THBI
TEXAS HEALTHCARE & BIOSCIENCE INSTITUTE

Texas Life Sciences: Driving Innovation, Patient Care and Economic Growth

A Strategic Vision for Advancing the Texas Life Science Ecosystem

2026

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INNOVATEBIO
National Biotechnology Education Center

LYDA HILL PHILANTHROPIES

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THBI
TEXAS HEALTHCARE & BIOSCIENCE INSTITUTE

On behalf of the Board of Directors of the Texas Healthcare and Bioscience Institute (THBI), we present ***Texas Life Sciences: Driving Innovation, Patient Care and Economic Growth***. ***A Strategic Vision for Advancing the Texas Life Science Ecosystem.***

This report serves as both a comprehensive overview of the current state of the industry and a strategic roadmap designed to strengthen connections among life science partners across Texas. Many of these industry partners were actively involved in the development of this report by participating in focus groups, THBI events, and interviews over the fifteen months taken to develop it.

While it isn't possible to list every contributor, we do want to thank our partners at Biotechnology Innovation Organization (BIO), their partners at TEConomy Partners, and the Life Sciences Workforce Collaborative (LSWC). Additional support was provided by Dr. Linnea Fletcher with InnovATEBIO and Harry Benson and his team at CAI. Lyda Hill Philanthropies, Nexpoint, and Texas State University also contributed directly to the development of the report. There are countless other industry partners who also contributed to this report, even indirectly, by taking the time and effort to further statewide collaboration and keeping THBI informed on key advances and achievements across the state.

THBI's impact would not be possible without the partnership of our bio-regional partners and the economic development organizations who are in the field every day supporting our biotech innovators. We look forward to continuing to support this industry through collaboration, partnership, and advocacy, not only with our members, but with all those working to drive innovation, patient care and economic development in Texas.

Victoria Ford
President and CEO
Texas Healthcare and Bioscience Institute

David Margrave
Board Chairman
Texas Healthcare and Bioscience Institute

EXECUTIVE SUMMARY

Texas has leveraged its size, robust research infrastructure, and pro-business climate to emerge as a national leader in life sciences and biotechnology. The state's bioscience sector now stands among the top in the nation for employment, research investment, and industry output – a testament to its dynamic, diverse, and rapidly growing ecosystem.

21.6%

Texas' bioscience industry is large and rapidly growing, employing 129,245 individuals in 2023 across 9,212 establishments, with employment growth of 21.6% since 2019.

3rd

Bioscience-related academic R&D expenditures in Texas totaled $4.6 billion in 2022, ranking third in the county.

34%

NIH funding to Texas institutions reached $1.8 billion in 2023, growing 34% since 2019.

5th

Texas bioscience companies raised $8.7 billion in venture capital investment from 2019 through 2023, ranking fifth in the country.

9th

State inventors are affiliated with nearly 8,000 bioscience-related patents from 2019 through 2023, ranking ninth in the country.

As the statewide organization representing the life science and biotech industry, the Texas Healthcare and Bioscience Institute (THBI) presents the very latest in the development of the state's bioscience ecosystem. This report profiles the growth of the life science industry across the four major regional hubs, delves into the four pillars of the Texas economy supporting this ecosystem, and identifies key strengths and remaining challenges with strategic suggestions to guide the ongoing growth and development of this industry.

Dynamic Life Sciences Markets

CENTRAL TEXAS
A Cutting-Edge Biotech Cluster

HOUSTON
A Global Powerhouse

NORTH TEXAS
A Future-Forward Ecosystem

SAN ANTONIO
A Focused Innovation Center

Strategic Recommendations:

RECOMMENDATION: Create the Texas Technology Innovation Program to provide state matching grants to Texas-based companies receiving federal SBIR or STTR awards.

RECOMMENDATION: Texas biotech companies, research institutions, and economic development entities should promote themselves and maximize the presence of Texas on an international stage through the BioTexas Pavillion.

RECOMMENDATION: Support strengthening U.S. biosecurity and expand biotech-related onshoring and manufacturing capacity.

RECOMMENDATION: Support implementation of NSECB-related recommendations across the full biotechnology ecosystem.

RECOMMENDATION: Life science/biotech researchers, start-ups, and growing companies should find the right partnerships and participate in the bioscience ecosystem across the state.

RECOMMENDATION: Expand Texas bio-industrial resources as an integral part of the larger bioscience ecosystem.

RECOMMENDATION: Stabilize federal research funding, and support ongoing research throughout the pipeline in Texas research institutions.

RECOMMENDATION: Support the full implementation of the Dementia Prevention and Research Institute of Texas.

RECOMMENDATION: Support NSCEB-recommended initiatives to enhance government partnerships with science and technology, enable autonomous scientific discovery, and unlock science across the country.

RECOMMENDATION: Develop and distribute engaging materials that showcase and explain career opportunities within the life sciences and biotechnology sectors, with a particular focus on reaching middle and high school students.

RECOMMENDATION: Enhance and expand the Texas Regional Industrial Biomanufacturing Education Certification (TRIBEC).

RECOMMENDATION: Simplify the transfer of educational credentials between institutions and reduce duplication of effort to simplify the attainment of skills and degrees and create an ongoing forum to share best practices that facilitate these goals.

RECOMMENDATION: Enhance and expand engagement between industry and academic institutions.

RECOMMENDATION: Enhance and expand engagement between industry and local workforce development boards and regional economic development partners.

RECOMMENDATION: Support and participate in the Roadmap for Workforce Development for the NSF TIP.

RECOMMENDATION: Support and continue to partner with the Texas Higher Education Coordinating Board (THECB) to support Building a Talent Strong Texas.

RECOMMENDATION: Strengthen Texas' leadership in biotechnology and life sciences by fostering deeper collaboration between government, academia, and industry.

RECOMMENDATION: Support initiatives that modernize research infrastructure, expand access to advanced technologies such as AI and automation, and streamline pathways from discovery to commercialization.

RECOMMENDATION: Encourage policies that promote secure data-sharing, workforce development, and equitable access to research opportunities across all regions of Texas to ensure sustainable innovation and global competitiveness.

INTRODUCTION

THE TEXAS BIOTECH HUB

Biotech Hubs are geographic regions with a high concentration of biotechnology companies, universities, research institutions, and investment, creating a collaborative ecosystem that accelerates scientific breakthroughs, talent development, and commercialization of new therapies and products. These hubs provide access to specialized labs, funding, skilled workforce, and infrastructure, fostering innovation and making it easier for startups to grow by sharing resources and ideas.

Historically, biotech hubs are highly concentrated within a city, but today, Texas is leading the way to bigger thinking, building a bioscience economy that pushes beyond the hub model and encroaching on existing biotech hubs with the kind of creativity, innovation, and drive that only Texans can.

Top Biotech States: Research and Investment

State	Academic R&D Expenditures 2022	Total NIH Funding FY2023	Bioscience-Related Patents 2019-2023	Total VC Investments 2019-2023
California	$7.8 million	$5.4 million	49,250	$104.5 billion
New York	$5.5 million	$3.6 million	11,929	$25 billion
Texas	$4.6 million (3rd)	$1.8 million (7th)	7,950 (9th)	$8.7 billion (5th)
Pennsylvania	$3.6 million	$2.2 million	10,783	$7 billion
North Carolina	$2.9 million	$2.3 million	5,733	$4.4 billion
Massachusetts	$2.3 million	$3.5 million	21,386	$58.7 billion
Maryland	$2.2 million	$2.8 million	5,877	$4.4 billion
Ohio	$2.0 million	$1.0 million	8,197	$3.5 billion

The Houston-Pasadena-Woodlands ranked 3rd in the country in employment in Agricultural Feedstock and Industrial Biosciences. [1]

Today, Texas has leveraged its size, research infrastructure, and business-friendly environment to become a major player in life sciences and biotech. The state's bioscience sector now ranks among the top in the United States in employment, research funding, and industry output, reflecting a diversified and rapidly expanding ecosystem.

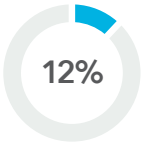
In terms of employment, Texas consistently ranks within the top five states with a bioscience workforce that exceeds 129,000 employees, spanning all five industry related subsectors. When compared to other long-established biotech clusters, Texas' bioscience employment growth rate has been faster in recent years, reflecting both expansion of existing firms and the attraction of new companies seeking lower costs and access to talent.

Top Biotech States: Employment and Growth

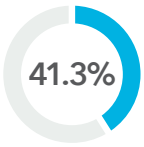
State	Bioscience Employees 2023	Bioscience Establishments 2023	Growth Rate 2019-2023
California	347,847	15,080	12.2%
New York	117,032	5,967	10.2%
Texas	129,245	9,212	21.6%
Pennsylvania	97,374	3,710	6.9%
North Carolina	103,107	6,687	23.1%
Massachusetts	147,887	5,474	26.2%
Maryland	52,633	3,316	16.4%
Ohio	63,765	4,860	12.8%

1 TEConomy / BIO, The U.S. Bioscience Economy: Driving Economic Growth and Opportunity in States and Regions, 2024.

Subsector Growth Since 2019[2]

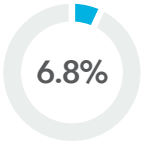


Agricultural feedstock and industrial biosciences have seen a 12% growth in employers since 2019, with 168 establishments, 4,748 employees, and an average annual wage of $119,431.

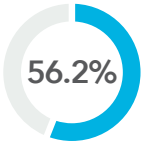


The medical devices and equipment subsector has seen a 41.3% growth in employers since 2019, with 801 establishments, 15,040 jobs, and an average annual wage of $94,416.

Research, testing, and medical laboratories have seen a 96.8% growth in employers since 2019; there are now 3,913 establishments, 37,702 jobs, and an average annual wage of $113,689.



Bioscience-related distribution has seen a 6.8% growth in employers since 2019 and now has 3,913 establishments, 57,770 jobs, and an average annual wage of $134,377.



The pharmaceuticals subsector has seen 56.2% growth in employers since 2019; there are now 415 establishments, 13,985 jobs, and an average annual wage of $123,068.

2 TEConomy / BIO, The U.S. Bioscience Economy: Driving Economic Growth and Opportunity in States and Regions, Texas Fact Sheet, 2024.

According to a 2025 analysis, EY Biotech Beyond Borders Report 2025: Texas Edition, "'Texas remains a compelling microcosm within the global biotech sector." Despite increasing capital constraints, regulatory uncertainty, and macroeconomic headwinds of the last few years, private funding for Texas-based biotech firms (which fell from $1.5 billion in 2023 to $761 million in 2024) is showing signs of recovery. Public biotech revenue in Texas rose 27% in 2024 with over $600 million raised, which is expected to continue to rise as the newly created Dementia Prevention and Research Institute of Texas (DPRIT) becomes operational and begins making grants. These recent trends highlight the resilience and adaptation in the Texas marketplace. Texas' strengths lie in its cost-efficient operations, AI-driven innovation, and public-private partnerships that bridge academia and industry. As the sector navigates global uncertainty, Texas stands out for its ability to "do more with less," positioning itself as a leading U.S. biotech hub poised for sustainable growth and scientific impact.

The steady increases in private investment in Texas are benefiting each of the major market regions, including Austin, Dallas, Houston, and San Antonio. These metropolitan areas have cultivated innovative ecosystems that combine academic research, startup incubators, and corporate partnerships. The rise of health technology and digital health startups in Texas further diversifies the state's bioscience economy, blending traditional life sciences with emerging technology sectors.

The state's strong industrial base and logistical infrastructure have made it a hub for pharmaceutical production, medical device manufacturing, and bioprocessing. Compared to states with higher operating costs, Texas offers a competitive advantage through lower taxes, affordable real estate, and access to major transportation networks. This has encouraged both domestic and international firms to establish or expand operations in the state.

Research and development activity is another area where Texas demonstrates competitive strength. The state ranked third in funding from the National Institutes of Health from 2019 to 2023. Texas research institutions have shown significant gains, particularly in translational medicine, genomics, and cancer research. The establishment of the Cancer Prevention and Research Institute of Texas (CPRIT), one of the largest state-funded cancer research initiatives in the country, has further elevated Texas' profile. CPRIT's grants have attracted top-tier scientists and startups and positioned Texas as a national leader in oncology research and commercialization.

INVESTMENT IN TEXAS CONTINUES

Lilly

$6.5 billion investment
Houston, Texas

AstraZeneca

Part of $46 billion company investment
Coppell, Texas

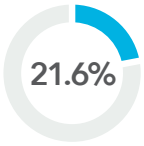
NOVARTIS

Part of $23 billion company investment
Denton, Texas

With its combination of cutting-edge research, supportive policies, and entrepreneurial energy, Texas provides an ideal environment for biotech innovation and commercialization. The state's investment in research infrastructure, workforce development, and innovation funding will continue to accelerate its ascent, making Texas one of the most dynamic bioscience centers in the United States in the coming decade.

Dallas-Fort Worth-Arlington ranked 4th in the country in bioscience-related distribution with 19,460 jobs.[3]

Big Texas Facts[4]



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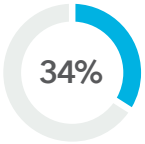

NIH funding to Texas institutions reached $1.8 billion in 2023, growing 34% since 2019.

Texas bioscience companies raised $8.7 billion in venture capital investment from 2019 through 2023, ranking fifth in the country.

State inventors are affiliated with nearly 8,000 bioscience-related patents from 2019 through 2023, ranking ninth in the country.

The strong growth of the Texas bioscience economy is driven by its nationally recognized research institutions, business-friendly environment, and expanding life sciences infrastructure. The state is home to world-renowned medical and research centers such as the Texas Medical Center in Houston – the largest medical complex in the world – and 16 Tier 1 research institutions[5], the most in the nation. Texas is driving innovation and fostering collaboration between industry partners, the government, and local communities, fueling economic growth and creating new jobs and new investments across the state.

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3 TEConomy / BIO, The U.S. Bioscience Economy: Driving Economic Growth and Opportunity in States and Regions, Texas Fact Sheet, 2024.

4 TEConomy / BIO, The U.S. Bioscience Economy: Driving Economic Growth and Opportunity in States and Regions, Texas Fact Sheet, 2024.

5 Texas Higher Education Coordinating Board. (2025, February 21). Texas leads the nation in top-tier research universities, https://www.highered.texas.gov/texas-leads-the-nation-in-top-tier-research-universities/

Employment and Hiring Trends

The Texas life sciences workforce remains a vital and diverse component of the state's innovation economy. Between 2021-2024, the state's life sciences employers posted 155,045 unique job openings, reflecting steady demand despite national slowdowns in hiring[6]. That is an average of 38,000-44,000 postings per year from 2021 to 2024. Leading employers such as Abbott, Labcorp, Johnson & Johnson, McKesson, Quest Diagnostics, and Thermo Fisher Scientific continue to drive hiring across research and development, diagnostics, and manufacturing.

Technical and production roles, particularly medical technicians, quality assurance specialists, and data scientists, remain in high demand, with most positions requiring a bachelor's degree and one-to-three years of experience. However, companies report greater ease in filling key roles as hiring stabilizes.

Texas' Top Five Technical & Production-Related Job Titles[7]

MEDICAL TECHNICIANS:
10,654 postings

QUALITY ASSURANCE & CONTROL:
3,001 postings

LABORATORY TECHNICIANS:
2,446 postings

DATA SCIENTISTS:
1,844 postings

CLINICAL RESEARCH ASSOCIATES:
1,314 postings

6 Life Sciences Workforce Collaborative (LSWC), 2025 Life Sciences Workforce Trends Report, Life Sciences Industry Job Postings Data for Texas, 2025.

7 Life Sciences Workforce Collaborative (LSWC), 2025 Life Sciences Workforce Trends Report, Life Sciences Industry Job Postings Data for Texas, 2025.

Texas' favorable economic climate – with low taxes, affordable real estate, and robust state incentives – attract biotech startups and global companies alike. Cities such as Dallas, Houston, Austin, and San Antonio have developed specialized biotech clusters. The state's growing venture capital presence and access to a skilled workforce further strengthen its position in the life sciences sector. With the combination of cutting-edge research, supportive policies, and entrepreneurial energy, Texas provides an ideal environment for biotech innovation and commercialization, making it one of the most dynamic and promising biotech hubs in the nation.

As the statewide organization representing the life science and biotech industry in Texas, the Texas Healthcare and Bioscience Institute (THBI) presents the very latest in the development of the state's bioscience ecosystem. This report will profile the growth of the life science industry across each of the four major regional hubs, provide a deep dive into the four pillars of the Texas economy that support this ecosystem, and identify key strengths and remaining challenges with strategic suggestions to guide the ongoing growth and development of this industry.

