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Making the impossible possible.

The U.S. Bioscience Industry:

A Powerful Engine for State Economies

Bio
Where breakthroughs begin

CSBA
Council of State Bioscience Associations

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INTRODUCTION

The U.S. bioscience industry remains a cornerstone of national strength – driving innovation, creating high-value jobs, and powering growth across every region of the country. Spanning fields from pharmaceuticals and medical devices to agricultural biotechnology and research and testing, this dynamic sector not only delivers life-saving innovations but also fuels long-term economic vitality and industrial diversification.

That vitality is realized at the state and regional level, where the biotech industry has become a strategic focus for economic development. Through targeted policy measures – such as research and development tax credits, biomanufacturing investment incentives, and workforce-training programs – states are laying the foundation for sustained growth and global competitiveness.

The opportunity ahead is substantial. According to Investopedia, the bioscience product market is projected to grow from $1.7 trillion in 2025 to over $5 trillion by 2034, an annual growth rate of 12.5%. This growth trajectory is prompting state and local economic development leaders to act decisively – adopting policies that attract investment, strengthen supply chains, and expand high-wage employment.

To support these efforts, this eighth biennial national report highlights the dynamic ecosystem of strategic policy, programs, and partnerships that continue to translate cutting-edge science into testing, commercialization and manufacturing for markets around the world.

Even during the economic downturn of 2020-2022, the bioscience industry actually grew and its advancements continued into 2023, providing ample awareness to state and local stakeholders that bioscience companies are an important component of gathering people, developing ideas, and bringing prosperity to states, cities, and municipalities with the industry in their community.

In its 7th edition, this report reviews the latest state and regional economic development measures that support the bioscience industry, or life science industry. The analysis is developed by the Biotechnology Innovation Organization (BIO), in partnership with the Council of State Bioscience Associations (CSBA), to highlight noteworthy public policy strategies and programs to assist policy leaders and their industry partners in identifying new measures that enhance the future prospects of the bioscience industry in their states and regions.

Utilizing an analysis of current state public policy efforts to support the the bioscience industry, the authors have identified three consensus strategies that states have created to retain the industry and grow the size and diversity of all of its sectors across the states:

Fueling Growth Through Strategic Incentives

States increasingly recognize the powerful return on investment that comes from fostering a thriving bioscience ecosystem. Central to that success is the implementation of targeted financial incentives – especially research and development tax credits, investment incentives for facilities and equipment, and job-creation programs.

These measures reduce the financial barriers for startups and growth-stage firms navigating the long, capital-intensive research cycle. In doing so, they help attract new companies, expand existing ones, and strengthen a state's broader economic base.

Cultivating a Skilled Workforce

The success of the bioscience industry ultimately depends on the people behind it. Recognizing this, many states have implemented comprehensive workforce development programs tailored to the sector's specialized needs. These initiatives – often partnerships among government, higher education, and private industry – create a continuous talent pipeline, from K-12 STEM education and community-college certificates to advanced degrees and professional training.

By aligning educational curricula with industry demands, states ensure graduates are equipped with the technical and analytical skills required for biomanufacturing, laboratory research, and clinical development. This proactive approach not only meets the immediate needs of bioscience companies, but also opens sustainable career pathways for residents.

Venture Capital: Venture capital investment in biopharma saw a rebound in 2024, reaching $26 billion, up from $23.3 billion in 2023.

The Power of Collaboration: Public-Private Partnerships

The complex and capital-intensive nature of bioscience innovation makes collaboration essential. The most successful state and regional ecosystems are built on strong public-private partnerships that unite universities, research institutions, government agencies, and private companies around shared objectives. These supportive alliances can take many forms:

- **University-Industry Collaborations:** Universities are often the epicenters of foundational research. Partnerships with private companies help to translate that research into commercially viable products and therapies. These collaborations include joint research projects, technology licensing agreements, and the creation of incubators and accelerators that give startups access to space, resources, and mentorship to help them grow.
- **Government-Industry Partnerships:** State and federal agencies, such as the National Institutes of Health (NIH), routinely partner with bioscience companies to advance research in critical areas of public health. These collaborations provide funding, regulatory guidance, and access to valuable research resources.
- **Inter-Company Alliances:** Partnerships between established pharmaceutical companies and emerging biotech firms are also common and vital. By combining scale with agility, these partnerships foster the exchange of expertise and resources, reduce risk, and accelerate the development of new therapies and technologies.

