

# BIOTECHNOLOGY & LIFE SCIENCES

Biotechnology and life sciences is one of the six industry clusters identified by Gov. Rick Perry in 2004 as part of his long-term, strategic job creation plan. Each cluster was selected because of its powerful potential for future economic growth.

Texas has a dynamic biotechnology marketplace with an estimated annual economic impact of \$75 billion. A significant number of top global biotechnology companies have Texas locations, underscoring the state's vitality in this industry. In 2009, one out of every 19 U.S. biotechnology employees worked in Texas while one out of every 15 U.S. biotechnology establishments was located in Texas.

## BIOMEDICINE & PHARMACEUTICALS

Biomedicine and pharmaceuticals are the most traditional segments of the biotechnology industry. Texas' commitment to the growth of this sector is evidenced through the more than \$130 million that has been invested in biomedicine and pharmaceutical-related projects through the Texas Emerging Technology Fund (TETF).

The Texas Medical Center in Houston (TMC) is a significant source of innovation and growth for the industry. As the world's largest medical center with over 71,500 students and 93,500 employees housed on over 1,000 acres, the TMC annually conducts \$1.2 billion in research. It houses 49 member institutions, including 21 academic institutions and 13 hospitals.

Medical research is an innovative and thriving sector of the biomedicine and pharmaceuticals industry in Texas. Four research areas that have garnered significant attention and funding are: biodefense and pandemic preparedness, personalized medicine, regenerative medicine, and vaccines. Just a few of the ground-breaking research areas currently being undertaken by Texas institutes of higher education are: utilizing stem-cells to combat biothreats such as viral and bacterial pathogens, developing pharmacogenomics to use gene-based tests to match patients with optimal drugs and dosages, implementing stem-cell stimulation to regenerate tissues and using stem cells to repair damaged tissue, and creating personalized cancer vaccines.

## MEDICAL DEVICES

Medical devices is one of Texas' largest biotechnology sectors by employment, and has grown substantially over the last five years. The sector includes establishments primarily engaged in manufacturing medical supplies, such as surgical, dental, orthopedic, ophthalmologic, and laboratory instruments and apparatuses. Examples of products being developed and produced in Texas include surgical sutures, syringes, eye-care products, cardiac catheters, urinalysis and blood transport vials, and medication delivery systems.

Texas is home to more than 1,250 medical equipment and electrical instrument establishments, which employ more than 35,000 skilled workers, or approximately one third of Texas' biotech employment. The segment's average annual salary is over \$70,800.

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