DYNAMIC LIFE SCIENCES MARKETS IN TEXAS

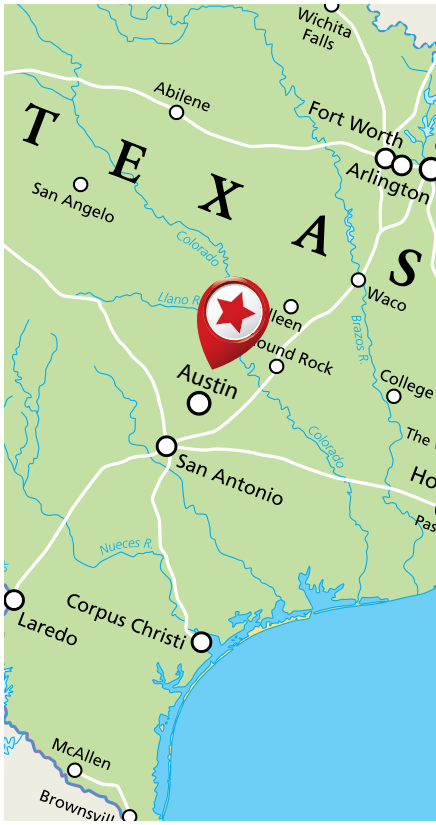
When people hear the phrase "everything is bigger in Texas," they often think of the literal size of the state and the wide-open skies, or the larger-than-life persona associated with the state, or high hair, ten-gallon hats, and, in some contexts, grand, sometimes excessive, aspirations. The Texas economy is one of the largest in the world and the Texas life science and biotech industry matches those mythological proportions. Texas boasts four mature biotech hubs with sophisticated research institutions and the infrastructure to support biotech companies at all stages of development. In addition, Texas has emerging marketplaces all across the state, making significant investments to support local biotech investment.

Central Texas – A Cutting-Edge Biotech Cluster

Central Texas has rapidly emerged as one of the nation's most dynamic and fast-growing life sciences regions, anchored by Austin's innovation ecosystem and extending northward into Round Rock and the Greater Brazos Valley. The region's growth is fueled by a convergence of academic excellence, translational research capacity, and a robust pipeline of venture-backed companies advancing biotechnology, medical devices, diagnostics, and digital health solutions.

Austin's life sciences sector has transitioned from an emerging cluster to a nationally recognized innovation hub. As of 2025, the region supports over 300 life sciences employers and 21,000+ jobs, spanning biotech, diagnostics, med-tech, and research. The city's innovation strength is reflected in its ~350 life sciences patents awarded over the past three years.[8]

Capital formation has accelerated dramatically in the region, with ~40 venture capital deals in 2025 totaling approximately $800 million invested in Austin-headquartered life sciences companies. This late-stage momentum underscores growing national investor confidence in the market. The planned $2.5 billion University of Texas at Austin-MD Anderson Cancer Center, set to begin construction in 2026, will further anchor the region as a leader in oncology, translational research, and digitally enabled healthcare.



8 Opportunity Austin. Life Sciences. https://opportunityaustin.com/economic-development/key-industries/life-sciences/

Austin's competitive edge lies in the convergence of life sciences, artificial intelligence, and advanced computing, powered by the University of Texas at Austin's research enterprise and the region's deep technology workforce. The Office of Innovation and Entrepreneurship (OIE) at UT Austin's Dell Medical School plays a pivotal role in advancing early-stage health innovations. Its flagship program, Texas Health Catalyst, has supported over 80 projects, helped form 20 companies, and generated $101 million in follow-on funding. Through programs like NEXXUS and the Health Associates Program, OIE also cultivates an industry-ready workforce by embedding students in real-world commercialization and product development experiences.

Austin's life sciences infrastructure continues to expand, with a growing network of wet labs, incubators, and life science campuses such as the University of Texas Innovation Labs, Highpoint 2222, Austin Community College's Bioscience Incubator, and the Round Rock Life Sciences District. These assets create a seamless "graduation pathway" for startups to scale without leaving the region.

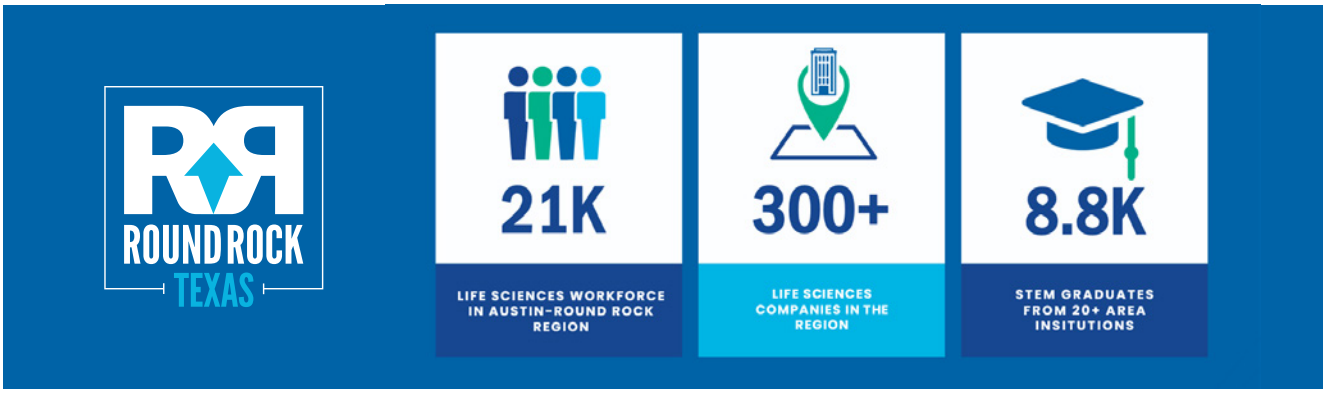
IN THE NEWS

OPPORTUNITY AUSTIN

A Major Addition to Austin's Life Science Ecosystem with the Expansion of BillionToOne

"This move showcases Austin's unique technology foundation that continues to attract world-class companies."

Full article here ↗



Round Rock, Texas

Round Rock, located just north of Austin, offers life sciences-ready sites and facilities, proximity to major research institutions, and a business-friendly environment that supports both established companies and startups. The Round Rock Life Sciences District is designed to attract biotech manufacturing, R&D, and clinical operations, complementing Austin's research-driven innovation base.

THE AUSTIN REGION:
WHERE LIFE SCIENCES SCALE FASTER

Life sciences, an emerging industry in the Austin region, is catalyzed by major company investments across the ecosystem. A recently commissioned McKinsey study outlines the region's competitive edge, identifying AI-enabled life sciences, MedTech, and digital health as key strengths shaping Austin's rise as a life sciences hub.

300+
companies
in life sciences

24,000+
employees
in life sciences

1,200+
startups
in health tech

Innovation Output & IP Strength

~**350** life science patents awarded in the last three years, representing ~25% of all Texas life sciences patents. This level of IP concentration highlights Austin's outsized role in research commercialization.

MD Anderson Cancer Center

A $2.5B medical center and cancer research hospital is planned, with construction expected to begin in 2026. The project anchors Austin as a serious player in oncology, translational research, and digitally enabled healthcare.

Capital Formation & Investor Confidence

~40 venture capital deals in 2025 totaling **~$800M invested** in Austin-HQ life sciences companies, proving strong late-stage momentum and increasing national investor confidence in the market.

Infrastructure Built for Growth

A growing network of wet labs, incubators, and life sciences–ready campuses, including:

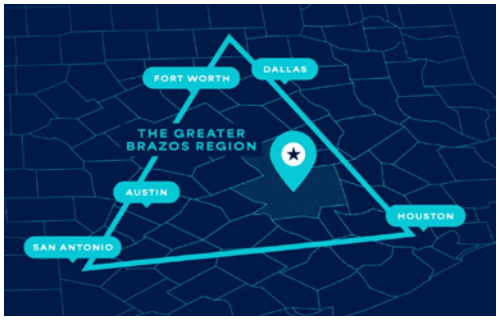
- UT Innovation Labs (wet lab space supporting commercialization)
- Highpoint 2222 (repurposed life sciences campus)
- ACC Bioscience Incubator
- Round Rock life sciences district

These assets create a clear graduation pathway from startup to scale-up without leaving the region.

Market Differentiator

Convergence of life sciences, AI, and advanced computing, powered by UT Austin and the region's tech workforce. Austin's advantage lies not just in bioscience, but in how rapidly research translates into scalable, data-driven health solutions.

OPPORTUNITY AUSTIN
REGIONAL PARTNERSHIP

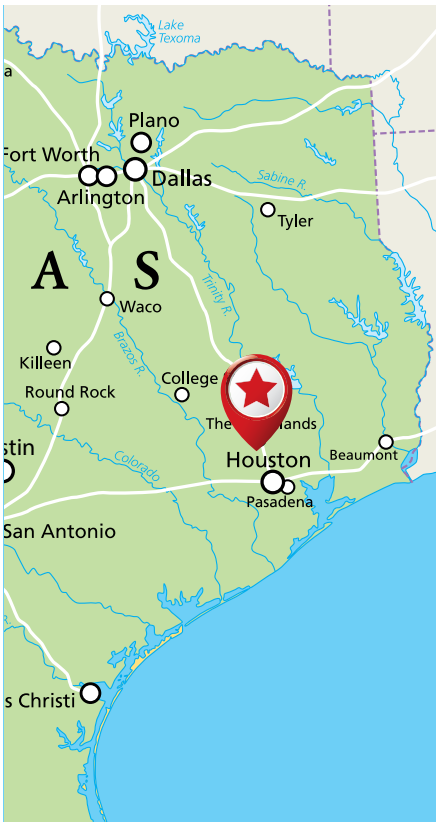


The Greater Brazos Valley

The region's collaborative ecosystem extends beyond Austin and Round Rock, encompassing Bryan-College Station and other Central Texas communities that contribute to a robust pipeline of biotech research through Texas A&M University and the National Center For Therapeutics Manufacturing (NCTM,) biomanufacturing driven by FUJIFILM Diosynth Biotechnologies, and robust workforce development programs. Together, these assets form a cohesive, innovation-rich corridor where life sciences companies can scale faster, attract capital, and deliver transformative health impact.

Houston – A Global Powerhouse

The Greater Houston area is home to six medical schools, two Tier 1 research universities, and the nation's leading cancer care center. Together, these institutions drive discoveries in oncology, neurology, cardiovascular disease, organ transplantation, and other critical fields. The region's ecosystem is driving groundbreaking advancements in medicine, biotechnology, and patient care.



The Texas Medical Center (TMC), the world's largest medical complex, is the centerpiece of this ecosystem, with more than 60 member institutions, 120,000 employees, and over 10 million patient visits annually. Its scale and diversity enable rapid clinical testing and the seamless movement of discoveries from lab bench to patient bedside, making it a global hub for medical innovation and patient-centered research.

Houston's life science ecosystem also includes a strong network of accelerators, incubators, and innovation programs that bridge the gap between research and commercialization. The TMC Innovation Factory, for instance, provides early-stage innovators with programming, mentorship, and workspace that has hosted over 450 early-stage ventures since 2015[9], and operates a $50 million venture fund to accelerate promising technologies[10]. Other assets in the region include University of Houston's

9 Texas Medical Center. (2025, June 23). *TMC Broadens Support of Houston Start-Ups with the Launch of Innovation Labs @ TMC*, https://www.tmc.edu/press-releases/tmc-broadens-support-of-houston-start-ups-with-the-launch-of-innovation-labs-tmc/

10 Texas Medical Center. (2022, March 29). *Texas Medical Center Doubles the Size of the TMC Venture Fund*, https://www.tmc.edu/press-releases/texas-medical-center-doubles-the-size-of-the-tmc-venture-fund/

Technology Bridge, the Ion District, K2 Biolabs, CUBIO Innovation Hub, and BioTex, which together create a fertile environment for startup growth and collaboration. The Rice Biotech Launch Pad, created by RBL LLC and Rice University, exemplifies Houston's commitment to scalable commercialization. It provides a dedicated structure for forming and advancing biotech companies through clinical development, offering a repeatable model for translating academic research into viable therapies.

The region has not neglected infrastructure. Major developments such as TMC Helix Park are designed to co-locate research, industry, and clinical care. Other major projects include Levit Green, Texas A&M Innovation Plaza, and Generation Park, which add millions of square feet of research and office space dedicated to life sciences and create a dense cluster of innovation activity across the region.

IN THE NEWS

STAT NEWS

How – and why – Houston is building a scalable life sciences ecosystem

Full article here ↗

Sugar Land, Texas

Sugar Land is just 20 minutes southwest of downtown Houston and the Texas Medical Center and boasts 20 biotech companies. The life sciences industry is experiencing strong growth thanks to a highly educated skilled workforce, affordable costs, and Sugar Land's pro-business attitude.

Houston's life sciences sector benefits from a deep and diverse talent pool. The region is home to more than 28,000 biotech and life sciences professionals and over 15,000 researchers, along with more than 3,000 graduates each year in biomedical, bioengineering, pharmaceutical sciences, and other related four-year or advanced degree programs.[11] The region's educational institutions are highly focused on preparing a strong biotech workforce. San Jacinto College, Lone Star College, and Houston City College all offer specialized programs in biotechnology, bioprocessing, and health sciences. These programs are designed to meet the growing demand for skilled technicians and researchers in emerging fields such as cell and gene therapy. With more than 40 colleges and universities in the Greater Houston area, the city's educational infrastructure provides a comprehensive pipeline from technical training to advanced research degrees.

11 Greater Houston Partnership. Houston Facts. https://wpb.houston.org/app/uploads/2025/09/Houston-Facts-2025-Publication.pdf

HOUSTON

Global Powerhouse in Life Science and Biotech

INNOVATION | CLINICAL EXCELLENCE | COMMERCIAL IMPACT

The greater Houston region stands as a dynamic powerhouse in life science and biotech, offering a unique blend of top academic research institutions, cutting-edge innovation, robust manufacturing capabilities, and a thriving entrepreneurial community. The ecosystem is anchored by a collaborative network of research institutions, hospitals, biotech firms, and global industry leaders, dedicated to advancing scientific discovery and human health.

KEY STRENGTHS INCLUDE

World-Class Academic Research Institutions

The greater Houston area is home to top-tier academic research institutions renowned for groundbreaking innovation – including six medical schools, two Tier 1 research universities and the nation's leading cancer care center. These institutions drive discoveries in areas such as oncology, neurology, cardiovascular disease, organ transplantation and more.

Accelerator Programs and Entrepreneurial Companies

The region boasts a strong infrastructure of accelerator and incubator programs that nurture early-stage companies and facilitate the journey from laboratory innovation to commercial success, helping transform promising ideas into viable products and companies. Here, hundreds of life science companies are developing novel therapeutics, medical devices, diagnostics and other innovations to improve human health.

The Texas Medical Center

The 60+ institutions and 120,000 employees in the world's pre-eminent medical center provide best-in-class medical care to patients from one of the most diverse cities in the United States, around the country and across the world, with more than 10 million patient visits per year. TMC's unparalleled strength in clinical care enables rapid translational research and supports thousands of clinical trials annually.

Advanced Manufacturing

Supported by home-grown success stories and recent expansions of global companies, Houston is a significant center for pharmaceutical and bio-manufacturing. The region also features leading companies in cell and gene therapy, as well as medical devices, diagnostics, and radiotherapeutics.

Skilled and Young Talent

Houston's ecosystem is fueled by a deep pool of skilled professionals, including a large and growing cohort of young, diverse talent. This workforce supports both research and commercial activities across the sector, supported by educational institutions spanning everything from skilled workforce training to producing the next generation of M.D.s and Ph.D.s.

Among the most diverse and international cities in the US, the greater Houston region is at the forefront of tackling health challenges on a global scale. Its collaborative ecosystem is advancing new therapies, diagnostics, and medical technologies that improve patient outcomes and drive economic growth.

Growing Pearland's Biotech Workforce

BizConnect supports local businesses through resources, funding opportunities, and networking connections. Through this program, Pearland Economic Development Corporation identified a critical skills gap in the city's growing biotech sector. In response, Pearland partnered with Alvin College and industry-leader Lonza to launch a two-tier Biotechnology Certificate Course, offering accelerated six- and twelve-week training tracks designed to quickly prepare new workers for entry-level roles.

Houston's life science and biotechnology ecosystem is not just growing - it is evolving strategically to ensure long-term sustainability. As Bill McKeon, CEO of the Texas Medical Center, has noted12, Houston's institutions are moving from intermittent collaboration to operational integration - co-locating research, clinical care, and industry to drive faster, more efficient innovation. This approach positions Houston not only as a national leader but as a global powerhouse in life sciences and biotechnology.

North Texas – A Future-Forward Ecosystem

The Dallas-Fort Worth (DFW) region is home to a diverse roster of life science companies, including pharmaceutical, optical, and medical device manufacturers. It ranks among the top U.S. metro areas for life sciences employment growth, with over 260,000 computer, mathematical, engineering, and technical jobs, ranking fourth nationally. The region also boasts 21 Fortune 500 and 44 Fortune 1000 company headquarters[13], many of which are directly or indirectly involved in healthcare, biotechnology, and advanced manufacturing.

The DFW metroplex has become a magnet for both established corporations and emerging startups. Cities like Irving, Las Colinas and DeSoto are leading the charge in attracting biotech and life science companies. Irving, known as the "Headquarters of Headquarters," is home to major players such as Celanese, McKesson Corporation, and Kimberly-Clark. The city offers 21.8 million square feet of office and lab space, a workforce of 16,000 life science professionals, and proximity to Pegasus Park - just 14 minutes away.

Irving-Las Colinas

Irving has one of the highest concentrations of STEM-educated workers in the country, and nearly 40% of Irving-Las Colinas residents over the age of 25 have earned a two-year college degree, and 35% have at least a bachelor's degree. With 8 colleges and 106 additional schools located within a 25-mile radius, continuing education opportunities are easily accessible in the area.

13 Dallas Regional Chamber. Life Science Converging in DFW. https://lifesciencedfw.com/

PEGASUS PARK

DFW'S LEADING BIOTECH & SOCIAL IMPACT INNOVATION HUB

TO LEARN MORE VISIT
PEGASUSPARK.COM

Collaborate in DeSoto

DeSoto is quickly positioning itself as a future hub for biotech collaboration and innovation. With state-of-the-art research facilities, a supportive regulatory environment, and access to world-class universities, DeSoto aims to attract companies eager to push the boundaries of scientific discovery.

