



## OKLAHOMA POLICIES AND PROGRAMS

### HIGHLIGHTS

- *Oklahoma's biopharmaceutical sector supported nearly 21,000 jobs and contributed \$3.4 billion to the economy in 2006, including direct, indirect and induced impacts*
- *Since 1987, the Oklahoma Center for the Advancement of Science and Technology has invested \$138.6 million to support the state's technology industries, including the biosciences, that has attracted \$2.4 billion in private investment and federal funding*
- *Since 2006, Oklahoma has been working to spur investment in technology development and commercialization of innovative technology in a number of areas, including in the biosciences*

### Oklahoma's Biopharmaceutical Industry

Oklahoma is home to a biopharmaceutical industry with a modest presence.<sup>1</sup> In 2006, the biopharmaceutical industry supported 2,149 jobs with average wages of \$53,000<sup>2</sup>. The high value-adding activities of the biopharmaceutical sector have broader impacts, however, as the industry supported nearly 21,000 jobs and contributed \$3.4 billion to the state's economy, including direct, indirect and induced impacts. The state's biomedical research institutions support an active base of clinical trials, with 1,148 underway in 2008.

Biopharmaceutical Sector Performance Measures	OK	US
Direct Employment, 2006	2,149	686,442
Direct Employment Growth (CAGR), 1996-2006	2.1%	3.1%
Average Annual Wages (Direct Employment), 2006	\$53,232	\$88,929
Total Supported Employment (incl. Direct), 2006	20,758	3,233,920
Total Economic Output, 2006 (\$ billions)	\$3.4	\$294.6
Direct Output per Direct Employee, 2006	\$278,039	\$128,925
Active Clinical Trials, 2008	1,148	21,795

Source: Archstone Consulting, *The Biopharmaceutical Sector's Impact on the U.S. Economy*, prepared for PhRMA, 2009.

CAGR = Compound Annual Growth Rate

### Oklahoma's Approach to Growing the Biopharmaceutical Industry

Oklahoma has long been committed to making investments and undertaking actions to leverage its universities and medical institutions to grow its bioscience industry sector. Oklahoma has invested in bioscience research and research facilities and provided support to bioscience entrepreneurs and start-up companies, primarily through programs of the Oklahoma Center for the Advancement of Science and Technology (OCAST), a state agency responsible for promoting the growth of the state's technology sectors.

In 2004, Oklahoma initiated Economic Development Generating Excellence, known as EDGE, a series of initiatives designed to significantly improve Oklahoma's economy and quality of life. One of the goals of EDGE is to make Oklahoma the "Research Capital of the Plains." To accomplish this, a \$1 billion endowment fund was proposed. The Fund, which is described below, was created by the legislature in 2006.

"Diversifying the state's economy has always been a goal behind fostering growth in the bioscience sector. But as research in health- and manufacturing-related areas continues to build, it's not just state coffers that will profit. So will everyday Oklahomans whose quality of life will benefit from the ingenuity of scientists who have made Oklahoma home, and the wisdom of policymakers loyal to the vision that sometimes it's best to not just invest for today but also for the many tomorrows to come."

*The Oklahoman Editorial*  
05/29/2009

<http://newsok.com/home/archives>

### Major State Initiatives to Attract and Grow the Biopharmaceutical Industry

#### *Oklahoma Center for the Advancement of Science and Technology (OCAST)*

OCAST provides seed funding to support researchers and collaborative partnerships between companies and research institutions. The Center also helps researchers and entrepreneurs to take their ideas from concept to

commercialization. Specific OCAST programs that are pertinent to the biopharmaceutical sector include:

- **Oklahoma Health Research Program**, which awards seed funds to universities and colleges, nonprofit research institutions and private firms for research projects related to human health. Awards can be up to \$45,000 per year for three years, and up to \$100,000 for researchers who are new to Oklahoma.
- **Oklahoma Applied Research Support Program**, which funds universities, foundations and businesses for projects designed to accelerate the development of technology, including in the biosciences, deemed to have significant commercial potential. The funding of up to \$300,000 must be matched on a one-to-one basis.
- **Technology Business Finance Program (TBFP)**, which provides pre-seed funding to start-up and emerging Oklahoma-based technology companies. The program, which requires a one-to-one match from the company, has been used to support start-up bioscience companies.
- **Oklahoma Seed Capital Fund**, which makes equity investments in technology-based companies, usually ranging of \$250,000 to \$750,000.
- **Oklahoma Technology Commercialization Center**, which works with companies, researchers, inventors and entrepreneurs to turn innovations into business ventures. The center is operated by Innovation to Enterprise (i2E), a nonprofit organization, under contract to OCAST. i2E also manages the TBFP and the Seed Fund.

