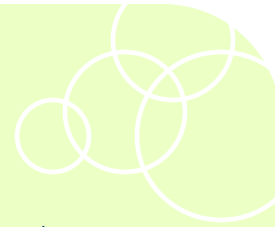


# WASHINGTON



Washington has an employment specialization in research, testing, and medical laboratories (location quotient of 1.32), a subsector that has grown rapidly over the 6 years ending in 2006. Academic bioscience research expenditures totaled \$685 million in 2006, dominated by medical sciences. In funding from the National Institutes of Health, the State ranked eighth nationally and outpaced national growth. The State also outperformed its size in bioscience venture capital invested during the past 6 years, especially in the final 2 years of the period. Most of the \$1.83 billion in investments went to the human biotechnology, medical therapeutics, and pharmaceuticals sectors. The 3,003 bioscience patents over the same period were primarily in surgical and medical instruments, biochemistry, and drugs and pharmaceuticals, all at nearly equal levels.

### Major Industry Developments and Recent Successes

- **Accelerator Corporation**, a privately held investment and development company that combines the resources of several venture-capital firms and Alexandria Real Estate, raised additional commitments, bringing its total under management to \$130 million. Of six initial investments, half have graduated and raised more than \$114 million in follow-on financing.
- **PATH**, a Seattle-based nonprofit member of the Global Health Alliance, partnered starting in 2006 with Redmond-based diagnostics developer **Micronics** to miniaturize complex laboratory tests for childhood diarrhea onto a credit-card-sized disposable device.

## Recent State Initiatives

The **Life Sciences Discovery Fund**, which will make \$350 million in grants over 10 years from tobacco-settlement proceeds, began funding advanced research in human health, including translational, scale-up, and demonstration programs, among them many public-private partnerships. The Fund began operations in 2006 with seed funding from the State and private philanthropy, made grants from philanthropic sources in 2007, and made its first grants from tobacco funds in 2008.

In 2007, the State also rolled out 11 **Innovation Partnership Zones** statewide, each connecting a source of innovation with State resources for economic-development. Life science-related zones included the **South Lake Union Life Science Zone**, the **Grays Harbor Zone** for bioenergy, and the **Spokane University District Zone** for computational biology and bioinformatics.

The Gates Foundation supported establishment of a new Department of Global Health at the University of Washington (UW), a new UW Institute for Health Metrics and Evaluation, and a School for Global Animal Health at Washington State University. In addition, a number of regional institutions formed the **Washington Global Health Alliance**.

UW's technology transfer office added a **LaunchPad** initiative aimed at catalyzing creation of new ventures from university research.

The Workforce Development Council of Seattle and King County also rolled out a new "Life Sciences Central" career Web site.

For additional information on Washington's bioscience policies and programs, please see <http://www.lsdfa.org> and <http://www.wabio.com>.