- 7 Carnegie-designated research institutions (five R1 and two R2 institutions), and 70,000+ annual graduates, with a remarkable 76% regional graduate retention rate.
- $7.5 billion in university R&D expenditures in 2023, providing abundant funding for research and development.
- 150+ Contract Research Organizations (CRO), 40+ accelerators and incubators, 16 major healthcare systems (10 headquarters), and 4 VA health systems
- 20 Contract Drug Manufacturing Organizations (CDMO), 20 regulatory consulting firms, and 60 major advanced manufacturing facilities

A robust support network for life science companies enables startups and established firms alike to move efficiently from concept to commercialization.

North Texas is home to seven Carnegie-designated research universities – five R1 and two R2 institutions – producing over 70,000 graduates annually with a 76% regional retention rate. Universities such as UT Southwestern Medical Center, The University of Texas at Dallas, and The University of Texas at Arlington are recognized for their groundbreaking research and innovation. UT Southwestern alone counts six Nobel laureates among its faculty and alumni, underscoring the region's scientific excellence. In 2023, North Texas universities collectively generated $7.5 billion in R&D expenditures, fueling discovery and commercialization across biotechnology, pharmaceuticals, and medical devices.

Federal investment innovation has also been a major catalyst for North Texas' life science growth with the establishment of the Advanced Research Projects Agency for Health (ARPA-H) regional hub at Pegasus Park in Dallas. ARPA-H's mission – to accelerate breakthroughs in preventative, therapeutic, and treatment technologies – aligns perfectly with the region's strengths in research and commercialization. The Dallas hub has positioned North Texas as a cornerstone of federal health innovation.

Fort Worth also has a strong life science industry that is supported by over $2 billion in recent private investment and a thriving innovation ecosystem. Anchored by the Medical Innovation District, the city fosters collaboration between its major hospitals, the region's strong medical schools, and research institutions, which together advance biomedical research, clinical training, and entrepreneurial growth. Global leaders such as Alcon and Smith+Nephew contribute to Fort Worth's robust med-tech and biomanufacturing

base, while organizations like TechFW and Cowtown Angels support startup development and investment. With the addition of Texas A&M-Fort Worth's new biobank, Fort Worth is positioned as a strategic center for life sciences.

North Texas' success in life sciences is also driven by its commitment to workforce development. The region's educational institutions are expanding STEM programs to prepare the next generation of scientists and technicians. For example, the Irving Independent School District has partnered with UT Southwestern Medical Center to create a biomedical science program that has already engaged 2,500 students, nurturing early interest in healthcare and research careers.

One additional differentiator for the region is that DFW International Airport is the home to the nation's second-largest cold chain storage hub and one of only two IATA Center of Excellence for Independent Validators (CEIV) pharma supply chain communities, ensuring efficient and reliable logistics for temperature-sensitive pharmaceuticals. Its central location allows travel anywhere in the continental U.S. within four hours, with access to more than 75 direct international destinations - an invaluable advantage for global research and distribution.

IN THE NEWS

MEDCITY NEWS

The Burgeoning Life Science Ecosystem of North Texas, Anchored by Pegasus Park

"A life science hub in North Texas offers an inspiring model for how to build a robust community that thrives on healthcare and biotech innovation."

Full article here ↗

Amarillo: An Emerging Life Sciences Marketplace with Strategic Advantages

Located in the heart of Texas' largest agricultural producing region, Amarillo sits at the intersection of food production, animal health, and biosecurity. This natural convergence creates fertile ground for innovation in biotechnology, food safety, and health research.

Anchored by the Texas Tech University Health Sciences Center – which houses Schools of Medicine, Pharmacy, and Veterinary Medicine – Amarillo offers one of the few U.S. campuses uniting these disciplines in one location. This rare proximity supports the One Health model, fostering collaboration across human, animal, and environmental health sectors.

The region boasts six colleges and universities within 50 miles to supply a steady pipeline of talent in life sciences, agriculture, and engineering, while local K-12 schools maintain graduation rates above 90%, ensuring long-term workforce sustainability.

Biotech companies also benefit from Amarillo's lower operational costs, available land, and strong public-private partnerships. Together, these assets position Amarillo as an emerging life sciences marketplace - one that blends affordability, collaboration, and innovation to attract and sustain the next generation of biotech enterprises.

LIFE science CONVERGING IN DFW

Dallas–Fort Worth (DFW) is home to a dynamic roster of life science companies, including leading pharmaceutical, optical and medical device manufacturers, and corporate headquarters. With a diverse economy, affordability and a business-friendly environment, the region is a prime destination for companies to scale.

In Good Company

ABBOTT · Alcon · AstraZeneca · Celanese · MARK CUBAN CostPlus DRUG COMPANY

McKESSON · NOVARTIS · oranomed ²¹²Pb for Targeted Alpha Therapy · smith&nephew · verily

and strong ecosystem partners

BHIANT · BIONTX · LYDA HILL PHILANTHROPIES · PEGASUS PARK

DFW is one of the most diverse economies in the country.

FORTUNE 1000 2025

21 Fortune 500 corporate headquarters

44 Fortune 1000 corporate headquarters

Y'all Street

Nasdaq · NYSE · TXSE TEXAS STOCK EXCHANGE

33%

of Texas' manufacturing output comes from DFW

260K+

computer, mathematical, engineer and engineering tech jobs—fourth-most in the U.S.

Connectivity

DFW's central location provides easy access across the country and around the world.

Travel anywhere in the continental U.S. within **four hours**

plus access to **75+** direct international destinations.

CEIV · EXCELLENCE IN LOGISTICS · IATA · PHARMA

Home to nation's **2nd-largest** cold chain storage hub and one of two IATA CEIV pharm supply chain communities

Talent

DFW is a leading hub where tech and life sciences converge, supported by strong industry and higher education partnerships.

#1

Texas Metro for Carnegie Designated R1 & R2 Research Universities

6

Nobel laureates at UT Southwestern Medical Center

72.7%

graduate retention rate for DFW institutions of higher education

70+

higher education institutions

Training our bioengineering technician workforce:

BIOWORKS FOR NORTH TEXAS

A&M | TEES National Center for Therapeutics Manufacturing

UTA Institute of Biomanufacturing and Precision Medicine for North Texas

DRC DALLAS REGIONAL CHAMBER

lifesciencedfw.com

San Antonio – A Focused Innovation Center

San Antonio is one of the most unique and highly focused life science industry sectors. The region's impressive innovation ecosystem is reinforced by the largest military health complex in the United States, including the U.S. Army Institute of Surgical Research and Brooke Army Medical Center. The city's life science ecosystem has a practical, solutions-driven culture that thrives on collaboration. This spirit of partnership has positioned San Antonio as a model for how research, innovation, and industry can align to create meaningful impact.

The University of Texas at San Antonio (UTSA) is home to three federally designated national disease research centers: an NCI-designated Cancer Center, an NIA-designated Alzheimer's Disease Research Center, and a national Tuberculosis Disease Center. UTSA complements this strength with cutting-edge programs that integrate technology and health, including the nation's first MD/AI dual-degree program and the Texas Cyber Command – a statewide hub that merges cybersecurity, data science, and biomedical innovation.

San Antonio's research infrastructure is further distinguished by the presence of one of the nation's seven NIH National Primate Research Centers – the only one with direct access to an on-campus BSL-4 laboratory. This unique combination enhances the city's leadership in infectious disease and translational research with more than 1,800 active clinical trials underway across the region, supported by diverse patient populations and a robust pre-hospital research network that connects multiple organizations and disciplines.

Founded in 1941, Texas Biomed Research Institute has gained worldwide recognition in scientific and academic communities for the quality of its basic research. Texas Biomed is the only independent nonprofit infectious disease research institute in the United States with:

- the highest-level biocontainment labs for infectious disease and biodefense research;
- a federally designated National Primate Research Center;
- more than 80 years of discoveries advancing diagnostics, vaccines and therapies; and
- an entrepreneurial culture and specialized expertise in regulated science required for FDA approval.

The results? Texas BioMed advanced the first COVID-19 vaccine, the first Ebola treatment, the first Hepatitis-C therapy, as well as many other developments and technologies – notably the high-frequency neonatal ventilator for premature infants.[14]

Beyond research, the region's cGMP pharmaceutical, medical device, and biotech contract manufacturers support production at every scale, from prototype to full commercialization, allowing companies to grow without leaving the region. San Antonio is one of only two places in the United States capable of taking a donor-derived biological material all the way through to a tested, manufactured biotech product. This end-to-end capability makes the city a magnet for biotech startups and established firms seeking efficient, integrated production solutions.

With its rare combination of nationally recognized research centers, advanced manufacturing capabilities, and a culture that welcomes collaboration, San Antonio stands out as one of the most distinctive and capable life science and biotech economies in the nation.

As the life science industry continues to evolve, Texas stands ready to lead. In the years ahead, Texas will not only continue to attract new companies and talent but also to redefine what is possible in life sciences, transforming discoveries into real-world solutions that improve lives across the globe.

14 https://www.txbiomed.org/wp-content/uploads/2024/07/About-TX-Biomed-Fact-Sheet-2024.pdf

San Antonio

Where Research Powers Innovation

- 3rd Largest Research University in TX
- Largest Military Health Complex in USA
- Only NIA Alzheimer's Research Center in TX
- National Lab with $900+M in Annual R&D
- 1 of 7 NIH Primate Centers in USA
- 1 of 2 BSL4 Labs in TX
- Over 1800 active clinical trials
- 1 of 2 orgs in USA Processing Donor to Manufactured Biotech Products

BioMedSA

www.biomedsa.org

BIGGER. BETTER. TEXAS.

In April 2025, the Texas Economic Development & Tourism Office within the Office of the Governor published a strategic plan outlining a unified vision for the state's economic future, focusing on strengthening industries, fostering innovation, developing the workforce, and investing in infrastructure. The plan recognizes that while Texas' decentralized, market-driven approach to economic development has fueled its success, continued prosperity depends on collaboration among the state agencies, local governments, businesses, and educational institutions that work in partnership to make growth happen.

This Statewide Economic Development Strategic Plan, "Bigger. Better. Texas. Blueprint to build a stronger Texas of tomorrow," was developed as a blueprint for advancing Texas' position as a global economic powerhouse. The plan was formed through extensive quantitative and qualitative research, including stakeholder interviews, regional analyses, and reviews of over 40 local and regional economic development plans. The result is a forward-looking strategy that provides the state agencies involved with supporting and growing the Texas economy with strong guidance for prioritization and implementation of state goals and objectives.

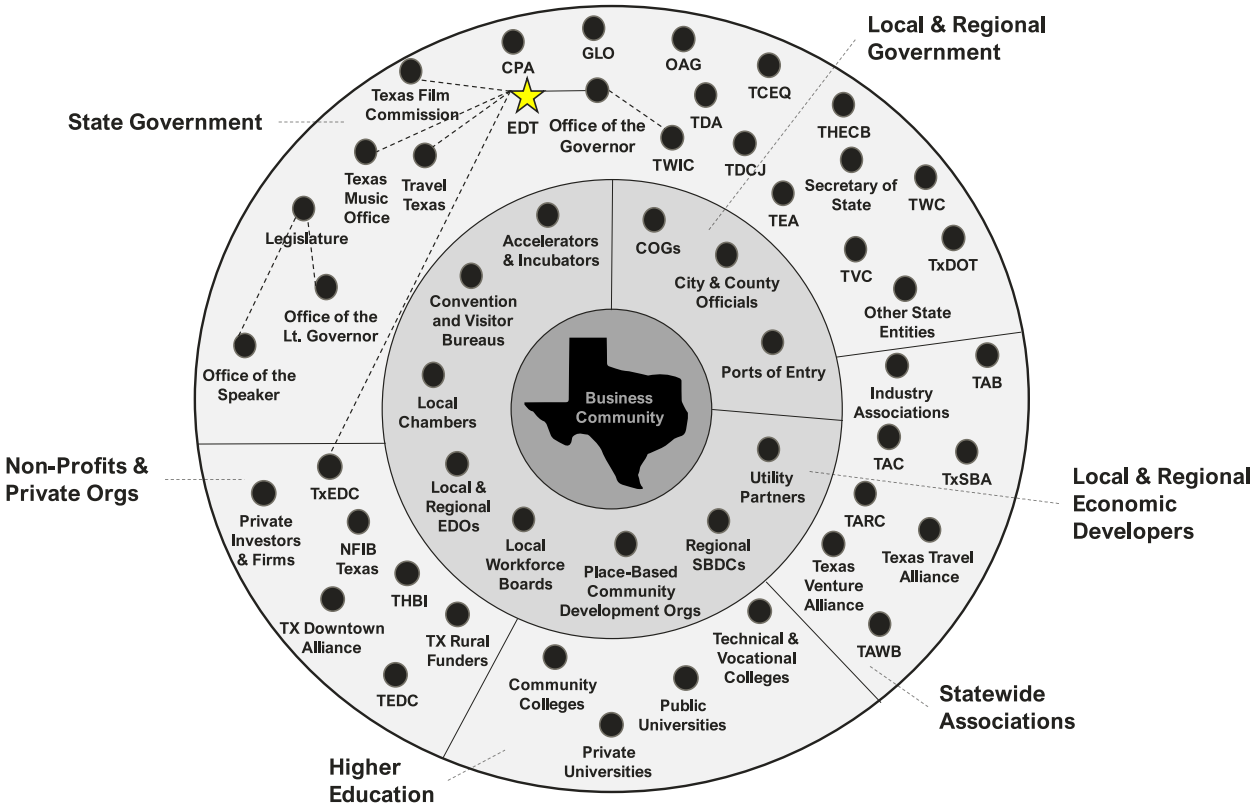
> **"Texas is a global economic powerhouse.** Our rich culture, diverse workforce, and entrepreneurial spirit make Texas the premier place to live, work, and grow a business."[15]

The economic development ecosystem includes:

- business community
- local and regional economic developers
- local and regional government
- state and regional associations
- higher education institutions
- non-profit and private organizations
- state government

15 Office of the Governor, Texas Economic Development & Tourism Office. Bigger. Better. Texas. Blueprint to build a stronger Texas of tomorrow. Statewide Economic Development Strategic Plan: 2025 – 2029, 2025.

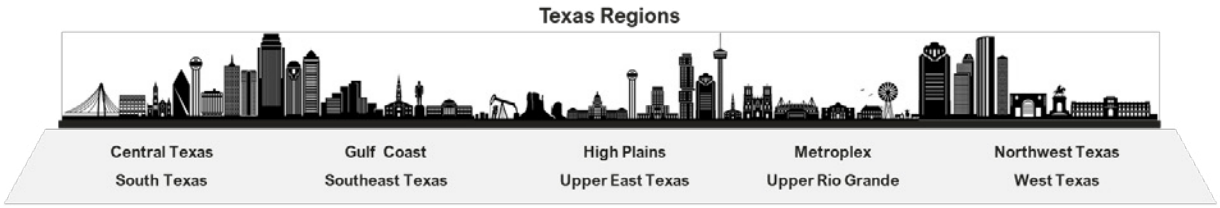
Texas Economic Development Ecosystem



Texas' economic development ecosystem consists of a large, interconnected network of public, private, and non-profit entities that collaborate to strengthen Texas' economy. This decentralized partnership allows for effective local and regional planning that builds on regional interests and then integrates that local feedback into a broader statewide system of engagement and support. Each of these ecosystem partners play an important and distinct role in driving economic growth.

At the heart of the ecosystem are Texas' businesses and workers. Supporting local business are chambers of commerce, convention and tourism boards, local workforce boards, utility partners, and local/regional economic development organizations. City and county officials and councils of government coordinate local planning and regulations to support local business. Statewide and regional associations provide industry expertise, advocacy, and resources to help members succeed. An effective education system is vital for workforce development, preparing future workers and supporting upskilling and reskilling initiatives to meet evolving industry needs. All these partners work with Texas state agencies in the legislative and executive branch to help set appropriate priorities, coordinate resources across the economy, and promote Texas as a business destination, attracting investment and supporting collaboration across the ecosystem.

The Statewide Economic Development Strategic Plan identifies ten target industry sectors as key drivers of future economic growth for Texas. These include Advanced Manufacturing, Energy Evolution, Food & Beverage Processing, Aerospace, Aviation & Defense, Biotechnology & Life Sciences, Corporate Services, Tourism & Culture, and Information Technology & Semiconductors. These sectors were selected through a year-long research and stakeholder engagement process.



Target Industry Sectors and Clusters

Advanced Manufacturing	Energy Evolution	Food & Livestock Products	Hospitality, Tourism & Culture	Information Technology
• Aerospace Vehicles, Aircraft & Defense • Automotive • Computers, Electronics & Semiconductor Manufacturing • Production Technology & Heavy Machinery	• Electric Power Generation and Transmission • Oil and Gas Extraction, Production, and Transportation • Renewables	• Food Processing • Livestock Processing	• Film, Music and Culture • Hospitality and Tourism	• Information Technology & Artificial Intelligence

Life Sciences & Biotechnology	Petroleum Refining & Chemicals	Professional Services & Corporate Operations	Rare Earth Elements & Mineral Mining	Transportation & Logistics
• Biotechnology, Pharmaceuticals and Medical Devices • Agricultural Science & Technology	• Industrial Chemical Products • Petroleum Refining • Plastics	• Business Services & Corporate Headquarters • Financial Services	• Metal Mining • Nonmetal Mining	• Distribution and E-Commerce • Transportation and Aviation Services

Economic Development Pillars

Thriving **Businesses & Industries** | Robust **Innovation & Entrepreneurship** Ecosystem | Nimble **Workforce** Training Environment | Resilient **Infrastructure** Network

The chosen sectors reflect Texas' diverse economic strengths, global trade connections, and capacity for innovation. They represent industries that are both tradable – bringing investment and jobs from outside the state – and locally anchored – supporting community-level growth. By focusing on these sectors, the plan aims to strengthen Texas' position as a global economic powerhouse, ensuring sustainable job creation, technological advancement, and regional prosperity across the state.