Through these interconnected strategies – targeted incentives, workforce development, and robust collaboration – states are cultivating an environment where the bioscience ecosystem thrives and provides substantial economic and societal benefits. In doing so, they are not only strengthening local economies, but also reinforcing America's leadership in bioscience innovation for decades to come.

2026 State and Regional
POLICY GUIDE FOR GROWTH

To foster a thriving bioscience industry in 2026 and beyond, state and regional policymakers continue to refine their efforts to support industry growth, and have come to realize that the one-size-fits-all approach is not as effective as a strategy that creates a supportive ecosystem that understands the phase of development from initial discovery stages to full-scale commercialization.

Phase 1: Discovery & Seed Stage

This is the birth of a bioscience company, often starting within a university lab or as a small spin-out. The primary focus is on foundational research, validating a scientific concept, and securing intellectual property.

- **Company Profile:**
  - **Focus:** Proof-of-concept research, patent filing.
  - **Team:** 1-5 people (researchers, founders).
  - **Funding:** Primarily from non-dilutive sources like government grants (NIH, NSF) and small seed investments.
  - **Key Challenge:** High scientific risk and lack of access to capital and expensive, specialized lab equipment ("wet labs").
- **Matching Policies:**
  - **Grant Matching Programs:** State funds that match federal Small Business Innovation Research (SBIR)and Small Business Technology Transfer (STTR) grants, effectively doubling a company's initial funding.
  - **University Tech Transfer Support:** Robust funding for university Technology Transfer Offices (TTOs) to streamline patenting, licensing, and spin-out creation.
  - **Subsidized Incubators:** State-supported incubators and accelerators that provide affordable, shared wet lab space, mentorship, and critical business development training.
  - **Proof-of-Concept Funds:** Small, state-managed seed funds that provide the initial high-risk capital needed to bridge the gap from research grant to private investment.

Public Company Revenue:
In 2024, the revenue for public bioscience companies in the U.S. grew 6.8% year-over-year to $205 billion.

Phase 2: Early Stage & Venture Capital

Once a concept is proven, the company enters an early stage where it must conduct preclinical studies, develop prototypes, and navigate regulatory pathways. This phase requires significant private investment to build the team and generate critical data.

- **Company Profile:**
  - **Focus:** Preclinical/early clinical trials, product development, building a management team.
  - **Team:** 5-25 employees.
  - **Funding:** Angel investors, Series A/B venture capital.
  - **Key Challenge:** Attracting sufficient venture capital, a process often called crossing the "Valley of Death" where many promising technologies fail due to lack of funding.
- **Matching Policies:**
  - **State Venture Capital Programs:** A "fund-of-funds" model where the state invests in private VC funds with the requirement that they invest a portion of that capital into local bioscience companies. This attracts professional investment management to the region.
  - **Angel Investor Tax Credits:** Provides a state tax credit to individuals who invest in qualified local startups, incentivizing local high-net-worth individuals to become angel investors.
  - **R&D Tax Credits:** A refundable state tax credit for research and development expenditures, which provides crucial non-dilutive cash flow to pre-revenue companies.
  - **Workforce Development Grants:** Funding for community colleges and universities to create certificate programs for in-demand roles like lab technicians and clinical research associates.

Phase 3: Growth & Expansion Stage

In this phase, the company has a viable product candidate and is focused on scaling its operations. This includes late-stage clinical trials, building out manufacturing capabilities, and preparing for commercial launch.

- **Company Profile:**
  - **Focus:** Scaling manufacturing, commercialization, market entry.
  - **Team:** 25-100+ employees.
  - **Funding:** Later-stage venture capital (Series C+), strategic partnerships, early revenue.
  - **Key Challenge:** Securing large-scale manufacturing space, navigating complex supply chains, and hiring a skilled workforce at scale.
- **Matching Policies:**
  - **Economic Development Incentives:** Performance-based grants and tax abatements for building new headquarters, research facilities, or biomanufacturing plants.
  - **Infrastructure Investment:** Public investment in developing specialized "bio-parks" with the necessary zoning, utilities (high-capacity power, water), and transportation links.

