

## Denver South Economic Development Partnership Industry Cluster Profile BIOSCIENCE

The bioscience cluster is diverse in both size and scope including companies that research, develop, and distribute products and services ranging from veterinary supplies and chemical testing kits to cutting-edge pharmaceuticals and medical devices and diagnostics. The cluster contributes to the growth and innovative capacity of other industries that transcend the bioscience cluster including healthcare and wellness, energy, and information technology in the nine-county Metro Denver and Northern Colorado region.<sup>1</sup> Advances in biology and breakthroughs in human and animal health will continue to foster innovation and offer the Denver South region<sup>2</sup> a leading role in forming collaborative bioscience partnerships and supporting bioscience infrastructure.

The bioscience cluster is divided into two subclusters, each of which specializes in distinct aspects of the biosciences: (1) medical devices and diagnostics and (2) pharmaceuticals and biotechnology. With approximately 1,630 bioscience workers in nearly 60 companies, the bioscience cluster offers numerous opportunities in both academic and clinical discovery and contributes to the region's overall economic productivity.

The Denver South region's aggregation of scientific and entrepreneurial talent, bioscience-focused professional services, and investment capital supports thriving private bioscience companies. Some key bioscience company announcements and new project developments included:

- Centennial-based AlloSource is opening a new two-story building addition to their campus and renovating more than half of the company's existing facilities. The new building will include laboratory space, testing and research facilities, clean rooms, freezer storage and supply chain support, and equipment rooms. The renovation work will include freezer storage, receiving, material management, and cleaning and sterilization space. Both projects are slated for completion in September 2012.
- In an effort to expand its portfolio of products, Illinois-based Baxter International Inc. acquired Douglas County-based Baxa Corp. Baxter manufactures recombinant and plasma-based proteins to treat bleeding disorders, develops plasma-based therapies to treat immune deficiencies, and provides products for regenerative medicine.
- Greenwood Village-based ValveXchange successfully performed three human surgeries using its Vitality™ heart valve system. The system inserts heart valves through veins without invasive surgery. The company will begin clinical trials in Europe in early 2012 with regulatory approval anticipated in late 2012 or 2013.
- Biopharmaceutical company Cell Point is developing a more effective cancer screening technology. The company's proprietary imaging agent – EC-G – makes cancer cells detectable with a less expensive single-photon emission computer tomography camera, rather than the current technology that relies on positron emission tomography cameras. In March, the Food and Drug Administration approved the company's Phase 3 clinical studies of EC-G which could be commercialized by 2013.

<sup>1</sup> The nine-county Metro Denver and Northern Colorado region consists of Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, Jefferson, Larimer, and Weld Counties.

<sup>2</sup> The Denver South region consists of zip codes 80111, 80112, 80124, 80126, 80129, 80130, 80134, and 80237.

- The U.S. Patent and Trademark Office issued Greenwood Village-based Omni Bio Pharmaceutical, Inc. the Diabetes Patent. The Patent will allow Omni Bio to treat diabetes and other inflammatory diseases by administering an effective amount of Alpha-1 antitrypsin (AAT) or a derivative of AAT. AAT is a Food and Drug Administration-approved drug prescribed for chronic lung disease in AAT-deficient patients.
- Greenwood Village-based Ampio Pharmaceuticals, Inc. secured \$12.7 million to facilitate and further the completion and analysis of data for ongoing and future clinical trials. The company develops innovative proprietary drugs for metabolic disease, eye and kidney disease, and CNS disease.

## BIOSCIENCE ECONOMIC PROFILE MEDICAL DEVICES AND DIAGNOSTICS

The medical devices and diagnostics subcluster includes companies that engineer, research, design, and manufacture medical equipment used in the healthcare industry. The medical devices and diagnostics subcluster consists of eight, six-digit North American Industry Classification System (NAICS) codes.

	<b>Denver South</b>	<b>Nine-County Region</b>	<b>U.S.</b>
Direct Employment, 2011	1,490	9,480	438,120
Number of Direct Companies, 2011	40	330	17,830
One-Year Direct Employment Growth, 2010-2011	3.7%	1.0%	1.1%
Five-Year Direct Employment Growth, 2006-2011	86.6%	7.5%	4.3%
Avg. Annual Direct Employment Growth, 2006-2011	13.3%	1.5%	0.8%
Direct Employment Concentration	0.7%	0.5%	0.3%

*Sources: Dun & Bradstreet, Inc. Marketplace database, July-Sept. 2006-2010; Market Analysis Profile, 2011; Development Research Partners.*

### Medical Devices and Diagnostics Employment

- The medical devices and diagnostics subcluster directly employed 1,490 workers in the Denver South region in 2011.
- Medical devices and diagnostics companies accounted for 0.7 percent of the Denver South region's total employment base, compared with 0.5 percent and 0.3 percent employment concentrations in the nine-county region and nationwide, respectively.
- Employment growth in the Denver South region's medical devices and diagnostics subcluster averaged 13.3 percent per year over the last five years.

