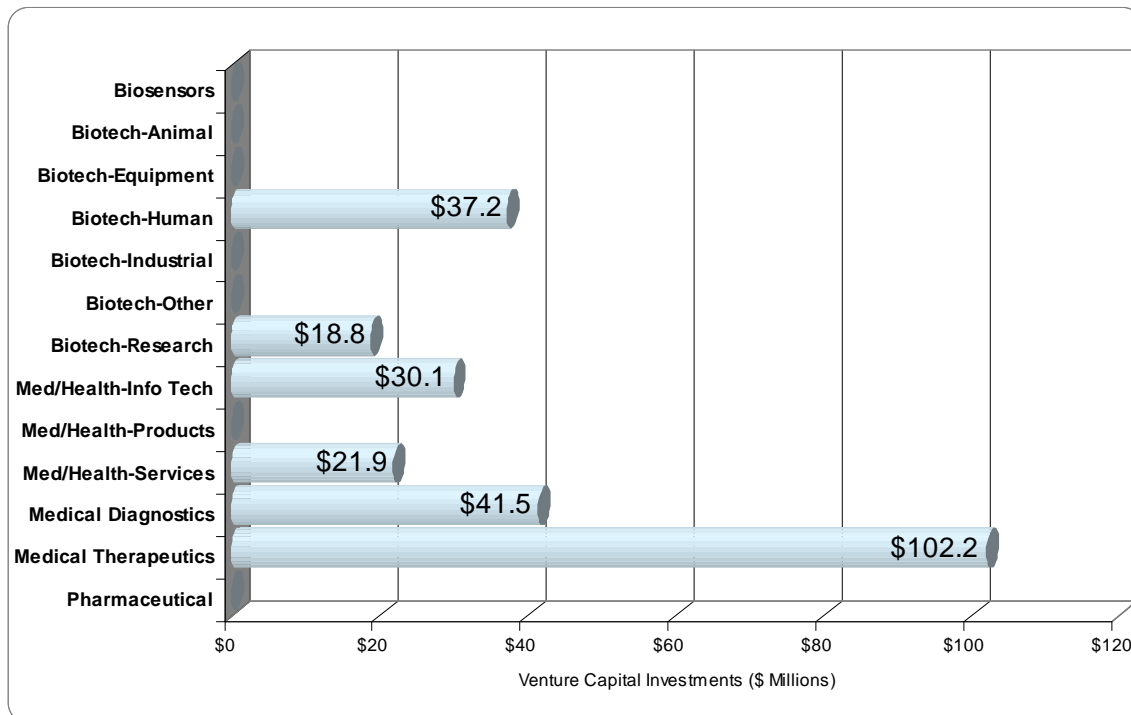


Bioscience Venture Capital

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

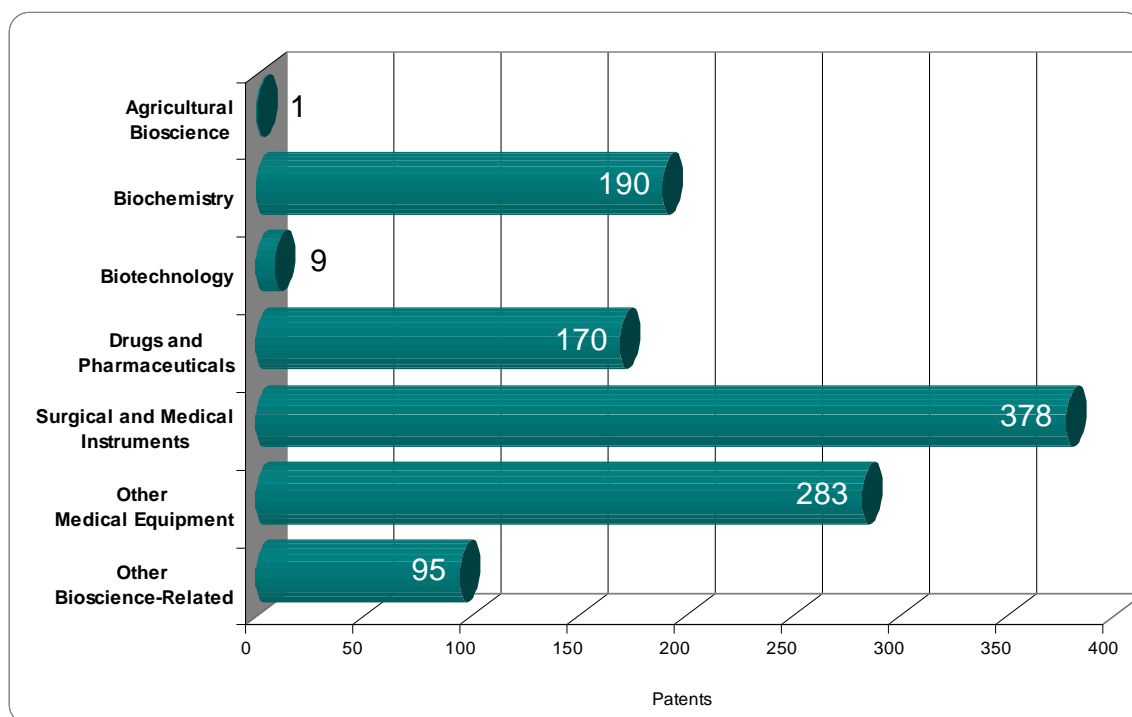


Bioscience-related Venture Capital Investments in Utah by Segment, 2002–2007



Bioscience Patents

Bioscience-related Patents by Classification Group in Utah, 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.