Massive U.S. Economic Footprint: In the U.S. alone, the bioscience industry's total economic impact (as measured by overall output) exceeded $3.2 trillion in 2023, supporting a large number of direct and indirect jobs.

- **Supply Chain Initiatives:** Programs that map local supply chain assets and connect growth-stage companies with regional suppliers for reagents, components, and contract manufacturing services.
- **Training and Recruitment Programs:** State-level marketing campaigns and incentives aimed at attracting experienced senior-level talent from established biotech hubs.

Phase 4: Maturity & Commercialization

Mature companies are established players with products on the market. Their focus shifts to expanding market share, M&A activity, and fostering the next generation of innovation to ensure long-term growth.

- **Company Profile:**
  - **Focus:** Market expansion, profitability, pipeline renewal.
  - **Team:** Large, established workforce.
  - **Funding:** Public markets (IPO), corporate profits, debt financing.
  - **Key Challenge:** Retaining top-tier executive talent and fostering a culture of continued innovation.
- **Matching Policies:**
  - Site and Infrastructure Grant Funds
  - Renewable Energy Tax Credits and Utility Rebates
  - Manufacturing Equipment Sales and Use Tax Discounts, Exemptions and Refunds

U.S. Bioscience Industry
ECONOMIC IMPACTS 2023-2024

The U.S. bioscience industry has maintained its long-term growth trend and continues to generate high-quality, high-wage jobs that drive significant and growing economic impacts for the nation.

Highlights from the latest TEConomy national industry analyses include:

In 2023-2024, bioscience companies employed 2.3 million Americans across nearly 150,000 individual business establishments with a footprint in every U.S. state.

The industry has maintained its long-term growth trend with employment increasing by nearly 15 percent since 2019, well outpacing the nation's overall private sector job growth during this period that includes the global pandemic and subsequent economic recovery.

- The bioscience industry continues to employ a highly-skilled and STEM-intensive workforce that is reflected in its high-wage jobs. In 2023 the average U.S. bioscience worker earned more than $132,000 per year, which is $60,000 or 83 percent more than the nation's private sector average.
- The industry's skilled workforce continues to drive innovation and create value which is reflected through the sector's economic impacts.
- The total economic impact of the bioscience industry on the U.S. economy, as measured by overall output, totaled more than $3.2 trillion in 2023.
- The industry generated and supported $1.68 trillion in value added in 2023, accounting for 6.8 percent of U.S. private sector GDP.
- The industry's nearly 2.3 million employees and their associated economic output support nearly 8.0 million additional jobs throughout the economy through indirect and induced effects.
- Bioscience industry impacts are growing, compared with those measured in 2021, the industry's total economic impacts have increased by $350 million, or 12 percent over the 2-year period.
- In addition, the bioscience industry generated in 2023-2024:
  - Direct Impact 2.3M Jobs
  - Labor Income $881.9 Billion
  - Indirect Bioscience Industry Employment 10.3M Jobs
  - Total 2024 Economic Output $3.2 Trillion
- Additional Tax Revenue Impacts:
  - State and Local Tax Revenue: $50.3 Billion
  - Federal Tax Revenue: $216 Billion

**Source: TEConomy Partners data and analysis using IMPLAN Input-Output Models*

Commercial Applications for Bioscience
JOB CREATION AND PRODUCT DEVELOPMENT

The bioscience industry not only generates significant economic value, it provides a variety of job opportunities

across a number of commercial applications that illustrate the many ways a person can successfully participate in this growing technology sector.

1. **Medical Care:** Bioscience tools and techniques open new research avenues for discovering how healthy bodies work and what goes wrong when problems arise. In human health care, biotechnology products include quicker and more accurate diagnostics tests and therapies with fewer side effects because they are based on the body's self-healing capabilities.