## Bioscience Industry Base, 2006

| Industry Subsector                                   | Washington |                | United States |                |
|--|------------|----------------|---------------|----------------|
|  | 2006       | 2001-06 Change | 2006          | 2001-06 Change |
| <b>Agricultural Feedstock &amp; Chemicals</b>        |            |                |               |                |
| Establishments                                       | 31         | -19.5%         | 2,183         | 3.8%           |
| Employment   | 860        | 34.8%          | 105,846       | -6.1%          |
| Location Quotient                                    | 0.39       |                | n.a.          |                |
| Direct-Effect Employment Multiplier                  | 5.20       |                | 11.22         |                |
| Total Employment Impact                              | 4,475      |                | 1,214,709     |                |
| Average Annual Wage                                  | \$56,007   |                | \$67,870      |                |
| <b>Drugs &amp; Pharmaceuticals</b>                   |            |                |               |                |
| Establishments                                       | 56         | -1.8%          | 2,654         | 1.9%           |
| Employment   | 2,293      | -1.0%          | 317,149       | 4.0%           |
| Location Quotient                                    | 0.35       |                | n.a.          |                |
| Direct-Effect Employment Multiplier                  | 5.86       |                | 9.92          |                |
| Total Employment Impact                              | 13,442     |                | 2,880,242     |                |
| Average Annual Wage                                  | \$70,146   |                | \$86,892      |                |
| <b>Medical Devices &amp; Equipment</b>               |            |                |               |                |
| Establishments                                       | 418        | 2.4%           | 15,215        | 0.3%           |
| Employment   | 7,567      | 2.0%           | 422,993       | -0.9%          |
| Location Quotient                                    | 0.87       |                | n.a.          |                |
| Direct-Effect Employment Multiplier                  | 3.09       |                | 4.85          |                |
| Total Employment Impact                              | 23,379     |                | 1,980,128     |                |
| Average Annual Wage                                  | \$62,362   |                | \$59,441      |                |
| <b>Research, Testing, &amp; Medical Laboratories</b> |            |                |               |                |
| Establishments                                       | 555        | 27.0%          | 22,857        | 32.7%          |
| Employment   | 12,327     | 28.1%          | 449,991       | 17.8%          |
| Location Quotient                                    | 1.32       |                | n.a.          |                |
| Direct-Effect Employment Multiplier                  | 2.53       |                | 3.25          |                |
| Total Employment Impact                              | 31,164     |                | 1,440,500     |                |
| Average Annual Wage                                  | \$68,749   |                | \$71,284      |                |
| <b>Total Private Sector</b>                          |            |                |               |                |
| Establishments                                       | 208,892    | -3.4%          | 8,575,730     | 10.2%          |
| Employment   | 2,346,044  | 6.1%           | 113,463,842   | 3.1%           |
| Average Annual Wage                                  | \$42,499   |                | \$42,272      |                |

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

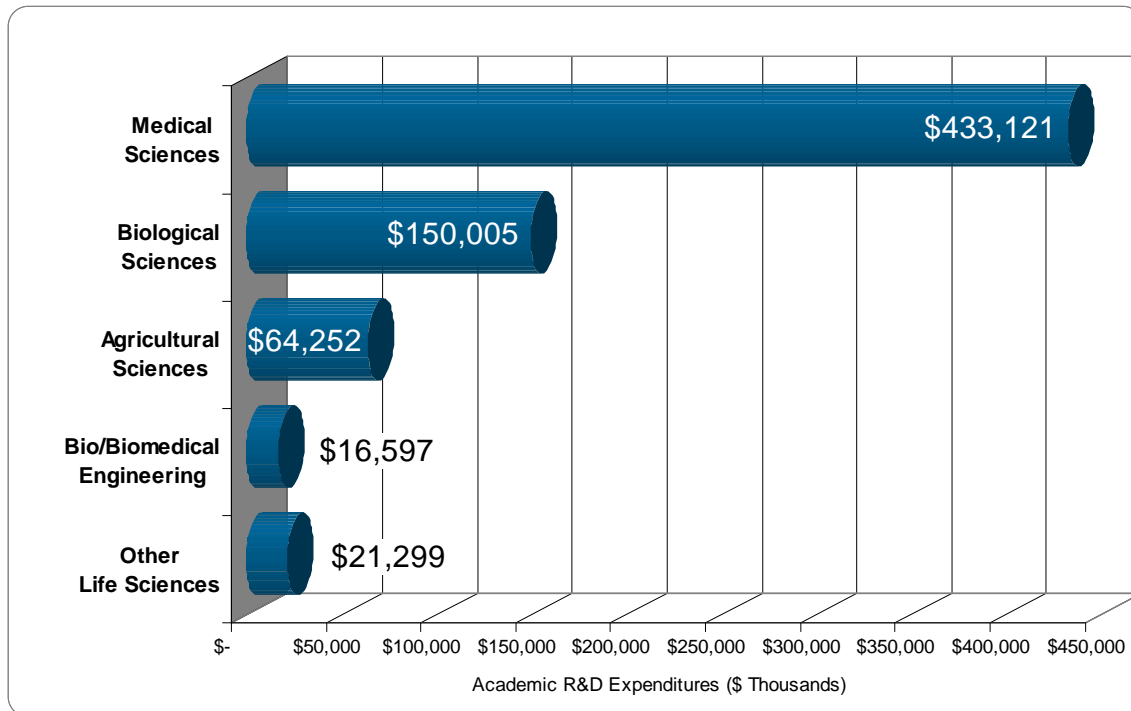
## Additional Bioscience Performance Metrics