Since 1987, OCAST has invested \$138.6 million that has attracted \$2.4 billion in private investment and federal funding.<sup>3</sup> OCAST reports that it helps get “new research and development into the ‘pipeline,’ and over time, many of them become profitable businesses that contribute to Oklahoma’s economy.”<sup>4</sup>

#### ***Economic Development Generating Excellence (EDGE) Fund***

In 2006, the legislature appropriated an initial \$150 million for the EDGE Fund and created an EDGE Policy Board composed of individuals representing industry, academia, foundations and public policy organizations. The Board is responsible for strategically investing the income from the endowment to support the development and commercialization of innovative technology in the following areas: aerospace, agriculture, biotechnology, energy, information technology/telecommunications, nanotechnology, sensors, and weather. Awards are made through a competitive annual award process.

An estimated 1.75 million Americans over age 50 have developed loss of vision or blindness due to age-related macular degeneration. And of the more than 200,000 Oklahomans living with diabetes, 90 percent will develop an eye disease. Unfortunately, for 95 percent of individuals suffering from these debilitating retinal diseases, there is no cure.

With the support of OCAST and EDGE, an Oklahoma City-based company is developing innovative treatments for weakening and blinding eye diseases. The firm has leveraged the funding provided by OCAST to attract grants from the National Institutes of Health. With more than \$6 million in research grants, the company also has annual revenue of \$500,000 to \$600,000 through contracts with national pharmaceutical companies. The company has expanded from two to 19 employees in only two years and anticipates hiring up to three high-level scientists in 2009.

Success Stories  
[www.ok.gov/ocast](http://www.ok.gov/ocast)

In its first year, the Board awarded \$12.5 million to five projects, two of which went to biopharmaceutical companies. Two companies received \$1.2 million to develop a glycol-manufacturing facility that will be used to produce therapeutics for evaluation, sale and licensing and a third company was awarded \$2.9 million to develop a drug to treat macular degeneration and other eye diseases.<sup>5</sup> In 2009, the Board awarded \$7.3 million for five projects, including \$1.8 million awarded to a biopharmaceutical company that is developing a treatment for Crohn’s disease.

<sup>1</sup> The biopharmaceutical sector is defined as including pharmaceutical and medicine manufacturing and scientific research and development services. The bioscience sector is broader and includes medical devices and agricultural feedstocks and chemicals in addition to biopharmaceuticals. Some states use the term life sciences or biomedical sciences, which often include hospitals and health care institutions as well.

<sup>2</sup> Archstone Consulting, *The Biopharmaceutical Sector’s Impact on the U.S. Economy*, prepared for PhRMA, 2009.

<sup>3</sup> Oklahoma Center for the Advancement of Science and Technology, [www.ok.gov/ocast](http://www.ok.gov/ocast), accessed 04/17/2010.

<sup>4</sup> Oklahoma Center for the Advancement of Science and Technology, *2010 OCAST Impact Report*, [http://www.ok.gov/ocast/Public\\_Information/Reports\\_&\\_Brochures/index.html](http://www.ok.gov/ocast/Public_Information/Reports_&_Brochures/index.html), accessed 04/17/2010.

<sup>5</sup> Economic Development Generating Excellence (EDGE), [http://www.ok.gov/edge/ABOUT/Event\\_News/EDGE\\_Endowment\\_Fund\\_to\\_Stimulate\\_Economic\\_Growth.html](http://www.ok.gov/edge/ABOUT/Event_News/EDGE_Endowment_Fund_to_Stimulate_Economic_Growth.html), accessed 04/12/2010.