### Medical Devices and Diagnostics Wages

The 2010 average annual salary for medical devices and diagnostics subcluster workers in the nine-county region was \$66,950, compared with \$72,450 nationwide. Given this average salary, the nine-county region's medical devices and diagnostics payroll totaled \$628 million in 2010.

### **Denver-Aurora-Broomfield MSA Occupational Salaries, 2010 Annual Average**

Natural Sciences Managers	\$122,450
Biochemists and Biophysicists	\$89,510
Chemists	\$70,460
Biomedical Engineers	\$65,970
Medical and Clinical Laboratory Technologists	\$57,180
Medical and Clinical Laboratory Technicians	\$43,140

*Note: Mean annual salary data is for the 10-county Denver-Aurora-Broomfield Metropolitan Statistical Area (MSA) consisting of Adams, Arapahoe, Broomfield, Clear Creek, Denver, Douglas, Elbert, Gilpin, Jefferson, and Park Counties.*

*Source: U.S. Bureau of Labor Statistics, Metropolitan Area Occupational Employment and Wage Estimates, May 2010, www.bls.*

### **Medical Devices and Diagnostics Companies**

- Approximately 40 medical devices and diagnostics companies operated in the Denver South region in 2011.
- Roughly 45 percent of the Denver South region's medical devices and diagnostics companies employed fewer than 10 workers, while 5.3 percent employed 250 or more.
- Nearly 66 percent of the region's medical devices and diagnostics companies manufactured surgical instruments and appliances, orthopedics, and prosthetics.

### **Major Medical Devices and Diagnostics Companies**

- Baxa Corporation  
[www.baxa.com](http://www.baxa.com)
- Cochlear Americas  
[www.cochlearamericas.com](http://www.cochlearamericas.com)
- ConMed Corporation  
[www.conmed.com](http://www.conmed.com)
- GE Healthcare  
[www.gehealthcare.com](http://www.gehealthcare.com)
- Medtronic Surgical Technologies  
[www.medtronic.com](http://www.medtronic.com)
- Sandhill Scientific  
[www.sandhillsci.com](http://www.sandhillsci.com)
- SteriTec Products Inc.  
[www.steritecproducts.com](http://www.steritecproducts.com)
- Zynex Medical, Inc.  
[www.zynexmed.com](http://www.zynexmed.com)

## PHARMACEUTICALS AND BIOTECHNOLOGY

Pharmaceutical companies manufacture, research, and develop pharmaceutical drugs. Biotechnology companies utilize cellular and molecular biology and medicinal chemistry to develop and commercialize therapeutic medicines. The pharmaceuticals and biotechnology subcluster consists of four, six-digit North American Industry Classification System (NAICS) codes.

	<b>Denver South</b>	<b>Nine-County Region</b>	<b>U.S.</b>
Direct Employment, 2011	130	4,630	434,500
Number of Direct Companies, 2011	20	270	16,800
One-Year Direct Employment Growth, 2010-2011	8.9%	-1.2%	-2.2%
Five-Year Direct Employment Growth, 2006-2011	45.7%	-9.9%	-5.9%
Avg. Annual Direct Employment Growth, 2006-2011	7.8%	-2.1%	-1.2%
Direct Employment Concentration	0.1%	0.3%	0.3%

*Sources: Dun & Bradstreet, Inc. Marketplace database, July-Sept. 2006-2010; Market Analysis Profile, 2011; Development Research Partners.*

### Pharmaceuticals and Biotechnology Employment

- In 2011, the pharmaceuticals and biotechnology subcluster directly employed 130 workers in the Denver South region.
- More than 84 percent of the Denver South region's pharmaceuticals and biotechnology employees worked in the pharmaceutical preparations industry.
- The majority of the Denver South region's pharmaceuticals and biotechnology employees worked in Arapahoe County (93 percent).

### Pharmaceuticals and Biotechnology Wages

The 2010 average annual salary for pharmaceuticals and biotechnology employees in the nine-county region was \$94,770, compared with \$105,360 nationwide. Given this average salary, nine-county pharmaceuticals and biotechnology payroll exceeded \$444 million in 2010. (Please see the "Medical Devices and Diagnostics Wages" section of this report for relevant occupational wage information.)

### Pharmaceuticals and Biotechnology Companies

- Nearly 20 pharmaceuticals and biotechnology companies operated in the Denver South region in 2011.
- Seventy-five percent of the Denver South region's pharmaceuticals and biotechnology companies were involved in pharmaceutical preparations (50 percent) and biological research (25 percent).
- Approximately 69 percent of the Denver South region's pharmaceuticals and biotechnology companies were located in Arapahoe County.

### **Major Pharmaceuticals and Biotechnology Companies**

- Ampio Pharmaceuticals, Inc.  
<http://ampiopharma.com>

- Omni Bio Pharmaceutical  
[www.omnibiopharma.com](http://www.omnibiopharma.com)

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July 2012