### Summary of State Performance in Selected Bioscience-related Metrics

|   | Washington | United States | Rank |
|---|------------|---------------|------|
| Academic R&D Expenditures, FY 2006                              |            |               |      |
| Total (\$ thousands)  | \$987,623  | \$47,760,402  | 14   |
| Bioscience R&D (\$ thousands)                                   | \$685,274  | \$29,307,628  | 14   |
| Bioscience Share of Total R&D                                   | 69.4%      | 61.4%         |      |
| Bioscience R&D Per Capita                                       | \$107.50   | \$98.10       |      |
| Change in Bioscience R&D FY 2002–2006                           | 34.6%      | 36.9%         |      |
| NIH Funding, FY 2007  |            |               |      |
| Total (\$ thousands)  | \$785,736  | \$21,066,389  | 8    |
| Per Capita Funding  | \$121.47   | \$69.84       |      |
| Change in Funding, FY 2002–2007                                 | 16.7%      | 11.2%         |      |
| Higher Education Degrees in Bioscience Fields, AY 2006          | 2,527      | 143,433       | 19   |
| Employment in Bioscience-related Occupations, 2006              | 16,670     | 588,520       | 12   |
| Bioscience Venture Capital Investments, 2002-2007 (\$ millions) | \$1,833.2  | \$51,260.9    | 6    |
| Bioscience and Related Patents, 2002-2007                       | 3,003      | 121,817       | 11   |