   - **Medicines** – Bioscience medicines assist the body in fighting infections or carrying out specific functions and uses other living organisms – plant and animal cells, viruses and yeasts – to assist in the large-scale production of medicines for human use. Some new medicines approved by the FDA include treatments for anemia, cystic fibrosis, growth efficiency, hemophilia, leukemia, hepatitis, transplant rejection and many forms of cancer.

   - **Vaccines –** A vaccine consists of the antigen, not the actual microbe. By isolating antigens and producing them in the laboratory, it is possible to make new vaccines that cannot transmit the virus itself.

   - **Diagnostics –** Biotechnology has revolutionized the medical diagnostics field by providing accurate and relatively inexpensive tests for a wide spectrum of diseases (e.g., blood screening test for cholesterol, HIV, etc.) as well as for consumer products, such as home pregnancy tests.

   - **Gene Therapy –** Gene therapy uses the genes themselves as drugs to treat hereditary genetic disorders.

2. **Agricultural Production:** Humanity has always relied on living things for food, shelter, clothing, and fuel. Our demand for these resources will increase as the world's population grows. In 1900, the global population was approximately 1.6 billion. This number has surged to over 6 billion today,and the United Nations expects the global population will reach 10 billion by 2030. Agricultural biotechnology can help humanity meet ever-increasing need by increasing yields, decreasing water and fertilizer usage, and provide for pest control methods that are more compatible with the environment.

   - **Crop Plant Production –** Farmers and breeders have relied for centuries on crossbreeding and other genetic modification techniques to improve the yield and quality of crops. The tools of biotechnology allow plant breeders to select single genes that product desired traits and move them from one plant to another, thus opening a world of traits to benefit food production.

   - **Environmental Benefits of Crop Production –** New biotechnology diagnostics tools detect plant diseases earlier and more accurately, decreasing the amount of chemicals needed to control the disease.

- **Plant-Made Pharmaceuticals –** With biotechnology scientists now use transgenic plant2 as manufacturing plants for pharmaceutical compounds, making plant- produced antibodies 25 to 100 times less expensive than cell fermentation methods.
- **Livestock Production –** Improvements in biotechnology research has fostered enhanced abilities to detect, treat and prevent diseases from better feed derived from transgenic crops designed to meet the dietary needs of different farm animals.

3. Industrial and Environmental Applications:

The bioscience industry employs the techniques of modern molecular biology to reduce the environmental impact of manufacturing and can best be characterized by the reduction or elimination of waste and low consumption of energy. Industrial and environmental biotechnology also works to make manufacturing processes more efficient for industries such as textiles, paper and pulp, and specialty chemicals.

- **Industrial Manufacturing Processes –** Biotechnology offers many options for minimizing the environmental impact of manufacturing processes by decreasing energy use and replacing harsh chemicals with biodegradable molecules produced by living plants and organisms.
- **Green Plastics -** Replacement of petroleum- derived polymers with biological polymers derived from grain or agricultural biomass is another environmentally-friendly aspect of biotechnology applications.
- **Environmental Monitoring and Remediation –** The techniques of biotechnology science are providing novel methods for diagnosing environmental problems and assessing normal environmental remediation. The remarkable ability of microbes to break down chemicals is proving useful not only in pollution remediation but also in pollutant detection.

4. Other Applications:

- **DNA Fingerprinting –** In its simplest form, DNA fingerprinting is the process of cross-matching two strands of DNA to establish paternity. Comparing the different-sized DNA fragments of two samples provides very strong evidence about whether or not the two samples come from a single source or individual.
- **Space –** Biotechnology has aided NASA to solve some of the toughest problems holding back space exploration, such as putting heavy objects into outer space, controlling spacecraft and explorer modules from the Earth, and developing energy-efficient ways to feed astronauts and keep them safe and healthy while they are far from home.
- **Domestic Animal Health –** The Center for Veterinary Biologics at the USDA has licensed more than 90 veterinary biotech products, including therapeutics for horses, a vaccine for feline leukemia, and gene-based drugs and vaccines to treat arthritis, infectious diseases and cancer in companion animals.

U.S. companies accounted for 40% of the global biotechnology market revenue in 2024.