As one of the key target sectors driving economic development and global competitiveness, the life science and biotech industry is playing a strong role in Texas' growth. Texas is globally recognized for its leadership in biotechnology and medical research. Texas' universities and private sector entities conduct billions of dollars in research and development, with R&D performance growing at an average annual rate of 5.2% between 2016 and 2020. This dynamic research is supporting cutting-edge biotechnology and life sciences companies and manufacturing.

The life science and biotech sector is distributed regionally across Texas, with strong clusters in the major metropolitan areas of Houston, Austin, Dallas-Fort Worth, and San Antonio. These regions benefit from proximity to medical research institutions, colleges and universities, and healthcare systems, which serve as anchors for biotech innovation. The life science and biotech industry is a driver of high-wage jobs, export growth, and technological advancement, and is well aligned with Texas' goal to lead in innovation and global competitiveness.

Economic Development Pillars

Supporting each of the plan's key target industries are economic development pillars. These four pillars outline key aspects that are critical for success and growth in any industry.

Business and Industry	Innovation and Entrepreneurship	Workforce	Infrastructure

The Business and Industry Pillar is designed to address the general issues affecting businesses and to cultivate diversified economic growth. The focus of this pillar is to support business attraction, expansion, and retention efforts across all regions and to ensure Texas remains a global powerhouse by fostering a strong base of companies, from small startups to multi-national corporations, which create jobs and drive investment.

The Innovation and Entrepreneurship Pillar is foundational to support Texas-based companies working to develop new products, disrupt markets, and expand the innovation economy. This pillar's goal is to encourage the research and development necessary to create new technologies and to provide support and capital for startups to translate those new concepts into products.

No industry can succeed without a strong, skilled, educated workforce. **The Workforce Pillar** is designed to strengthen the programs and resources necessary to support a nimble, skilled, and diverse workforce. It is imperative to align education and training systems with industry needs to prepare Texans for the jobs of the future and to ensure effective talent development and retention.

The Infrastructure Pillar affects all aspects of a business' success. It is the development and maintenance of critical infrastructure that enables flourishing industries and communities, and comprises the investment in facilities, transportation, utilities, broadband, and other systems that connect people and businesses. A capable and resilient infrastructure is critical to supporting Texas' rapid population and industry growth.

Together, these four pillars form the blueprint for building a stronger, more competitive, and more connected Texas economy through 2029.

Strategic Enhancements for the Life Science and Biotech Industry

For the remainder of this report, each of these four pillars will be explored from the perspective of the life science and biotech industry, outlining existing strengths and key challenges currently facing the industry, and presenting ideas for addressing these challenges. These suggestions are designed to encourage participation among all ecosystem participants. When taken together, this report aims to provide strategic direction and a vision for the continued growth and success of this important industry sector.

PILLAR 1

BUSINESS AND INDUSTRY

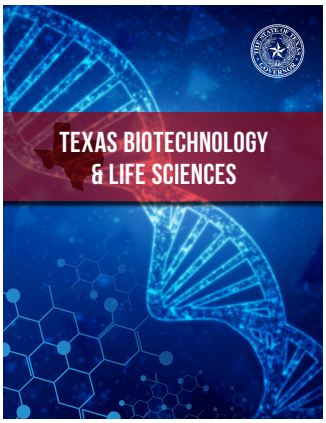
According to the Texas Economic Development & Tourism Office within the Office of the Governor, the biotechnology and life sciences industry is a cornerstone of Texas' economy, driving innovation, job creation, and global leadership in medical research and development. Texas ranks among the top states for biotech-related establishments, doctorates, and clinical trials, underscoring its strong foundation in research and innovation.

Texas' success in biotechnology is fueled by its world-class research institutions, including 16 research institutions ranked as Tier 1[16] by the Carnegie Commission on Higher Education, and seven of the nation's top 125 medical schools and facilities. These institutions collaborate with universities and private companies to advance medical breakthroughs, from cancer research to vaccine development. Beyond human health, Texas also leads in agricultural and animal biotechnology, leveraging its strong agricultural base and research universities. The industry not only enhances global health outcomes but also fuels economic growth, scientific advancement, and the state's reputation as a leader in life sciences innovation.

The Business and Industry Pillar of the Bigger. Better. Texas. Statewide Economic Development Strategic Plan focuses on strengthening Texas' position as a global leader in business growth, innovation, and job creation. Key objectives include accelerating growth in target sectors (such as life sciences), removing regulatory barriers, and promoting incentive programs to support Texas businesses. The state will also work to advance Texas' global economic leadership, expand local and regional economic development capacity, and pursue strategic federal funding opportunities to enhance state programs and leverage federal initiatives to support sectoral and regional growth.

Business and Industry in Life Sciences and Biotech

Throughout 2025, THBI conducted four industry-based focus groups and 28 interviews with life science and biotech companies throughout Texas. Additionally, THBI participated in regional events across the state, interacting with industry representatives and hearing about the strengths and challenges facing industry companies and research partners.



16 Texas Higher Education Coordinating Board. (2025, February 21). Texas leads the nation in top-tier research universities, https://www.highered.texas.gov/texas-leads-the-nation-in-top-tier-research-universities/

Addressing Industry Strengths and Challenges:

EXPAND
small business innovation incentives

PROMOTE
Texas life science and biotech

LEADERSHIP
on biosecurity challenges

PARTNERSHIPS
to address regulatory barriers

STRENGTH → Business Incentive Programs

Texas offers a comprehensive range of business incentive programs designed to attract investment, create jobs, and strengthen the state's economy. These incentives are categorized into grants, tax incentives, and financing programs. Grants support sectors such as industry, creative arts, workforce training, and research. The Texas Enterprise Fund provides performance-based "deal-closing" grants for companies competing with out-of-state locations. Workforce development is supported through the Lone Star Workforce of the Future Fund, the Skills Development Fund, and the Self-Sufficiency Fund, which finance customized job training. Additional grants are available to fund cancer research, defense community support, university research recruitment, and space exploration initiatives.

Tax incentives reduce business costs through exemptions, credits, and abatements. The Texas Jobs, Energy, Technology & Innovation (JETI) Act offers property tax abatements for large-scale industrial projects, while the Texas Enterprise Zone Program provides sales tax refunds tied to job creation. Other incentives include exemptions for manufacturing equipment, R&D tax credits, and property tax relief for biomedical and renewable energy projects.

Financing programs also exist to help businesses and communities access capital for expansion, including Industrial Revenue Bonds, the Texas Energy Fund (for electric infrastructure), the Micro-Business Disaster Recovery Loan Program, the Military Value Revolving Loan Fund, and the Texas Small Business Credit Initiative (which supports small business lending and guarantees). Together, these programs make Texas a competitive environment for business growth, innovation, and workforce development.

Texas Grant Programs – Key funding initiatives for development

CANCER RESEARCH FUNDING
CPRIT provides vital resources for cancer research, clinical trials, and prevention efforts in Texas.

SPACE RESEARCH FUNDING
SEARF supports advancements in space exploration and workforce training.

DEFENSE SUPPORT GRANT
DEAAG aids communities in adapting and creating jobs.

COMMUNITY IMPACT
These grant programs drive innovation and support essential community development efforts across Texas.

UNIVERSITY RECRUITMENT INITIATIVE
GURI matches grants for attracting top researchers to Texas universities.

CHALLENGE → Small Business Innovation

Currently, Texas does not have any statewide programs supporting small business innovators who are working to build new products and grow their businesses in Texas. At the federal level, the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs are managed by the U.S. Small Business Administration and fund small businesses to conduct federal research and development with commercial potential. The SBIR program supports innovative small businesses directly, while the STTR program requires collaboration between small businesses and U.S. research institutions. These grants are designed to stimulate growth for start-ups and small businesses across all industry sectors. These grants are issued by a variety of federal agencies including the National Science Foundation, the Department of Defense, the Department of Health and Human Services, NASA, among others. In 2023, Texas received 345 SBIR/STTR grants, ranking among the top ten states nationally.

Although these grants are small, they often provide a lifeline in the product development cycle for small businesses. Phase I grants establish the technical merit, feasibility, and commercial potential of a proposal, with awards typically between $50,000-$250,000 for six months (SBIR) or one year (STTR). Phase II grants continue Phase I efforts toward commercialization goals, and awards are generally $750,000 for two years.

Currently, 34 other states have matching programs, which provide some level of funding to state-based companies that receive federal SBIR/STTR awards. Texas has the tremendous opportunity to establish a matching grant program for successful awardees who complete the SBIR/STTR grant cycle. The creation of the Texas Technology Innovation Program would address shortfall in the current package of business incentives for economic development in Texas and ensure that Texas small businesses are not lured to other states with the promise of matching grants. The program would not only attract and retain innovative businesses, but also amplify federal investments, strengthen defense and technology sectors, and position Texas as a national leader in home-grown innovation.

STRENGTH → Promoting Texas on the World Stage

Texas' economic development agencies such as the Office of the Governor and the Texas Economic Development Corporation globally promote the state to prospective new businesses. They often tout the state's business friendly environment and the fact that Texas is a low-tax, pro-growth, low-regulation state. The state consistently attracts major corporate relocations, expansions, and foreign direct investment through targeted marketing. The state has also identified ten key target industries as a focus for this promotional activity, which includes the life science and biotech industry.

To promote the life science and biotech industry in Texas, it is critical to maintain a visible presence at the BIO International Convention. This annual convention is the largest and most comprehensive event for the global biotechnology industry, bringing together over 20,000 industry leaders, researchers, investors, and policymakers for networking, education, and business development. Hosted by the Biotechnology Innovation Organization (BIO), it encompasses the full ecosystem of biotech, including pharmaceutical companies, startups, academia, and non-profit organizations. BIO is famous for its "One-on-One Partnering," a platform that facilitates tens of thousands of meetings, allowing participants to find partners and investors. The convention also features hundreds of sessions and speakers, covering topics like AI in drug discovery, cell and gene therapy, regulatory policies, and vaccine development. Attendees come from around the globe, representing biotech companies, government agencies, academic institutions, and investors. It is considered a premier hub for deal-making and showcasing the latest advancements in the life science industry.

Each year, THBI hosts the BioTexas Pavillion in the convention exhibition hall and coordinates the Texas Block to demonstrate the full scope and breadth of the state's life science industry. In addition to representing and promoting the state in general, THBI works to collect leads, build relationships, and profile key assets to the convention's thousands of attendees.

Over 35 companies and organizations partner with THBI each year to promote themselves at the convention. In 2025, over 60 individuals took meetings, shared marketing materials, and made connections to grow their programs. Additionally, adjacent to the BioTexas Pavillion, the Texas Block creates a slice of home on the convention floor for all Texans. Booths that represent Houston, San Antonio and the greater North Texas region collaborate with BioTexas to host one of the largest convention blocks. In 2025, the BioTexas Pavillion received over 450 leads and connections.

CHALLENGE → Global Competitiveness

Maintaining competitive leadership in biotechnology is critical for national security, economic strength, and continued innovation for the state and the nation. A strong bioeconomy is not only a driver of scientific progress but also a strategic asset that underpins the nation's health, defense, and global influence.

In October 2025, an article in Forbes[17] warned that dependence on foreign biotech supply chains – especially from China – poses serious risks. BIO CEO John Crowley has stated that biotechnology is "vital to national security and the protection of public health." [18] The U.S. must ensure domestic capacity for biomanufacturing and supply chain resilience to avoid strategic dependence on foreign powers.

There are economic reasons to maintain a strong bioeconomy. The industry sustains high-value jobs, attracts investment, and ensures that the U.S. remains a global hub for scientific advancement. The research and clinical development processes that drive bio-innovation are integral parts of the innovation ecosystem. Recently, Senator Bill Cassidy emphasized that the United States leads the world in producing medical discoveries, accounting for 40% of global biotech patents. However, he warned that regulatory uncertainty and outdated product development frameworks could push innovation overseas.

IN THE NEWS

22 NEW PLUS

At Global Life Sciences Mixer, Networking, Competition on Display as Boston Hosts BIO

"You can double your runway if you start your company or bring your company to north Texas."

Full article here ↗

Maintaining U.S. leadership in biotechnology is not optional – it is a strategic necessity. It safeguards national security by ensuring control over critical medical and defense technologies, strengthens the economy through innovation-driven growth, and preserves the country's role as the world's scientific leader.[19]

Further expanding on issues related to biosecurity, the National Security Commission on Emerging Biotechnology (NSCEB) issued a report outlining a comprehensive strategy to ensure the U.S. leads in biotechnology innovation while safeguarding national security and economic prosperity. It warns that biotechnology – an emerging field integrating biology, engineering, and artificial intelligence – is at a critical inflection point that will shape the 21st century's global power dynamics.

The NSCEB argues that biotechnology is not merely a scientific field, but a strategic domain akin to nuclear or information technology. Falling behind could endanger the country's defense, economy, and health security. Conversely, leadership in biotechnology could revolutionize medicine, agriculture, energy, and manufacturing – improving lives and strengthening national resilience.

According to the NSCEB report, if the U.S. acts decisively, biotechnology could **defend**, **build**, **nourish**, and **heal** – enhancing defense readiness, revitalizing manufacturing, improving food security, and curing diseases. But if the U.S. fails to act, adversaries could **attack**, **destroy**, **starve**, and **harm** – using biotechnology to undermine infrastructure, agriculture, and health systems.

17 Numerof, Rita (2025, October 7). The Next Great Race: Why America Can't Afford to Lose Biotech Leadership to China. Forbes. https://www.forbes.com/sites/ritanumerof/2025/10/07/the-next-great-race-why-america-cant-afford-to-lose-biotech-leadership-to-china/

18 BIO. (2024, March 13). Biotechnology is a national security Imperative, says BIO CEO. https://www.bio.org/press-release/biotechnology-national-security-imperative-says-bio-ceo

19 Popper, Tom. (2025, November 3). BIO CEO John Crowley tells Senate how to support biotech. BIO.News. https://bio.news/federal-policy/bio-ceo-john-crowley-tells-senate-how-to-support-biotech/

Ultimately, biotechnology holds the key to the next transformative leap for humanity, comparable to the digital revolution. Breakthroughs in AI-driven protein modeling and DNA synthesis are examples of the field's accelerating potential. The NSCEB has issued a call for urgent, coordinated national action. The choice is clear: act swiftly to secure America's biotechnology future - or risk permanent decline in security, prosperity, and innovation.

NSCEB Recommendations

The NSCEB's central recommendation is that the U.S. government should invest **at least $15 billion over five years** to accelerate biotechnology innovation and protect national interests. The report organizes its strategy into five pillars:

1. **Prioritize Biotechnology at the National Level.** Establish a National Biotechnology Coordination Office to unify federal efforts, elevate biotechnology as a strategic priority, and ensure resilience against supply chain vulnerabilities.
2. **Mobilize the Private Sector.** Simplify regulations, expand access to capital, and protect U.S. companies from unfair foreign competition, particularly from China.
3. **Maximize Biotechnology for Defense.** Develop ethical guidelines for military biotechnology use, invest in bio-enabled defense capabilities, and ensure the U.S. military is not dependent on foreign biotech supply chains.
4. **Out-Innovate Strategic Competitors.** Strengthen research partnerships, create a Web of Biolabs to accelerate innovation, and counter China's state-backed biotech expansion.
5. **Build the Biotechnology Workforce of the Future.** Expand training programs, ensure federal agencies have biotech expertise, and increase domestic biomanufacturing education.
6. **Mobilize Allies and Partners.** Deepen international cooperation through a Biotechnology Security and Innovation Fund to share research and strengthen global biosecurity.

STRENGTH → Industry Collaboration and Partnership

The life science and biotech industry has grown 21% since 2019. With that growth has come some understandable growing pains, and biotech companies face particular challenges as they grow. Rules and regulations at all levels of government often have a difficult time adapting to new technologies, and biotech is no exception. Challenges with zoning restrictions, with state environmental regulations, and even fire code enforcement is a reoccurring complaint among companies. Many of these regulations were designed to address risks that just do not exist in the life sciences and biotech industry.

BioNTX's Life Sciences Manufacturing Initiative brings together a select group of independent experts to help guide and prioritize North Texas' most critical biomanufacturing needs. The Initiative focuses on strengthening the region's manufacturing foundation by aligning assets across academia, industry, workforce, and investment; identifying strategic gaps; and informing policymakers and ecosystem partners.

Through this coordinated approach, BioNTX aims to enhance Texas' national and global competitiveness - attracting investment, expanding manufacturing capacity, and advancing a stronger, more resilient life sciences manufacturing ecosystem in support of a Bigger, Better Texas.

Regional Bio Partners

The biotech industry has a strong entrepreneurial spirit which has led to the creation of a network of strong partnerships that exist to help companies through these challenges.