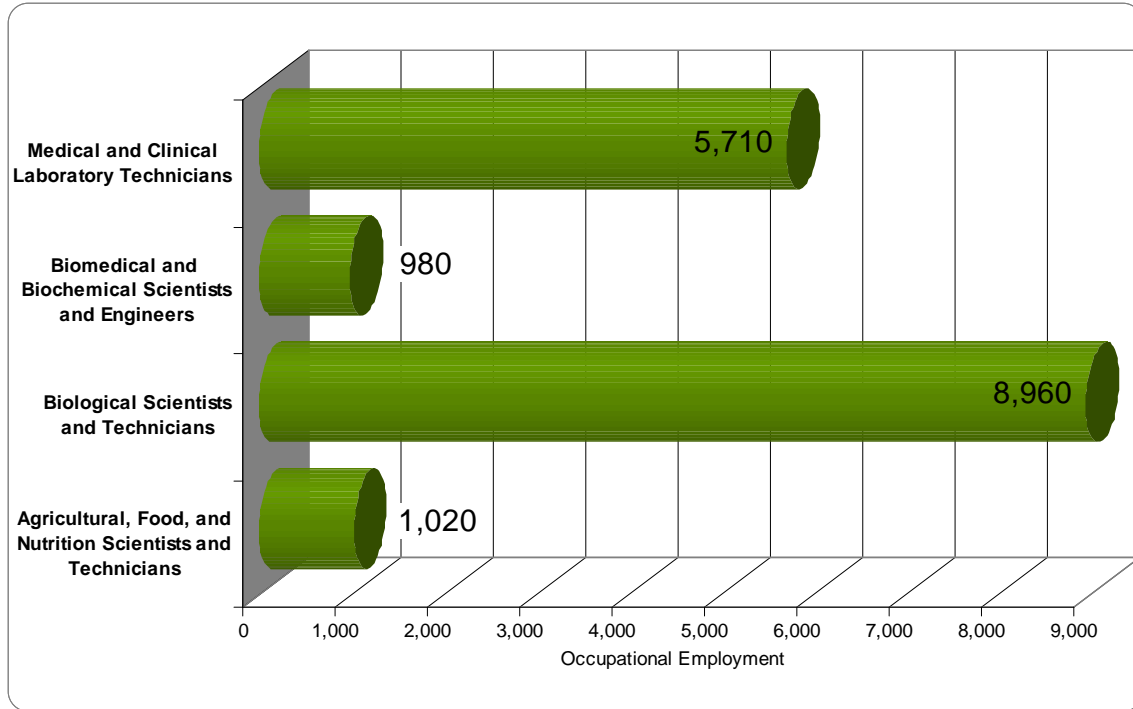
## Bioscience R&D Base

### Bioscience Academic R&D Expenditures in Washington, FY 2006

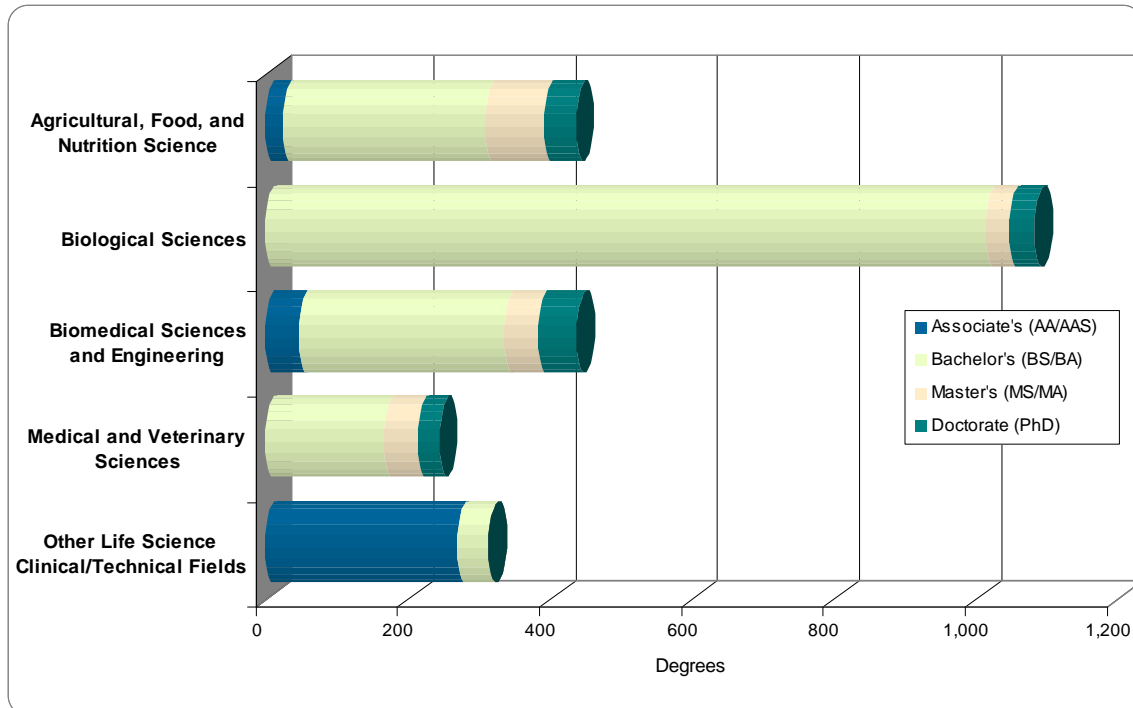


## Bioscience Talent Base

### Bioscience-related Occupational Employment in Washington, 2006