Supportive 2025 **STATE TAX INCENTIVES FOR INDUSTRY DEVELOPMENT**

The data below summarizes four updated 2025 economic-development measures across states that support bioscience companies from early stage through testing and biomanufacturing. And through these types of strategic legislative actions, each of those measures enhance opportunities to capture and enhance a bioscience industry ecosystem that generates high-skill jobs and quality of life where the industry is located.

State	SBIR Matching Grant	Angel Investor Tax Credit	Manufacturing Sales and Use Tax Exemption	R&D Tax Credit
Alabama	■		■	
Alaska	■	■		■
Arizona		■	■	■
Arkansas	■		■	■
California			■	■
Colorado		■	■	■
Connecticut		■	■	■
Delaware	■			■
Florida	■		■	■
Georgia		■		■
Hawaii	■	■	■	■
Idaho			■	■
Illinois	■	■	■	■
Indiana	■	■	■	■
Iowa	■	■	■	■
Kansas		■	■	■
Kentucky	■	■	■	■
Louisiana	■	■	■	■
Maine		■	■	■
Maryland	■	■	■	■
Massachusetts	■	■	■	■
Michigan	■		■	■
Minnesota	■	■	■	■

State	SBIR Matching Grant	Angel Investor Tax Credit	Manufacturing Sales and Use Tax Exemption	R&D Tax Credit
Mississippi			■	■
Missouri			■	■
Montana	■			
Nebraska	■	■	■	■
Nevada				
New Hampshire				■
New Jersey	■	■	■	■
New Mexico	■	■	■	■
New York	■	■	■	■
North Carolina	■		■	
North Dakota		■	■	■
Ohio			■	■
Oklahoma		■	■	
Oregon			■	■
Pennsylvania			■	■
Puerto Rico	■		■	■
Rhode Island	■	■	■	■
South Carolina	■	■	■	■
South Dakota				
Tennessee	■			
Texas				■
Utah	■	■	■	■
Vermont	■		■	■
Virginia	■	■	■	■
Washington	■		■	
West Virginia	■		■	
Wisconsin	■	■	■	■
Wyoming	■		■	

■ *Yes*

RECENT STATE TAX CREDITS AND GRANTS
to Support Bioscience Growth

States and regions use economic development tax incentives to attract and retain bioscience companies, foster innovation clusters, and create high-paying jobs.

Here's a breakdown of common types of incentives and examples from various states from 2023-2025 efforts in company creation, expansion, and attraction legislation and other supportive economic development measures. Due to the extensive length of time inherent to the drug development process, small biotechnology companies, for example, often have difficulty obtaining early-stage financing for their research and development. Given smaller biotech companies are often not yet profitable, they are unable to immediately use their tax assets to offset income.

1. **Research and Development (R&D) Tax Credits:**

   - **Widespread Adoption:** As of 2025, 39 states offer their own R&D tax credit programs, often complementing the federal R&D tax credit. These credits generally provide a discount on state income taxes based on qualified research expenses.
   - **Refundable Credits:** Some states offer refundable R&D credits, meaning companies can receive a cash refund even if they don't have a tax liability. This is particularly beneficial for early-stage companies and startups that may not yet be profitable.
   - **Enhanced Credits:** States may offer enhanced R&D credits for specific activities or collaborations.

R&D as a Multiplier: Public investment in R&D has a significant ripple effect. One estimate suggests that every $1 of publicly funded basic research stimulates an additional $8.38 in bioscience industry R&D investment within eight years.

- **Examples of States with Notable R&D Credits:**
  - **Arizona** offers a credit for increased research activities, with a refundable portion for small businesses and additional credits for research conducted through state universities and research organizations.