BioAustinCTX Central Texas

BIOHOUSTON

BIONTX

BioMedSA

Regional Economic Development Partners

CHALLENGE → Expanding Bio-Industrial Assets

One aspect of the biotech industry that is growing in Texas is the bio-industrial sector. Bio-industrial manufacturing uses microorganisms, cells, or enzymes to convert renewable feedstocks (like agricultural waste or plant sugars) into fuels, chemicals, materials, and food. It offers a sustainable alternative to traditional petrochemical-based processes by reducing carbon emissions and reliance on fossil resources.

Bio-industrial manufacturing uses industrial fermentation and biorefinery processes to produce goods, often leveraging genetic engineering to optimize efficiency to create bioplastics, biodegradable packaging, textiles, advanced coatings, and many other products. Bio-industrial companies are increasingly replacing fossil-based materials with high-performance, renewable alternatives in sectors like automotive, construction, and consumer goods.

States and regions looking to expand their bio-industrial sector can look to BioMADE for partnership, resources, and support. BioMADE accelerates state-level bio-industrial development by establishing regional, open-access, pilot-scale manufacturing facilities, bridging the gap between lab research and commercial production. By fostering public-private partnerships, it helps states attract investment, re-shore manufacturing, and build a trained STEM workforce for producing bio-based products like plastics, chemicals, and sustainable materials.

Houston is viewed as a favorable location for synthetic biology activity because of its infrastructure, concentration of talent, and cross-sector industry base. The Greater Houston Partnership is working with local bio-industrial partners to scale and expand these assets in that region. The region is already home to several companies which are already contributing to the bio-industrial ecosystem, demonstrating how the region's diverse strengths can support emerging technologies.

These recommendations are aimed at improving the business environment for life science and biotech companies. Recommendations address state, federal, and local policymaking, and include best practices and suggestions for biotech companies and regional partners. These recommendations will expand state investment in small business innovation, enhance the strength of the bioscience economy in Texas by protecting national biosecurity, and promote greater collaboration and partnership across the state and the full spectrum of biotech companies in the ecosystem.

IN THE NEWS

GREATER HOUSTON PARTNERSHIP

How Synthetic Biology is Powering Houston's Future

"With its diverse industries and collaborative spirit, Houston is primed to play a central role."

Full article here ↗

Pillar 1 – Business & Industry Recommendations:

RECOMMENDATION: Create the Texas Technology Innovation Program to provide state matching grants to Texas-based companies receiving federal SBIR or STTR awards.

RECOMMENDATION: Texas biotech companies, research institutions, and economic development entities should promote themselves and maximize the presence of Texas on an international stage through the BioTexas Pavillion.

RECOMMENDATION: Support strengthening U.S. biosecurity and expand biotech-related onshoring and manufacturing capacity.

RECOMMENDATION: Support implementation of NSECB-related recommendations across the full biotechnology ecosystem.

RECOMMENDATION: Life science/biotech researchers, start-ups, and growing companies should find the right partnerships and participate in the bioscience ecosystem across the state.

RECOMMENDATION: Expand Texas bio-industrial resources as an integral part of the larger bioscience ecosystem.

PILLAR 2

INNOVATION AND ENTREPRENEURSHIP

In 2014, Pam and Chris Andrews noticed their oldest daughter, at 3 years old, was showing developmental delays in her gross and fine motor skills. Answers were difficult to come by, but they did not give up. Over the next several years, they sought answers from a multitude of specialists, speech, vision, and physical therapists, neurologists, oncologists, ENTs, nephrologists, and endocrinologists before finally accessing tests to have their daughter's genome analyzed by whole exome sequencing to look for potential genetic diseases.

Test results revealed Niemann-Pick Disease Type C (NPC), a very rare genetic disease. The incidence of NPC is estimated to be about one case per 100,000 live births. There are currently about 2,000 diagnosed cases of NPC worldwide, and the prognosis for these children is devastating. In response, the Andrews family poured through the research and found a clinical trial in Chicago evaluating a drug for treating NPC called VTS-270.

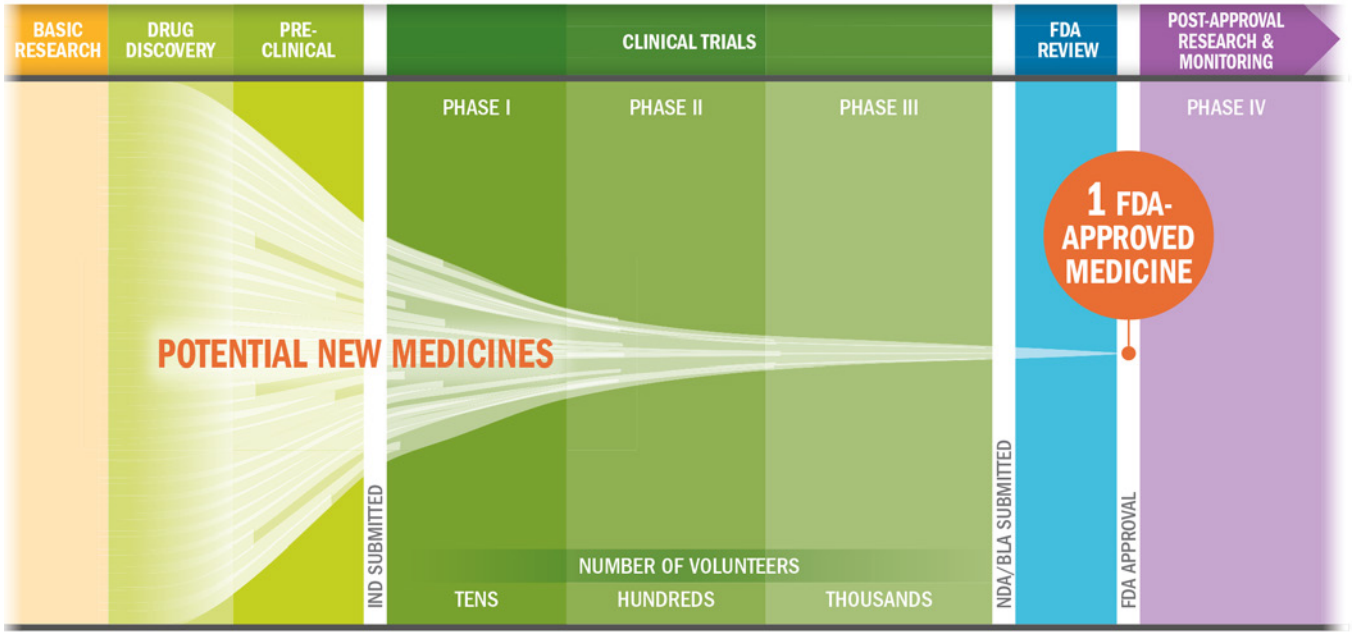
Over the next decade, the Andrews family would become key members of a community of families affected by NPC, moving mountains to bring the clinical trial to Texas, and working tirelessly to connect the dots that ultimately resulted in the development of a drug cocktail that supports their daughter and dramatically improved the quality of her life.

Since then, three drugs have been approved for NPC treatment, with two more in the pipeline. The Andrews family started the Firefly Fund to fund and support research and education necessary to accelerate cures for rare neurodegenerative genetic diseases affecting children. In 2024, the Firefly Fund announced a pledge of $5 million as the founding sponsor of the groundbreaking Center for Rare Disease at the University of Texas Dell Medical School. The center focuses on best-in-class, next-generation research, diagnostics and treatments for patients with rare diseases.

The Andrews are not the only Texas family struggling to find a cure for their loved ones. In 2021, Casey McPherson's daughter was diagnosed with an ultra-rare genetic disease: HNRNPH2. At two years old, she lost the ability to talk, her motor skills became impaired, and she began to retreat into a world away from her family. Despite the diagnosis, McPherson refused to accept that nothing could be done. He founded the To Cure a Rose Foundation which is still racing to find not only a cure, but to develop a pipeline for making genetic treatments faster and more sustainably than ever before. He also formed AlphaRose Therapeutics, a public-benefit corporation building a precision medicine company to fundamentally change how the industry develops and commercializes genetic disease treatments.

The Biopharmaceutical Research and Development Process

From drug discovery through FDA approval, developing a new medicine takes at least 10 years on average and costs an average of $2.6 billion.* Less than 12% of the candidate medicines that make it into Phase I clinical trials will be approved by the FDA.



Key: IND: Investigational New Drug Application, NDA: New Drug Application, BLA: Biologics License Application

* The average R&D cost required to bring a new, FDA-approved medicine to patients is estimated to be $2.6 billion over the past decade (in 2013 dollars), including the cost of the many potential medicines that do not make it through to FDA approval.

Source: PhRMA adaptation based on Tufts Center for the Study of Drug Development (CSDD) Briefing: "Cost of Developing a New Drug," Nov. 2014. Tufts CSDD & School of Medicine and US FDA Infographic, "Drug Approval Process," http://www.fda.gov/downloads/Drugs/ResourcesForYou/Consumers/UCM284393.pdf (accessed Jan. 20, 2015).

These are just a few examples of the groundbreaking work done in life sciences and biotech in Texas. Texas companies are providing ongoing and long-term economic benefit to the entire state by creating jobs and commercial activity that support an expansive network of partners and vendors. The research and clinical trial process generates additional economic benefits while advancing patient treatment and leading to therapies and treatments that dramatically improve – or even save – the lives of patients, like the children of the Andrews family and Casey McPherson.

Drug manufacturers and biotech product manufacturers must survive a gauntlet of challenges to develop new drugs and therapies to prove both the effectiveness and efficacy of the product. The process takes an average of ten years and costs on average over $2.5 billion. But many Texas-based life science and biotech companies are successfully taking this journey.

IN THE NEWS

FIREFLY FUND

Firefly Fund Announces $5 Million Gift to Create Center for Rare Disease at UT Austin Dell Medical School

Full article here ↗

Recent Breakthroughs from Texas Innovators

- Lexicon Opens Path to $1B+ Opportunity as FDA Greenlights Phase III for Non-Opioid Pill.
- FDA Approval of Belzutifan Culminates 25-Year Journey at UTSW from Gene Discovery to First-in-Class Drug.
- Nanoscope Strengthens Global Regulatory Pathways for MCO-010 with FDA RMAT and Five EMA Orphan Designations.
- FDA Approvals of ZYNTEGLO® (betibeglogene autotemcel) and SKYSONA® (elivaldogene autotemcel) Mean Lonza Houston Now Supports Three Commercial Cell and Gene Therapy Products with Manufacturing Services
- Lantern Pharma's LP-284 Receives FDA Orphan Drug Designation for Soft Tissue Sarcomas.
- Hummingbird Bioscience Announces First Patient Dosed in Phase I Clinical Trial of HMBD-501 in Advanced HER3-Expressing Solid Malignancies.
- Prospective Validation Study in JAAD Demonstrates Castle Biosciences' AdvanceAD-Tx™ Test Identifies Patients More Likely to Achieve Faster and Deeper Responses with JAK Inhibitor Therapy in Moderate-to-Severe Atopic Dermatitis.

**This is not an exhaustive list.*

STRENGTH → Excellence in Research

The Statewide Economic Development Strategic Plan prioritizes innovation and entrepreneurship as a key pillar of economic development. There are more than 3.2 million small businesses and startups in Texas, and Texas has established itself as a national leader in business creation and innovation. Supporting startups and small businesses through incubators, accelerators, and funding networks, the state can foster a more resilient ecosystem that is prepared to adapt through economic shifts. Ultimately, innovation and entrepreneurship are not just economic drivers; they embody the spirit of Texas, ensuring continued growth, opportunity, and leadership in the global economy.

Much of the research to create new innovations and products starts within Texas' higher education institutions. In addition to the 16 universities now holding Tier 1 (R1) designation, many Texas universities are conducting research in life science, biotech, medical devices, and other related fields. Texas is the home to many prestigious research programs that are leading to breakthroughs in oncology, trauma care, brain research and rare diseases.

Research Excellence in Texas

- The University of Texas at Arlington's Institute of Biomanufacturing and Precision Medicine for North Texas (IMPRINT)
- The Center for Rare Disease at Dell Medical School at The University of Texas at Austin
- Texas Biomedical Device Center at The University of Texas at Dallas
- UT Health San Antonio Glenn Biggs Institute for Alzheimer's & Neurodegenerative Diseases
- The University of Texas Medical Branch Moody Brain Health Institute and Sealy Center on Aging
- UT Southwestern Harold C. Simmons Comprehensive Cancer Center and Peter O'Donnell Jr. Brain Institute
- Texas A&M Health Center for Infectious and Inflammatory Disease and Texas A&M College of Medicine Institute for Regenerative Medicine
- Texas State University's Clinic for Autism, Research, Evaluation, & Support and Translational Health Research Center
- University of North Texas Health Science Center's North Texas Eye Research Institute and Institute for Translational Research
- Baylor College of Medicine Research Centers

**This is not an exhaustive list.*

CHALLENGE → Instability in Federal Research Funding

Throughout 2025, there was a crisis facing research institutions due to the instability of federal research funding. The U.S. federal research grant landscape faced unprecedented instability, characterized by sudden freezes, widespread terminations, and significant shifts in funding priorities.

Following a directive in January 2025, thousands of grants from the National Institutes of Health (NIH) and National Science Foundation (NSF) were paused or terminated. By November 2025, approximately $2.3 billion in unspent NIH funds and $700 million in NSF funds were reportedly cut, affecting thousands of projects. The funding gap widened from January 2025 onward, with U.S. institutions receiving billions less in research grants compared to previous years. Some estimates indicated a 29% drop in NIH awards and a 50% drop in NSF awards by mid-2025. Early-stage investigators were hit particularly hard, with success rates dropping significantly, reducing the pipeline for future scientists. While some funding was restored following legal challenges, the ongoing legal battles created a climate of deep uncertainty for researchers. Additionally, the NIH and NSF moved to cap indirect cost rates to 15%, forcing universities to absorb more operational costs, leading to hiring freezes and reduced lab resources. By late 2025, the instability had resulted in a "chilling effect" on the U.S. scientific community.

This instability threatens to erode U.S. dominance in biomedical and biotech research and development by undermining the long-term research pipeline. Stalling early-stage research and forcing companies to abandon high-risk/high-reward projects allows competitor nations like China to gain ground through sustained, massive R&D investment. Reduced funding for basic research slows the pipeline of novel discoveries reaching the clinical stage. To survive, firms are abandoning long-term research in favor of single-asset development, reducing the overall innovation capacity.

Instability also undermines the academic research ecosystem, reducing the ability of universities to maintain the specialized facilities necessary for cutting-edge biotech research[20]. While the U.S. currently leads, China's 400-fold increase in biopharma R&D spending, coupled with advancements in AI-driven drug discovery, threatens to eclipse U.S. dominance. In essence, the "relay race" model of biotech funding – from basic government research to commercialization – is broken, allowing other countries with consistent, long-term funding strategies to threaten U.S. leadership.[21]

The state of Texas has made significant investment in building research infrastructure to find a cure for cancer. Created in 2007, the Cancer Prevention and Research Institute of Texas (CPRIT) was established to position Texas as a national leader in cancer research, prevention, and innovation. Its core mission is to invest in groundbreaking research, expand cancer prevention services, and accelerate the development of new cancer treatments and technologies. By funding academic institutions, biotechnology companies, and community organizations, CPRIT aims to reduce the burden of cancer across the state while fostering economic growth through scientific discovery.

20 Blader I, Goodrum F, Imperiale MJ, Casadevall A, Arias CA, Baumler A, Burnham C-AD, Cuomo CA, Detweiler CS, Forrest GN, Gilbert JA, Lovett S, Maloy S, McAdam A, Newton I, Reguera G, O'Toole GA, Schloss PD, Shade A, Whiteley M. (2025, February 27). A call for the United States to continue investing in science. J Bacteriol. https://pmc.ncbi.nlm.nih.gov/articles/PMC12004941/

21 Popper, Tom. (2025, April 14). Congressional commission urges support in U.S.-China competition for biotech dominance. BIO.News. https://bio.news/federal-policy/ncseb-congressional-commission-urges-support-in-u-s-china-competition-for-biotech-dominance/

STRENGTH → State Investment in Oncology and Dementia Related Research

According to the CPRIT's 2025 Annual Report, the institute has awarded more than $3.7 billion in grants since its inception, supporting over 1,800 projects statewide. These investments have helped recruit more than 300 world-class cancer researchers to Texas institutions, strengthening the state's biomedical research infrastructure. CPRIT-funded programs have also provided millions of cancer prevention services, including screenings and vaccinations, particularly in underserved communities. The institute's support has led to the creation of new biotech startups, advanced clinical trials, and innovative therapies that improve patient outcomes. Through its strategic combination of research, prevention, and commercialization, CPRIT continues to transform Texas into a global hub for cancer innovation, saving lives, driving discovery, and ensuring a healthier future for all Texans.

The grant programs at CPRIT were developed with the understanding that cancer research is most valuable when scientists can transition promising discoveries in basic research into safe and reliable drugs, diagnostics, and therapies to treat cancer patients.

CPRIT has also created the Texas Resource Guide to help companies ready to innovate in Texas identify strong partnerships and resources to grow their business. The Guide provides information about service providers and other entities, including potential sources of investment, which support early stage and developing life science companies in the state. These investments by CPRIT have resulted in the creation of a sizable and diverse network of vendors, accelerators, co-working offices and wet lab space, biomedical manufacturing, and venture funding working to implement bold approaches to addressing oncology research and technology challenges.