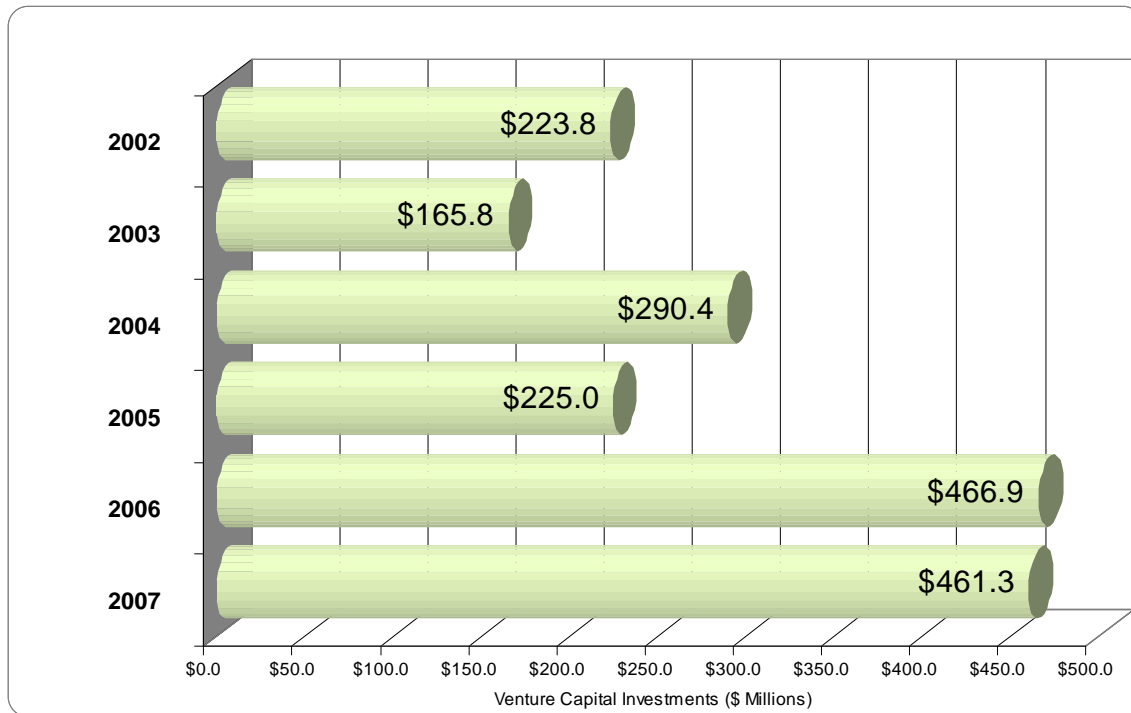


### Bioscience-related Degrees in Washington, AY 2006

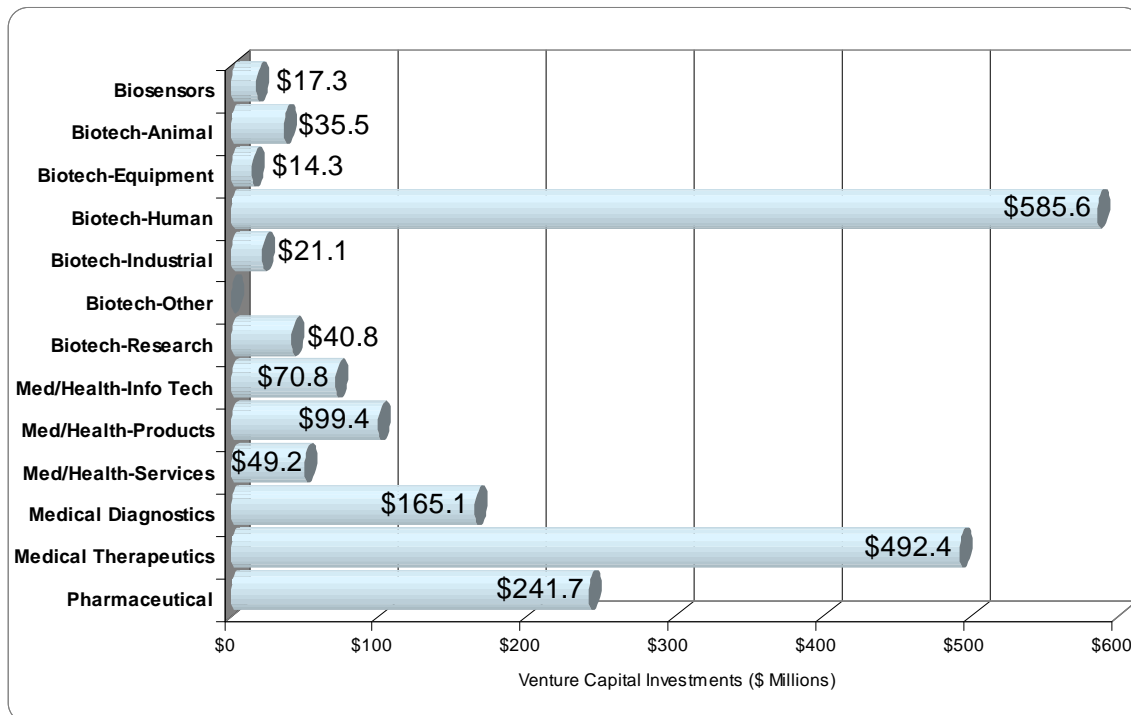


## Bioscience Venture Capital

### Bioscience-related Venture Capital Investments in Washington, 2002–2007

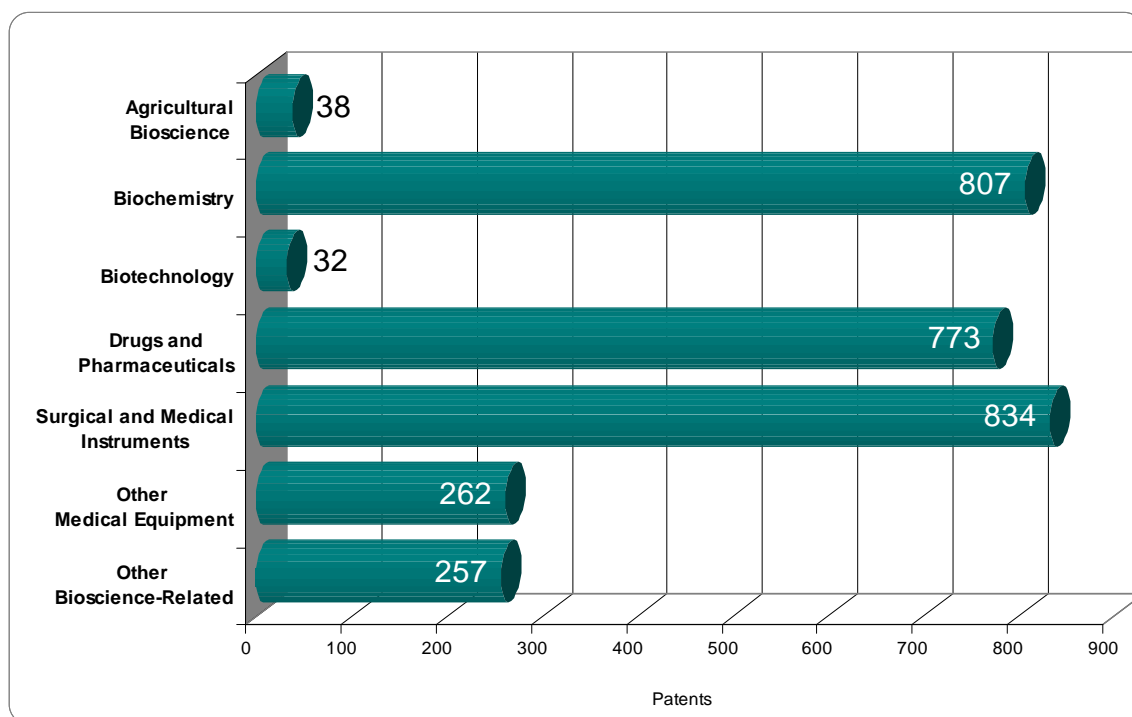


### Bioscience-related Venture Capital Investments in Washington by Segment, 2002–2007



## Bioscience Patents

### Bioscience-related Patents by Classification Group in Washington, 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.