- **California** offers a research tax credit and a sales tax exemption for equipment used in manufacturing and R&D in life sciences.
- **Connecticut** has increased its biotechnology R&D tax credit from 65% to 90% for companies making less than $70 million a year in sales.
- **Massachusetts** increased its R&D credit cap as part of a new $500 million life sciences bill.
- **Michigan** provides an extra $200,000 bonus for firms collaborating with in-state universities.
- **Puerto Rico's** research and development investment credit includes a 50% credit granted for eligible investment in R&D activities, including operational expenditures, clinical trials, or intellectual property.
- **Utah** offers an R&D tax credit for businesses investing in qualified research activities within the state. The credit includes 5% of qualified research expenses (QREs) that exceed a base amount, 5% of certain payments made to qualified organizations for basic research, and 7.5% of QREs for the current tax year.
- **Virginia** revamped its R&D credit in 2024 to provide refundable credits up to $45,000 per year for smaller firms.

2. **Job Creation and Investment Credits/ Grants:** Many states offer initial or enhanced incentives based on the creation of new jobs.
   - **Alabama:** Provides a cash refund of up to 4% of the previous year's gross payroll for new jobs for up to 10 years.
   - **Georgia & South Carolina:** Both states offer similar job credit programs over a five-year period, with credits ranging from $1,250 to $4,000 per net new job annually.
   - **North Carolina:** The Job Development Investment Grant effort provides a cash refund of up to 80% of personal income taxes generated by new jobs for up to 12 years.
   - **Virginia:** Offers a jobs credit of $1,000 per net new job and an annual job creation grant for companies in Enterprise Zones.

- **Investment Tax Credits:** These credits are based on capital investments made by companies.
  - **South Carolina:** Offers an investment tax credit of up to 2.5% of manufacturing and productive equipment property.
  - **Wisconsin's** Business Development Tax Credit (BTC) Program offers refundable tax credits to companies making qualified capital expenditures without job creation requirements, if they do not decrease their Wisconsin head count.

- The **New Jersey** Innovation Evergreen Fund Program facilitates private sector engagement to raise and invest capital in qualified New Jersey-based companies and promote strategic collaboration in the state's innovation economy. Qualified Businesses may access up to $10,000,000 of program investment capital for equity investments with New Jersey university spin-offs or businesses that utilize intellectual property developed at a New Jersey university that is core to its business model.

- **Sales and Use Tax Exemptions:** Many states provide full or partial sales tax exemptions for purchasing equipment or other tangible personal property used in manufacturing or R&D operations.
  - **Washington State's** general manufacturing and R&D incentive tax benefit program includes purchases of qualifying machinery & equipment used directly for manufacturing, R&D or testing operations in rural/high-unemployment areas.
  - **Maine** exempts sales of machinery and equipment used by the purchaser from sales tax, with equipment used directly and exclusively in research & development also qualifies for that sales tax exemption.

3. **Angel Investor Credits:** Several states aim to encourage investment in technology startups, including biotech, by offering angel investor credits.
   - The **Kansas** Angel Investor Tax Credit program allows investors to earn up to 50% tax credit on qualified investments in Kansas startups.
   - **Louisiana's** Angel Investor Tax Credit provides a 25% tax credit on investments by accredited investors into state-certified "Louisiana Entrepreneurial Businesses" (LEBs), with an enhanced credit if the business is located in a qualified Opportunity Zone or in a parish (county) with population under 50,000.
   - **Maryland** has the Biotechnology Investment Incentive Tax Credit that provides investors with income tax credits (up to 50% or more depending on location/enhancements) for investments in Qualified Maryland Biotechnology Companies (QMBCs).
   - **New Mexico** offers an angel investor credit up to $62,500 for investments in companies engaging in qualified research or manufacturing.

States across the nation have a diverse inventory of supportive economic development incentives to attract and retain the bioscience industry in their communities.

39 states and Puerto Rico have R&D Tax Credits

32 states and Puerto Rico have SBIR/STTR Matching Grants

26 states have Angel Funding Tax Credits

20 states have Early-Stage Venture Fund Tax Credits

40 states and Puerto Rico have Manufacturing Sales and Tax Exemptions

BIOMANUFACTURING STATE INCENTIVES for Continued Growth

Biomanufacturing in the U.S. is seeing rising investment and significant job growth, driven by breakthroughs in biotechnology research and production methods, and growing public demand for advanced therapies—factors that are vital to the bioscience economy and public health.

With this enhanced focus, there is a full spectrum of state and regional economic development measures now in place to support location siting of a manufacturing facility, including offering tax incentives, streamlining permitting processes and investing in workforce development programs to ensure a skilled labor pool.