In 2025, the Texas Legislature and Texas voters approved an additional investment designed to build on the success of CPRIT. The Dementia Prevention Research Institute of Texas (DPRIT) was created through the bipartisan passage of Senate Bill 5 and Senate Joint Resolution 3, and subsequently authorized by Texas voters with the passage of Proposition 14 on November 4, 2025.

Modeled after CPRIT, DPRIT will invest $3 billion over ten years, using existing state revenue to fund research on dementia, Alzheimer's, Parkinson's disease and related neurodegenerative disorders. The $3 billion ($300 million annually) will be used for research grants, facilities, and operations, and will be administered by an oversight board, with grant vetting and performance metrics to ensure accountability. DPRIT has been designed to foster collaboration between universities, hospitals, and private companies to accelerate research and to find new therapies and medications to fuel medical innovation and improve care for the 459,000+ Texans living with Alzheimer's[22]. DPRIT is positioned to be the largest state-funded initiative in the nation dedicated to dementia, aiming to make Texas a global leader in brain health research.

Unfortunately, implementation of DPRIT has been delayed by legal action filed in November 2025 by three Texas voters claiming that invalid voting machines were used, arguing for a new election; state officials have called this a frivolous attempt to block government spending[23]. Appointments for the DPRIT Oversight Committee and official implementation are delayed until the suit is fully adjudicated.

STRENGTH → A National Leader in Clinical Trials

Clinical trials are essential for advancing medical science and developing new treatments, but they also serve as powerful economic engines that generate substantial financial activity. According to a March 2025 report by TEConomy Partners[24], biopharmaceutical industry-sponsored clinical trials inject billions of dollars into state economies each year through direct and indirect spending. These investments ripple through local communities, supporting jobs, businesses, and services that extend far beyond the research sites themselves.

At their core, clinical trials represent the most resource-intensive stage of the research and development process. They require significant expenditures for site operations, medical staff, laboratory testing, patient recruitment, and data management. The report estimates that in 2023, the U.S. biopharmaceutical industry invested more than $30 billion in site-based clinical trial research, which in turn generated over $62 billion in total economic activity nationwide when accounting for indirect and induced effects. These ripple effects include spending by vendors, suppliers,

22 Alzheimer's Association. (2025, November 5). Texans Make History with Passage of Proposition 14, Launching Nation's Largest State-Funded Dementia Research Initiative. https://www.alz.org/news/2025/texas-proposition-14-passes-nations-largest-state-funded-dementia-research-initiative

23 Office of Lt. Governor Dan Patrick. (2025, November 19). Lt. Gov. Dan Patrick Statement on DPRIT Lawsuit. https://www.ltgov.texas.gov/2025/11/19/lt-gov-dan-patrick-statement-on-dprit-lawsuit/

24 TEConomy / PhRMA, Biopharmaceutical Industry-Sponsored Clinical Trials: Impacting State Economies, March 2025.

and employees whose incomes are supported by clinical trial operations. For example, hospitals, physician offices, and outpatient centers benefit directly from hosting trials, while local businesses, from transportation to hospitality, gain indirectly from increased economic activity.

Clinical trials also create high-value employment opportunities. They engage physicians, nurses, laboratory technicians, data analysts, and administrative staff, many of whom are employed locally. Additionally, the infrastructure required to support clinical research – such as specialized laboratories, data management systems, and regulatory compliance services – stimulates demand for skilled labor and professional services. This ecosystem fosters innovation and strengthens the broader life sciences sector within each state.

Beyond direct economic benefits, clinical trials enhance a state's competitiveness in the biomedical industry. They attract investment from global pharmaceutical companies, encourage partnerships between academia and industry, and position states as hubs for innovation. The presence of active clinical trials also improves access to cutting-edge treatments for local patients, contributing to public health outcomes while reinforcing local healthcare systems' capabilities.

Texas was **second in the nation for the number of clinical trials** in 2023: California (2,695), Texas (2,508), Florida (2,198), New York (1,932), and Ohio (1,475).

Texas had 2,508 clinical trials active in 2023 with a total enrollment of 102,462, the **highest participation in the nation**.

Texas clinical trials in 2023 generated an estimated total site-based trial investment of $3,493,200 and a **total economic impact of $7,689,100**.

Within this national context, Texas stands out as one of the leading states in clinical trial activity and economic impact. Texas' strong performance reflects the strength of the research infrastructure in Texas in addition to its large population, diverse healthcare infrastructure, and extensive network of research institutions and hospitals capable of conducting complex clinical studies. The state's size and diversity also make it an attractive location for trials requiring broad demographic representation. Moreover, Texas' clinical research ecosystem supports not only major metropolitan areas but also smaller communities, ensuring that the economic benefits of clinical research are widely distributed.

The strength of Texas clinical trial system has led to many institutions developing strong innovative approaches to expedite clinical trials and drug development. The University of Texas MD Anderson Cancer Center is one prime example.

→ *Accelerating Cancer Drug Development: UT MD Anderson's Game-Changing Approach*

Leading the mission to end cancer, The University of Texas MD Anderson Cancer Center is redefining drug development. By blending cutting-edge science, exceptional clinical research, strategic collaborations, and powerful data-driven solutions, the institution is accelerating the process from lab discovery to patient care. Support from the Cancer Prevention and Research Institute of Texas (CPRIT) has been instrumental in advancing this work, awarding more than $725 million to the institution since its inception.

→ *A New Era of Clinical Research Operations*

UT MD Anderson leads the **world's largest cancer clinical trials program, with over 10,000 patients enrolled.** In Fiscal Year 2025, 70% of new cancer therapies approved by the FDA were investigated at UT MD Anderson. The institution is streamlining clinical drug development with a focus on speed, efficiency, and collaboration. By implementing changes to workflow and incorporating standardization and centralization of certain functions, UT MD Anderson has been able to decrease activation timelines to around **100 days** – a significant achievement in clinical trials.

→ *Key Factors Accelerating Drug Development*

- **A FULL-SPECTRUM APPROACH:** Expanding efforts to cover all stages of drug development, from **preclinical** and **discovery** collaborations and reaching beyond the clinic into such areas as **surgery**, **diagnostics**, **radiation oncology**, and even **microbiome** research. UT MD Anderson's Therapeutics Discovery division leverages this unique ecosystem to develop new therapies with the **bench at the bedside**, eliminating traditional bottlenecks.
- **DATA PLATFORMS POWERING INNOVATION:** Integrating the power of data science with the institution's expertise, the institution utilizes **multi-omic technologies**, **patient-derived disease models**, and **AI-enabled analytics** to overcome persistent challenges in oncology drug development.
- **LEVERAGING PROPRIETARY RESEARCH TOOLS:** With **over 600 active research tool licenses** including patient-derived xenograft (PDX) models, unique cell lines, and a broad range of antibodies, the institution is poised to explore every avenue of cancer research.
- **FLEXIBLE, REAL-TIME COLLABORATION MODELS:** Strategic collaborations with industry advance the institution's mission, with over **100 unique collaborations throughout various departments and labs across the institution.**

Texas clinical trials are vital economic generators that drive innovation, create jobs, and strengthen local economies. Texas exemplifies this impact, serving as a national leader in clinical research investment and participation. The state's robust infrastructure and active engagement in biopharmaceutical R&D underscore its critical role in advancing both economic growth and medical innovation across the United States.

CHALLENGE → Need for Modernization of the Approach to Scientific Discovery

In November 2025, the National Security Commission on Emerging Biotechnology (NSCEB) issued a report titled, "The Future of Science: A Playbook for Accelerating American Innovation," outlining a strategic vision to modernize the U.S. scientific enterprise and maintain global leadership in innovation. The report warns that U.S. dominance in science and technology is no longer guaranteed, as other nations - particularly China - are rapidly advancing through targeted investments in artificial intelligence, automation, and biotechnology.

The report identifies three major areas for reform:

- making the government a better partner in science and technology,
- enabling autonomous scientific discovery, and
- unlocking science across the country.

The report calls for modernizing federal funding systems, and recommends streamlining grant applications, creating interoperable funding platforms, and improving transparency around research priorities. It also urges a shift in how research success is measured, moving away from traditional metrics like publication counts toward evaluating reproducibility, collaboration, and innovation. The report proposes new funding mechanisms, such as rapid-decision grants and public-private partnerships, to accelerate high-impact research and commercialization.

The report also emphasizes enabling autonomous scientific discovery through AI, robotics, and automation. It envisions a future where "autonomous labs" can design and execute experiments with minimal human input, drastically reducing time and cost. To achieve this, the U.S. must modernize its research infrastructure, create interoperable data systems, and invest in high-quality training data. The report recommends unifying federally funded datasets, enforcing data-sharing requirements, and funding computational resources separately from research budgets, as well as open-access AI tools and a "Lab of the Future" grand challenge to drive innovation in automated research environments.

Finally, the report promotes unlocking science across the U.S. by democratizing access to research opportunities. It proposes "Science Extension" programs at universities to address local challenges, tax credits for industry-academia partnerships, and small-dollar grants to support early-career scientists. Additional recommendations include vocational training for emerging technologies, separating training and research grants, and exchange programs between government and industry to foster collaboration.

Overall, the NSCEB report presents a bold framework for revitalizing U.S. science - one that integrates technology, inclusivity, and efficiency. By reforming funding systems, embracing automation, and expanding participation nationwide, the U.S. can secure its leadership in global innovation and ensure that scientific progress benefits all.

Texas stands at the forefront of innovation and entrepreneurship, driving breakthroughs in life sciences, biotechnology, and clinical research. Families, institutions, and state initiatives like CPRIT and the forthcoming DPRIT exemplify Texas' commitment to advancing medical discovery and economic growth. Despite challenges such as unstable federal research funding, Texas continues to lead through strong infrastructure, world-class universities, and public-private partnerships. To sustain this momentum, stabilizing research funding, modernizing scientific discovery, and supporting emerging biotechnology initiatives are essential. Texas' innovation ecosystem ensures continued leadership in global research, economic resilience, and improved health outcomes for future generations. The following recommendations are solid next steps for THBI, for state and regional partners, and for industry participants to help reinforce the biosciences innovation in Texas.

Pillar 2 – Innovation and Entrepreneurship Recommendations:

RECOMMENDATION: Stabilize federal research funding and support ongoing research throughout the pipeline in Texas research institutions.

RECOMMENDATION: Support the full implementation of the Dementia Prevention and Research Institute of Texas.

RECOMMENDATION: Support NSCEB-recommended initiatives to enhance government partnerships with science and technology, enable autonomous scientific discovery, and unlock science across the country.

Bringing *everything* to dementia and aging research

The **Translational Health Research Center**, the **Alliance of Researchers in Aging**, and other initiatives at TXST are increasing **brain health** across the life span and improving **aging and dementia care** and **quality of life.**

See everything in action at

txst.edu/bring-everything

TEXAS STATE UNIVERSITY

PILLAR 3

WORKFORCE

The Statewide Economic Development Strategic Plan recognizes workforce development as a cornerstone of Texas' economic strength and long-term prosperity. The plan emphasizes that the people of Texas are the lifeblood of the state's economy, driving growth through their skills, innovation, and productivity. The plan highlights that a well-prepared workforce not only supports existing businesses but also attracts new investments, fueling job creation and economic diversification.

Industry Employment Data

As previously noted in the TEConomy report, in 2023, there were 129,245 employees across 9,212 bioscience establishments in Texas.[25] To determine these employee counts, TEConomy relied on the North American Industry Classification System (NAICS) codes. NAICS codes are a 2-to-6-digit standardized numbering system used by federal agencies to classify business establishments based on their primary economic activity. These codes help categorize firms for collecting statistical data, identifying competitors, and determining eligibility for government contracts or tax incentives. For the life science and biotech industry, there are five subsectors:

- Agricultural Feedstock and Industrial Biosciences
- Bioscience-related Distribution
- Medical Devices and Equipment
- Pharmaceuticals
- Research, Testing and Medical Laboratories

Within each of these subsectors, TEConomy used a careful process to account for the fact that some of the captured establishments are not truly biotech firms. (For example, under Research, Testing and Medical Laboratory, a lab technician doing clinical work for a physician would be counted alongside a lab technician doing research for a scientist.) These modifications are designed to ensure as accurate a depiction of the life science industry as possible. THBI has used TEConomy data to capture the economic benefit of the industry consistently since production of the report began more than 15 years ago to maintain a consistent source of data for the industry.

25 TEConomy / BIO, *The U.S. Bioscience Economy: Driving Economic Growth and Opportunity in States and Regions*, 2024.

There are other measures of the bioscience workforce, as different national, state and regional organizations use some or all these codes to measure the industry in their own jurisdictions. These organizations may be attempting to capture a specific aspect of the industry; they may also be working to capture the extended impact of the industry by including vendors and other partners who benefit from the industry. All these measures are valid and provide additional clarity regarding the true impact of the industry.

NAICS Codes by Subsector

Bioscience Subsector	NAICS Code
Agricultural Feedstock and Industrial Biosciences	311221
	311224
	325193
	325311
	325312
	325314
	325315
	325320
Pharmaceuticals	325411
	325412
	325413
	325414
Medical Devices and Equipment	334510
	334516
	334517
	339112
	339113
	339114
Research, Testing and Medical Laboratories	541380*
	541713*
	541714
	541715*
	621511
Bioscience-related Distribution	423450*
	424210*
	424910*

**Indicates only partial code is included.*

Industry Focus Groups

Since 2019, the life science and biotech industry in Texas has grown over 21%. Between 2021-2024, Texas' life sciences employers posted 155,045 unique job openings, reflecting steady demand26. That is an average of 38,000-44,000 postings per year during this time. This growth has generated concerns from many industry participants that development of the biosciences workforce should be more intentional and strategic. In 2025, THBI hosted four focus groups and approximately 30 interviews with CEOs and other C-Suite executives to collect feedback from THBI members and partners to get a better understanding of the strengths and challenges facing the industry. In these discussions, there was a lot of good news raised. There is no doubt Texas has a strong foundation for supporting the biotech industry.

Strengths in Biotech Workforce Development

- InnovATEBIO National Biotechnology Education Center: Works to advance the education of highly skilled technicians for the nation's biotechnology workforce; located at Austin Community College.
- Texas Regional Industrial Biomanufacturing Education Certification (TRIBEC): A growing multi-institution partnership organized by the National Center for Therapeutics Manufacturing (NCTM) to coordinate and expand opportunities for training in general manufacturing practices in the biosciences.
- San Jacinto College Center for Biotechnology at Generation Park: Offers stackable certificates and an Associate of Applied Science degree in biomanufacturing technology, along with shorter training options for postgraduates and industry professionals.
- Gulf Coast Consortium: An inter-institutional cooperative with a focus on building strong collaborative research groups and interdisciplinary training opportunities for PhD students and postdocs.
- Rice Professional Science Masters: Connects Master's-level students with industry contacts to facilitate mentoring and internship opportunities for students preparing to enter the workforce; in partnership with the Rice PSM Board of Affiliates.
- Biotechnology & Healthcare Industry Alliance of North Texas (BHIANT): Supports the development of a robust and resilient biotechnology and healthcare industry workforce and ecosystem.
- BioMedSA Life Science and Healthcare Career Education: A dynamic career education packet describing career path opportunities for the healthcare and biotech industry.

**Not an exhaustive list.*

26 Life Sciences Workforce Collaborative (LSWC), 2025 Life Sciences Workforce Trends Report, Life Sciences Industry Job Postings Data for Texas, 2025.

Texas' Approach to Workforce Development

The state of Texas approaches workforce development through a highly localized, industry-driven model led by the Texas Workforce Commission (TWC) and 28 Local Workforce Development Boards. Workforce development planning starts at the local level to identify priorities and initiatives that are tailored to the unique economic conditions of different regions across Texas, ensuring that local industries have access to the talent they need.

The Local Workforce Development Boards create regional plans for workforce development that include distribution and implementation of federal and state workforce funding programs, employment services, and collecting and evaluating data on the regional labor market. THBI engaged with several Local Workforce Development Boards during the industry focus groups and learned that for most industry participants, this was the first time they had heard of the local boards and their function.

Once regional plans are developed, the state works to align those plans with the state's educational resources using the Texas Workforce Investment Council and the Tri-Agency Workforce Initiative, which consists of the Texas Education Agency (TEA), Texas Higher Education Coordinating Board (THECB), and the Texas Workforce Commission (TWC.) This approach integrates education, training, and economic policy to create a responsive and inclusive workforce system with systemic partnerships to provide targeted training and career pathways.

Industry Career Pathways

The biotech and life science industry offers a variety of careers that span research, development, manufacturing, and commercialization, focusing on improving human health, agriculture, and the environment. Key roles include research scientists, lab technicians, bioprocess engineers, regulatory specialists, and data scientists, with growing demand in gene therapy, AI drug discovery, and clinical trials.

Within the life science and biotech industry, there are a diverse array of positions and roles at various levels of educational attainment that make for a long career pathway, and at each level, there are opportunities for high-wage jobs.

- **Agricultural feedstock and industrial biosciences subsector average annual wage:** $119,431
- **Medical devices and equipment subsector average annual wage:** $94,416
- **Research, testing, and medical laboratories subsector average annual wage:** $113,689
- **Pharmaceuticals average annual wage:** $123,068
- **Bioscience-related distribution average annual wage:** $134,377

Preparing a workforce for this diverse array of positions requires educational attainment at all levels.

Life Science and Biotech Professional Positions

→ *Roles Requiring Graduate Degrees*

- **Research Scientist (PhD/BS/MS):** conducts experiments, develops new products, and researches technologies like CRISPR and gene therapy.
- **Microbiologist:** studies bacteria, viruses, and cells to develop solutions in medicine or agriculture.
- **Bioinformatics Analyst/Data Scientist:** uses computational tools and AI to analyze complex biological datasets.
- **Bioprocess/Process Engineer:** designs and supervises the production processes for biotech products.
- **Patent Lawyer/Agent:** protects intellectual property related to new inventions.

→ *Roles Requiring at least a Baccalaureate Degree*

- **Clinical Trial Manager:** oversees the administration of clinical trials.
- **Regulatory Affairs Specialist:** ensures products comply with government laws and regulations.
- **Quality Control/Assurance (QC/QA) Analyst:** tests products to ensure they meet quality, safety, and regulatory standards.
- **Medical Sales Representative:** sells biotech products, equipment, and services to hospitals and clinics.
- **Project Manager:** coordinates teams and timelines for development projects.
- **Clinical Research Associate (CRA):** manages and monitors clinical trials to ensure safety and efficacy.
- **Environmental Health and Safety (EHS) Officer:** manages hazards in laboratories and industrial facilities.

→ *Roles Requiring Associate's Degree, Training Certification, or High School Diploma*

- **Laboratory Technician/Technologist:** prepares samples, runs lab tests, and manages laboratory equipment.
- **Manufacturing Associate/Technician:** executes, controls, and documents the production of pharmaceuticals, vaccines, or medical devices.
- **Cell Culture Technician:** grows and maintains living cells in bioreactors or flasks.

Secondary and Career and Technical Education (CTE)

Education institutions across Texas offer a broad array of programs to acquire a diploma, training certificate, or degree to prepare for a career in the life sciences. The process starts at the K-12 level by preparing students for a STEM-based education and offering CTE in biotech.

Texas is one of nearly ten states that has established curriculum standards for public high schools to offer training programs in biotech[27]. The Texas Essential Knowledge and Skills (TEKS) include Biotechnology I and Biotechnology II[28]. Over 30 high schools in Texas currently offer the curriculum. Students learn about basic laboratory safety and equipment and learn basic laboratory techniques, such as micro-pipetting, DNA extraction, gel electrophoresis, and polymerase chain reaction (PCR).

Texas High School Biotech Programs

Akins High School

All Saints' Episcopal School

Anderson High School

Ann Richards School for Young Women Leaders

Ball High School

Baylor College of Medicine Biotech Academy at Rusk

Cedar Ridge High School

Del Valle Opportunity Center

Dripping Springs High School

East View High School

El Campo High School

El Paso High School

Georgetown High School

Hanna Early College High School

Harmony Science Academy - Pflugerville

Hays Consolidated Independent High School District

IDEA San Benito College Prep

Irvin High School

Liberal Arts and Science Academy

LV Berkner High School STEM Academy

Maxine Silva Health Magnet High School

Nacogdoches High School

Navarro ECHS

Roosevelt High School

San Elizario High School

St. Michael's Catholic Academy

Technology, Exploration & Career Center East

Texas Academy of Biomedical Sciences

Veterans Memorial Early College High School

Young Women's College Preparatory Academy

Young Women's STEAM Research and Preparatory Academy

27 MiniPCR. https://www.minipcr.com/cte-course-biotechnology/

28 Texas Education Agency. 2023-2024 CTE Course Catalog: Career and Technical Education. August 2023.

Through InnovATEBIO National Center for Biotechnology Education, a local high school can acquire training and support to develop a biotech program, and the Texas Education Agency can provide funding for equipment and other support for CTE programs.

Texas is also home to over 60 Texas Science, Technology, Engineering and Mathematics (T-STEM) Academies. These academies are open-enrollment secondary schools focused on improving instruction and academic performance in science and mathematics-related subjects and increasing the number of students who study and enter STEM careers. The T-STEM Blueprint provides foundational principles and standards for innovative partnerships with colleges, universities, and industry.

Community Colleges

Texas is also home to eight community colleges with robust and growing biotech programs. A community college biotechnology program provides hands-on, industry-aligned training, typically offering two-year Associate of Applied Science (AAS) degrees and/or fast-track certificates. These programs prepare students for roles like lab technicians, quality control specialists, or bio-manufacturing technicians in fields such as pharmaceuticals, medicine, and research. Key aspects of these biotech programs include practical training, a curriculum focused on hands-on skills, and can involve cell culture, DNA analysis, HPLC, qPCR, CRISPR technology, and maintaining regulatory compliance (cGMP). Programs are required to have a local industry partnership, ensuring students are trained on the same equipment and techniques used in professional settings in that region.

Texas Biotech Programs

Austin Community College

Collin College

Dallas College

Del Mar College

Houston City College

Lone Star College Montgomery

McLennan Community College

National Center for Therapeutics Manufacturing at Texas A&M University

Rice University

San Jacinto College

Texas A&M University – Texarkana

READY TO ACCELERATE YOUR PROJECT AND PRODUCTION OUTCOMES?

When it comes to patient care, you shouldn't have to choose between quality, cost, and schedule. That's why we deliver operational readiness and excellence with a risk-based compliance approach that keeps you on budget while maximizing efficiency. From concept to execution, our expert guidance and field-tested processes streamline your path to compliant, high-quality healthcare.

Transform your operations AND your results — connect with us today at **CAIReady.com**, or scan the QR code below.

ARE YOU READY?

Private Sector Solutions

There are many organizations that provide private workforce training services across a variety of technical fields including training on good manufacturing practices. TechForce is a community of students, working techs, educators, industry and donors committed to helping people find a technical education and career that fits. Their mission is to champion students to and through their technical education and into careers as professional technicians. THBI-member CAI enhances workforce preparation through specialized talent acquisition, training and management, focusing on areas like IT and the life sciences. CAI provides end-to-end services, including on-the-job supervision, skill development, and customized staffing solutions to improve operational performance and readiness. Their life sciences training includes SOP-aligned, digital learning, and Knowledge, Skills, and Abilities (KSA)-based curricula to speed up training and ensure Good Manufacturing Practices (GMP) proficiency. Private training programs often issue certificates of proficiency related to specific skills and can help employers address training needs.

Industry sector partners also can provide additional support to the industry connecting jobs and job seekers. BioNTX created the Peer Career Connect Program (PCCP), a community-driven initiative for jobseekers navigating career transitions in life sciences and beyond. PCCP provides a space to learn, share, and grow alongside peers, exploring challenges, successes, and career journeys. PCCP works with jobseekers at all stages – from early-career professionals to seasoned executives – across industries, including aerospace, biopharma, digital health, logistics, engineering, research, and manufacturing, helping them find supportive peers and valuable connections.

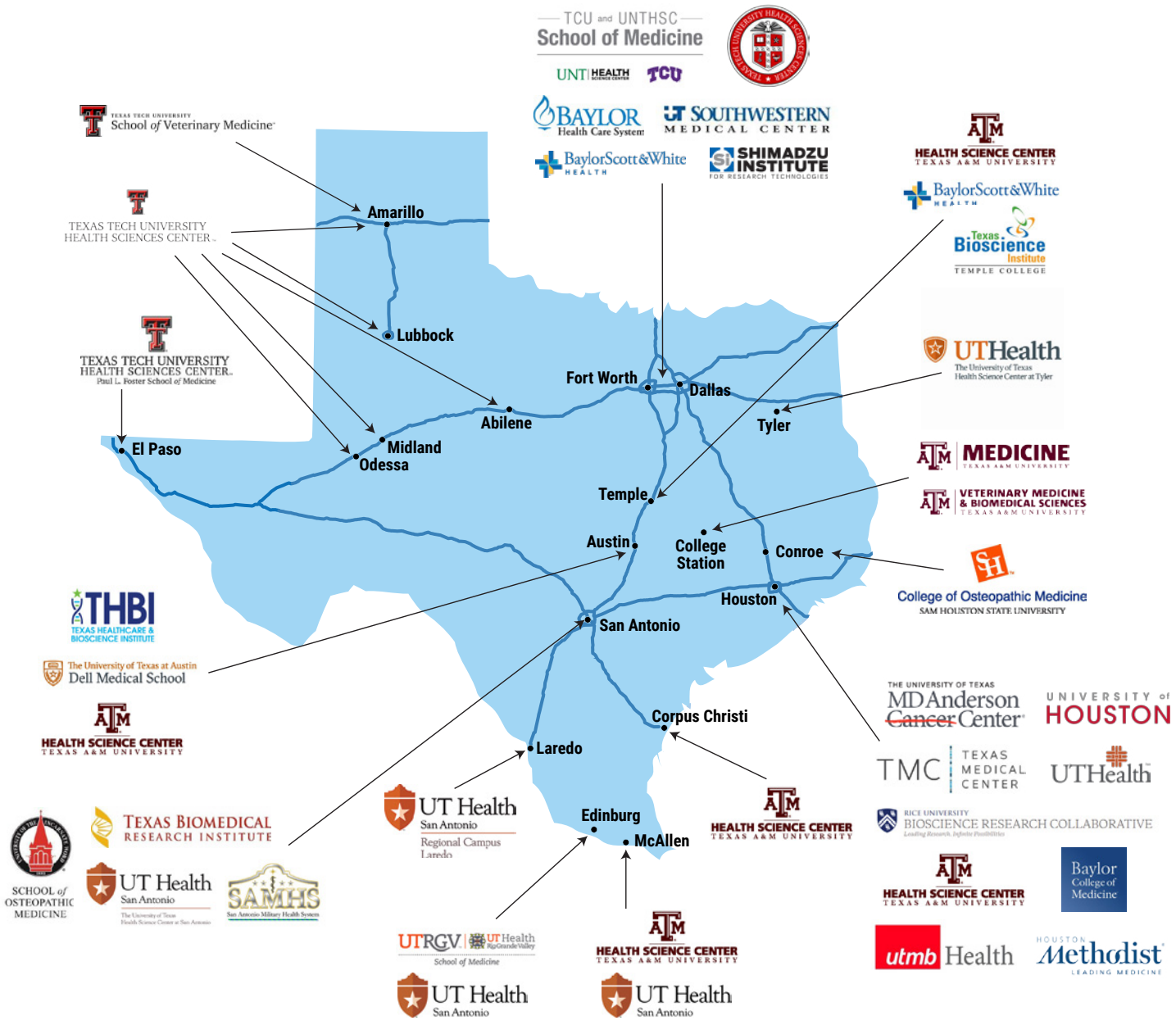
Institutions of Higher Education

Texas leads the nation in the number of research institutions. These programs are working to prepare the next generation of scientists and researchers to continue the development of products and innovations for patients. Texas also has a robust higher education system with institutions in every corner of the state working to educate Texans in industry-related fields. Texas is top-ranked for biotech-related doctorates, issuing nearly 900 in 2020. There is no doubt that Texas can readily supply life science companies with a highly skilled pool of talent[29].

Texas universities offer specialized graduate programs in pharmaceutical development, focusing on drug discovery, formulation, and manufacturing. Key programs include MSs and PhDs in Pharmaceutical Sciences at Texas A&M University, Texas Tech University, and the University of Texas at Austin, and often feature tracks in molecular pharmaceutics, drug delivery, and regulatory affairs. Biotechnology degree programs include Master of Science degrees at Texas Tech University and Texas A&M University. The University of Houston offers strong biotechnology degrees, and the University of Texas at Austin provides a specialized biotechnology certificate partnership with Austin Community College.

29 Office of the Governor, Texas Economic Development & Tourism Office. Texas Biotechnology and Life Sciences Report, June 2023.

MEDICAL SCHOOLS & SELECTED RESEARCH CENTERS



Texas is Top Tier for Biotech-Related Doctorates

The Science Foundation ranked Texas among the top 10 U.S. states for number of doctorates awarded in biotech-related fields:

#1	for agricultural sciences doctorates
#2	for health sciences doctorates
#2	for biomedical engineering doctorates
#3	for biomedical sciences doctorates

Texas Regional Industrial Biomanufacturing Education Certification (TRIBEC)

The Texas Regional Industrial Biomanufacturing Education Certification (TRIBEC) is a partnership organized by the National Center for Therapeutics Manufacturing (NCTM), a center within the Texas A&M Engineering Experiment Station (TEES), to coordinate and expand opportunities for training in general manufacturing practices in the bioscience, biotech, biomedical, and biomanufacturing space. In the biotech industry, hands-on training is critical to create the skilled workforce required to grow and support this industry. NCTM currently houses over $20 million worth of large-scale industrial equipment in its simulated current Good Manufacturing Practice (cGMP) training facility. These existing resources can greatly enhance training opportunities for biomanufacturing. The current TRIBEC partnership consists of a majority of the biomanufacturing education programs in Texas and continues to grow. TRIBEC is working to create a common curriculum for biomanufacturing education and training based on current industry standards and practices, and to stand up a comprehensive hands-on training opportunity across partner institutions that will allow for the sharing of valuable resources and providing the most up-to-minute training for those seeking careers in the industry.

Identifying Industry Workforce Challenges

When learning about the challenges facing the industry, certain themes and issues are consistently raised. The industry is no longer a hodgepodge of start-ups and emerging companies. To be successful, most organizations require partnerships, consultants, vendors, and an ecosystem of support to grow through their life cycle. To that end, workforce development also needs greater engagement and partnerships.

A consistently raised theme within the focus groups and interviews was simply a matter of awareness; people were not aware that certain resources existed. More effective identification and communication about the resources available will help promote and grow the industry.

- **Challenge –** The need for greater public awareness of life science, biotech, and bioscience careers and career pathways, starting at middle school and high school levels.
- **Challenge –** The need for greater awareness of biotech- and bioscience-related educational programs that already exist, and data related to the number of graduates at each educational level.
- **Challenge –** The need for more collaboration among educational programs to ensure that, as new manufacturing plants are brought online, a trained workforce can be prepared quickly and effectively.
- **Challenge –** The need for more information about state and federal funding sources and other resources related to workforce development for the industry.

There is an obvious need for a more formal engagement between industry, workforce planners, and academic institutions. Employers that engage with local workforce development boards can have a real impact on the workforce planning and resource allocation in their region. Local workforce boards work to ensure a region has a reliable talent pipeline that also addresses specific skill gaps and improves employee retention through tailored training programs. These partnerships enable businesses to influence training curricula, access vetted candidates, and reduce recruitment costs while fostering community engagement and diversifying their workforce

It is also important for industry participants, particularly employers, to build relationships with local academic institutions to ensure that a job-ready workforce is being prepared with the necessary industry skills. These relationships create a direct pipeline for talent, reduce recruitment costs, and ensure curricula alignment with current technology. They may also provide students with access to cutting-edge research and specialized, state-of-the-art facilities. Formal corporate partnerships can allow students to work on real-world problems, fostering practical hands-on experience.

- **Challenge –** The need for stronger relationships between industry and academic institutions so that curriculum, training, and degree programs are developed that align with industry standards and needs.
- **Challenge –** The need for stronger relationships between local workforce development boards and the life science and biotech community to maximize the use of training funds and other state resources to grow the life science workforce.

Increasingly, college students are balancing work and family and are seeking a higher return on investment from their education. Students are looking for career-focused, flexible, and personalized education that includes accessible support services, and look at higher education as a lifelong resource rather than a one-time, rigid, degree path. Higher education institutions are having to adapt to these new expectations, and many are creating innovative partnerships to facilitate the student journey.

> "The University of Texas at Austin and Austin Community College will **boost the number of college graduates** in Central Texas by allowing students to combine credits to earn an associate degree even if they transfer before community college graduation."[30]

Students are looking to earn credentials and skills that allow them to obtain a job and start earning a living, with a longer-term goal of earning additional credentials that advance their careers later in life.

30 The University of Texas at Austin. (2013, January 28). Austin Community College Partnership to Allow Transfer Students to Earn Associates Degree. UT News. https://news.utexas.edu/2013/01/28/austin-community-college-partnership-to-allow-transfer-students-to-earn-associates-degree/

Additionally, there is great uncertainty about how the use of artificial intelligence (AI) will impact careers.

- **Challenge –** The need for more partnerships between academic institutions that ensure a seamless educational pathway for students and workers, and the development of micro-credentials and other certifications that prepare students for jobs that allow them to earn as they learn while achieving higher credentials.
- **Challenge –** The need for a greater understanding of how AI can be used in the industry and what impact that will have on the workforce.

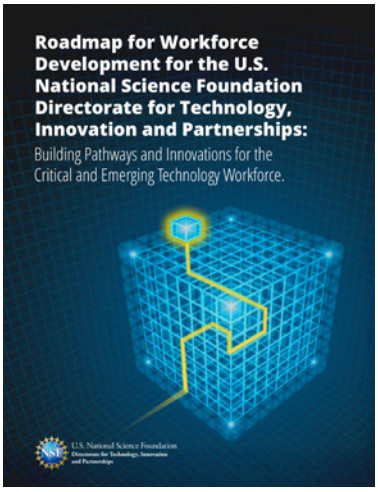
Building a workforce to serve the life science and biotech industry requires the effort of all the partners within the ecosystem. Both federal and state partners are also working to address this issue.

Roadmap for Workforce Development: Directorate for Technology, Innovation and Partnerships

In November 2025, the National Science Foundation (NSF) proposed a roadmap to offer an actionable agenda to invigorate and empower all Americans to join the workforce in critical and emerging technology sectors, including artificial intelligence, biotechnology and quantum technology. The Roadmap for Workforce Development for the U.S. National Science Foundation Directorate for Technology, Innovation and Partnerships addresses the need for a robust science, technology, engineering and math workforce with varied, extensive, technical and entrepreneurial skills that drive greater productivity and innovation in critical and emerging technologies. The roadmap is focused on building a resilient workforce ecosystem that fuels America's competitive edge in the years to come.

Roadmap for Workforce Development Strategic Goals:[31]

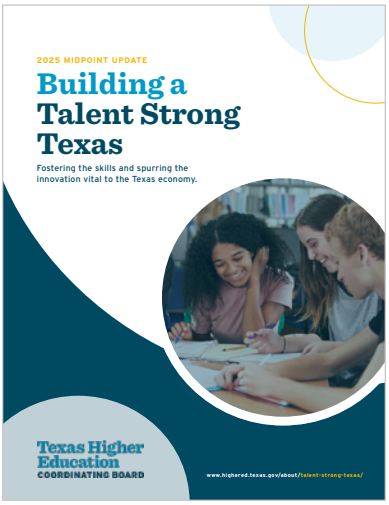
- Build cross-sector collaborations among industry, employers, educational institutions, government agencies, and nongovernmental organizations to better align workforce development with critical and emerging technology workforce needs.
- Invest in industry-informed workforce development that increases entry into, retention in, and advancement in critical and emerging technology careers.
- Accelerate the translation of educational technology innovation from research to practice for workers across all ages and educational pathways.



31 National Science Foundation, The Roadmap for Workforce Development for the U.S. National Science Foundation Directorate for Technology, Innovation and Partnerships: Building Pathways and Innovations for the Critical and Emerging Technology Workforce, 2025.

Together, these efforts will open new career opportunities for individuals and empower workers to succeed in transformative technology fields, unleashing the full potential of the nation's workforce to secure a competitive edge in critical and emerging technologies.

Building a Talent Strong Texas



The Texas Higher Education Coordinating Board (THECB) is working to expand the workforce in Texas. The agency's strategic plan, Building a Talent Strong Texas, is midway through the goals set in the ten-year plan. Texans are earning more degrees, certificates, and credentials than ever before, and the state now has more jobs and a larger workforce than at any point in history. As the pace of change accelerates, AI and other forces will constantly impact how students acquire a post-secondary education, and Texas institutions of higher education will continue to work to meet these new and evolving challenges.

The Texas bioscience workforce is vital to the state's economy, supported by education, industry partnerships, and workforce initiatives. Growth in biotech highlights the need for stronger collaboration among academia, industry, and workforce boards to align training, expand awareness, and prepare skilled talent for emerging life science and technology careers. The following recommendations are solid next steps for THBI, for state and regional partners, and for industry participants to help reinforce the biosciences workforce in Texas.

Pillar 3 – Workforce Recommendations:

RECOMMENDATION: Develop and distribute engaging materials that showcase and explain career opportunities within the life sciences and biotechnology sectors, with a particular focus on reaching middle and high school students.

RECOMMENDATION: Enhance and expand the Texas Regional Industrial Biomanufacturing Education Certification (TRIBEC).

RECOMMENDATION: Simplify the transfer of educational credentials between institutions and reduce duplication of effort to simplify the attainment of skills and degrees and create an ongoing forum to share best practices that facilitate these goals.

RECOMMENDATION: Enhance and expand engagement between industry and academic institutions.

RECOMMENDATION: Enhance and expand engagement between industry and local workforce development boards and regional economic development partners.

RECOMMENDATION: Support and participate in the Roadmap for Workforce Development for the NSF TIP.

RECOMMENDATION: Support and continue to partner with the Texas Higher Education Coordinating Board (THECB) to support Building a Talent Strong Texas.

PILLAR 4

INFRASTRUCTURE

All businesses must have a reliable, extensive infrastructure, which is critical to supporting continued population and industry growth. The Statewide Economic Development Strategic Plan identifies several strategies to support the development of infrastructure that is equipped to meet community and industry needs.

Texas serves as a major gateway for global trade due to its vast network of highways, railways, ports, and airports. The state's broadband and energy infrastructure link communities and facilitate commerce. Continued investment and adaptation of infrastructure are essential for Texas' long-term economic resilience and prosperity. For life science and biotech companies, infrastructure encompasses those same elements. Physical infrastructure must support the broad distribution of products and services to maintain a strong supply chain for life saving products and services.

One of Texas' key assets is the Dallas-Fort Worth International Airport, which was the first in North America to earn the IATA Center of Excellence for Independent Validators (CEIV) pharma supply chain community certification. It is part of Texas' massive rapidly growing cold-chain infrastructure, which serves as a premier, high-volume logistics center for pharmaceutical and perishable goods. This certification ensures the highest standards in temperature-sensitive pharmaceutical handling and positions the region as a top-tier national cold-chain hub.

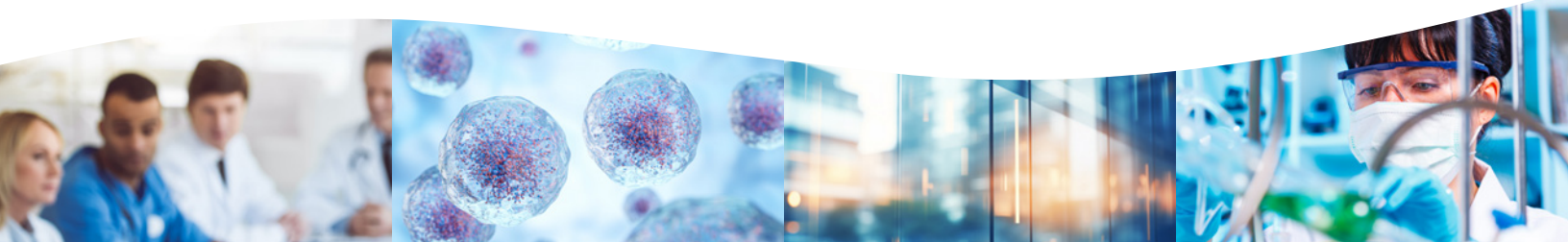
Connectivity
DFW's central location provides easy access across the country and around the world.

Travel anywhere in the continental U.S. within **four hours**

plus access to **75+** direct international destinations

Home to nation's **2nd-largest** cold chain storage hub and one of two IATA CEIV pharm supply chain communities

Virtual connectivity or broadband is fundamental for biotech and life sciences. Today, data is one of the most critical, foundational assets in modern biotechnology, acting as the lifeblood that fuels research, correlates and protects patient information, and makes AI-driven drug discoveries, genomic research, and personalized medicine possible. Data enables companies to analyze vast biological datasets to identify drug targets, optimize clinical trials, and improve patient outcomes. Data accelerates R&D, ensures regulatory compliance, and enables predictive modeling in drug development.



Key Roles of Data in Biotechnology:

- Drug Discovery and Development
- Genomics and Personalized Medicine
- Clinical Trial Optimization
- Real-World Evidence and Post-Market Surveillance
- AI and Machine Learning Integration
- Operational Efficiency and Data Governance

Biotech companies that leverage data effectively can better navigate complex product development processes, reduce costs, reduce timelines, and expand access to innovations for patients.

Biotech innovation also requires supportive infrastructure with the capabilities and flexibility to ensure there is a viable pathway from the research lab through the manufacturing process to the marketplace. Business support systems such as incubators, technology transfer programs, facility-sharing, venture capital, and commercialization efforts are also key aspects for growing the industry. These resources currently exist throughout the state in each region, having developed both privately and at public institutions, growing organically from within each regional ecosystem. Early-stage companies can find the knowledge and resources to support them in every market in Texas through a combination of public and private organizations, starting with the Texas Resource Guide.

Physical lab space is also an important infrastructure needed for life science and biotech companies. In recent years, Texas has been experiencing a surge in life sciences property development, focused on creating specialized, collaborative hubs in major metro areas to support startups and manufacturing.

IN THE NEWS

NEWS RELEASE

Lilly plans to build a new $6.5 billion facility to manufacture active pharmaceutical ingredients in Texas

"For every dollar Lilly spends in the area, Lilly estimates up to an additional four dollars in local economic stimulation."

Full article here ↗

Major Texas Life Sciences Developments

- **Houston (TMC & Levit Green):** The 37-acre TMC Helix Park is a major focal point for research and collaboration. Additionally, the 53-acre Levit Green development, completed in 2023, is adding 290,000 square feet of lab and biomanufacturing space.
- **Dallas-Fort Worth (Plano & Pegasus Park):** The Texas Research Quarter in Plano is a massive 200-acre project designed for over 4 million square feet of lab, office, and production space. Pegasus Park in Dallas offers 26 acres with 135,000 square feet of "Bridge Labs" for specialized high-growth established companies.
- **Austin & Round Rock:** The region is expanding with projects like the 100,000-square-foot expansion by Enovis in Cedar Park. In Austin, Highpoint is a visionary mixed-use redevelopment by Karlin Real Estate that reimagines a former 3M lab into over a million square feet of leading-edge lab and office space spanning 156 acres. Texas State University and Concept Companies are partnering to develop a life sciences incubator at Texas State University's Round Rock Campus.

These projects are just a sampling of the infrastructure developments being made to support the life science industry from both the public and private sectors. Having expandable and appropriate physical plant space is necessary to support comprehensive, self-sustaining bioscience ecosystem from research to production.

Industrial biotechnology presents an additional infrastructure challenge due to the commercial, industrial-scale production process used. Bio-industrial manufacturers use microbes and enzymes in traditional manufacturing processes to produce cleaner, more sustainable products and materials. Houston's bio-industrial sector is a rapidly growing hub for cell and gene therapy, biomanufacturing, and biologics R&D.

Recent Bio-Industrial Announcements:

- Houston's Cauldron Awarded $1.76M from U.S. Department of Defense to plan U.S. Facility
- BioWell Assumes Control of Texas BioTechnology's Pilot Facility to Address Biomanufacturing Gaps

Growing Recognition and Infrastructure Investment

Global Location Strategies, a leading site selection and incentive negotiation firm for manufacturing and industrial companies, issued a report, 2026 Best Places for Pharmaceutical Manufacturing – Therapeutic Biologics Edition, ranking the best locations for pharmaceutical manufacturing in the United States. The report considers an ideal location for pharmaceutical manufacturing one that balances workforce strength, innovation, infrastructure, and cost efficiency. Regions with favorable business environments, streamlined permitting, and competitive operating costs further enhance attractiveness.

The report emphasizes that biological manufacturing facilities have a transformative economic and strategic impact. Once established, these plants rarely relocate due to strict FDA approvals, creating long-term economic anchors for their host communities. They generate high-value STEM employment, attract supplier networks, and stimulate innovation ecosystems. Each facility strengthens local resilience by enhancing national supply chain security and supporting public health preparedness. Successful regions actively invest in workforce development, infrastructure, and collaboration between industry and academia, ensuring readiness to capture high-value biopharma projects and sustain growth in the evolving life sciences economy.

The report includes three regions in Texas as being among the most competitive and fast-growing regions for biologics manufacturing in the United States. Houston-Pasadena-The Woodlands MSA and Dallas-Fort Worth-Arlington MSA both ranked among the national top ten. Additionally, the Austin-Round Rock-San Marcos MSA was identified as a strong "Preferred Locations in the composite analysis.

Houston-Pasadena-The Woodlands ranked seventh, standing out for its combination of strong biopharmaceutical capabilities and cost-competitiveness. According to the report, Houston benefits from some of the nation's lowest electricity and natural gas rates, a major advantage for energy-intensive biologics operations. Its ecosystem is anchored by world-class institutions such as MD Anderson Cancer Center, Baylor College of Medicine, and the University of Houston, which drive research, workforce development, and translational innovation. The region also ranks high for its innovation ecosystem and logistics infrastructure. The report cites Eli Lilly's $6.5 billion facility at Generation Park as evidence of Houston's growing biomanufacturing profile.

Dallas-Fort Worth-Arlington ranked eighth, earning the highest logistics score among all benchmarked metros, thanks to its extensive cold-chain network and global connectivity via DFW International Airport. The region's innovation ecosystem benefits from regional leader UT Southwestern Medical Center and will be further strengthened by the planned $4 billion Texas Research Quarter in Plano. which is designed for advanced R&D and cGMP biomanufacturing. DFW combines a large biopharma workforce, low utility costs, and a business-friendly environment, making it one of the most attractive large metros for biologics investment.

Austin-Round Rock-San Marcos was identified as one of the "Preferred Locations" for therapeutic biologics manufacturing, ranking 17th in the report. The report notes that Austin is one of six metros that, while not in the top ten, still offer a strong balance between quality and cost, making them

competitive alternatives to the highest-ranked and highest-priced hubs. The region is considered a growing life sciences ecosystem that benefits from Texas' favorable business environment, including low energy costs and pro-business tax policies. The metro's workforce and innovation infrastructure are developing rapidly, supported by the region's broader technology and advanced manufacturing base.

Overall, Texas is a biomanufacturing powerhouse, offering a blend of affordability, infrastructure strength, and expanding life sciences ecosystems that position it as a national leader in therapeutic biologics production.

The last few years have seen an unprecedented number of announcements of investments in developing pharmaceutical manufacturing. According to We Work for Health, since January 2025, biopharmaceutical companies have committed more than $582 billion to bolster U.S. research and development, expand manufacturing, and create jobs in communities nationwide.[32] Texas is seeing a significant part of that action.

IN THE NEWS

THE DALLAS MORNING NEWS

Pharma giant nabs incentives for $280 million Denton Manufacturing Plan

Full article here ↗

Throughout 2025, major worldwide manufacturers have agreed with this analysis, announcing major expansions in Texas. In April, Novartis indicated a significant investment in Denton. Astra Zeneca invested $46 billion to expand their existing facility in Coppell. In September, Eli Lilly announced a new $6.5 billion next-generation synthetics facility in the Houston region.

These projects will bring with them additional investments and support a number of affiliated Texas businesses and vendors that will ultimately provide services to these facilities. This will not only raise the profile of Texas as a biotech hub but will strengthen the whole ecosystem and dramatically catapult future growth.

Infrastructure Strengths and Challenges

Partnership is the key to addressing the strengths and challenges that impact the infrastructure supporting the life science and biotech industry in Texas. Statewide organizations like the THBI and the Texas Association of Manufacturers (TAM) must work with state leaders across state government to quickly identify challenges and develop creative solutions to address them.

Regional partnerships are also important to facilitate the ongoing growth of the industry. Bio regional partners like BioNTX and BioHouston are forming systems partnerships across their regions to facilitate workforce development and business development for the industry. BioMedSA has recently launched a new resource platform designed to assist biotech, med-tech, and pharma startups with an easy-to-follow guide mapping critical players, experts, and assets across the entire development process - from early discovery to commercialization - addressing the needs of founders to navigate complex ecosystems.

Across Texas, communities are working with their local economic development partners to ensure local infrastructure is adaptable and resilient to meet the needs of industry. The following recommendations are solid next steps for THBI, for state and regional partners, and for industry participants to help reinforce the biosciences infrastructure in Texas.

32 We Work For Health. Invest in America. More than $582 Billion in New U.S. Investment Since 2025. https://www.weworkforhealth.org/investinamerica

Pillar 4 – Infrastructure Recommendations:

RECOMMENDATION: Strengthen Texas' leadership in biotechnology and life sciences by fostering deeper collaboration between government, academia, and industry.

RECOMMENDATION: Support initiatives that modernize research infrastructure, expand access to advanced technologies such as AI and automation, and streamline pathways from discovery to commercialization.

RECOMMENDATION: Encourage policies that promote secure data sharing, workforce development, and equitable access to research opportunities across all regions of Texas regions to ensure sustainable innovation and global competitiveness.

IN THE NEWS

NEWS RELEASE

AstraZeneca opens expanded manufacturing facility in Texas

"The expansion underscores our commitment to patients and support for Texas' long-term vision for scientific growth and innovation."

Full article here ↗

CONCLUSION

Texas has rapidly emerged as one of the most dynamic biotech hubs in the United States, driven by a powerful combination of world-class research institutions, a thriving startup culture, and strong public and private investment. Anchored by cities like Houston, Austin, Dallas-Fort Worth, and San Antonio, the state's biosciences ecosystem benefits from a unique blend of academic excellence, entrepreneurial energy, and a collaborative spirit that fuels innovation across biotechnology, medical device development, pharmaceuticals, and life sciences.

The Texas Medical Center in Houston - the largest medical complex in the world - serves as a cornerstone of this ecosystem, fostering groundbreaking research and clinical advancements. Meanwhile, Texas' colleges and universities are producing top-tier talent and pioneering discoveries that translate into real-world solutions. This synergy between academia, industry, and government has positioned Texas as a magnet for biotech investment and innovation.

Investing in the biosciences ecosystem is not just an economic opportunity, it is a strategic imperative. This sector drives high-value job creation, attracts global partnerships, and strengthens the state's resilience in addressing health challenges. As biotechnology continues to redefine medicine, agriculture, and environmental sustainability, Texas stands at the forefront of shaping the future.

Collaboration is the key to sustaining this momentum. By connecting researchers, entrepreneurs, investors, and policymakers, Texas can accelerate the translation of ideas into impactful therapies and technologies. Shared resources, open innovation, and cross-sector partnerships ensure that breakthroughs move from the laboratory to the marketplace faster and more efficiently.

In a world where scientific progress depends on collective effort, Texas exemplifies how collaboration and investment can transform potential into progress - making the state not only a biotech hub, but a global leader in the biosciences revolution.

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