Georgia offers a manufacturing investment tax credit that gives industrial companies including biotechnology operating in Georgia a limited opportunity to apply for an advantageous manufacturing investment tax credit to offset their payroll withholding tax liabilities within the state. To qualify for the Georgia investment tax credit, an industrial or telecommunications company must have operated in Georgia for the prior three years and made qualified investments in the state.

The **Kentucky** Reinvestment Act grants an income tax credit to companies that invest at least $2.5 million in machinery and equipment. The credit may offset up to 100% of the company's income tax for up to 10 years. Companies must retain at least 85% of their employees at the time of approval.

Louisiana provides an Ad Valorem tax credit to manufacturers, distributors and retailers equal to 100% of the property tax paid on inventory. For most taxpayers, the credit is refundable for businesses that have less than $500,000 in annual property taxes. The credit is not refundable for taxpayers receiving the industrial tax exemption. Excess credits may be carried forward five years. The carryforward period is extended to ten years for a credit against the personal income tax. Credit is also available for property taxes paid on natural gas used in a natural gas storage facility.

Mississippi grants a tax credit against their corporate income tax to manufacturers, distributors, wholesalers and retailers equal to 100% of the property taxes paid on inventory. The credit also applies to property taxes paid on rental equipment. Excess credits may be carried forward five years.

New York State offers a tax credit against their corporate franchise tax and personal income tax, equal to 20% of the property taxes paid for real property owned by qualified manufacturers in New York and principally used for manufacturing. The credit may also be available to lessees. Qualified manufacturers must have at least 50% of manufacturing receipts and either all or at least $1 million of manufacturing property in New York. Excess credits are not refundable and cannot be carried forward.

South Carolina grants an investment tax credit of up to 2.5% of the manufacturing and productive equipment property. The tax credit can be used to offset 100% of the company's income tax liability.

Tennessee offers an investment tax credit of 1% to 10% of industrial machinery. Expensed repair costs may also qualify for the tax credit. The tax credit may be used to offset 50% of the company's franchise and excise tax. Similar to the Tennessee jobs tax credit, the investment tax credit may be carried forward 25 years as a result of the single sales apportionment factor phase in.

West Virginia provides a tax credit against their corporate income and franchise tax credit on manufacturers, equal to 100% of the property taxes paid on inventory. Excess credits are not refundable and cannot be carried forward.

In addition, there are other needed building blocks for successful planning, construction, and operation of complex biomanufacturing facilities:

- Vital transport, communications, utilities, road access, air freight handling, water, broadband facilities are needed in all phases of site ramp-up and production.
- Availability of an existing talent pool of skilled bioprocessing technician workforce and relevant training organization like community college are imperative for continued growth of the site.
- Planning environment and business support assistance (Integrated, professional services to assist operations).
- Effective sector networks (Industry-led networks related to biomanufacturing issues).
- The presence of key suppliers of equipment and other manufacturing components.
- Proximity of biomanufacturing clients (Number of potential local/regional clients), and existing biomanufacturing cluster sites.

U.S. Bioscience Workforce
DEVELOPMENT INITIATIVES

The positive impact that a robust life science industry has in the United States at large is also seen at the state and local level. As individual states seek to attract industry presence within their borders, the need for a skilled workforce across all portions and levels of the sector cannot be understated. In collaboration with the private sector, non-profit organizations, and academia many state and local governments have implemented workforce development programs to meet the needs of the life science industry.

These workforce development programs cover all levels of education, starting with K-12 STEM programs that seek to make students aware of the opportunities available in the industry, to certificate programs for biomanufacturing and postgraduate studies.

In **Georgia**, the Georgia Biotech Teacher Training Initiative (BTTI) is delivered via a public-private partnership between Georgia Life Sciences and the Georgia Department of Education. Now in its seventh year, this training offers hands-on professional development for middle and high school teachers and leverages the biotechnology concepts found in traditional science education.

In 2025 in the state of **Ohio**, JobsOhio and the Ohio Life Sciences Association announced a training initiative to develop the state's biomanufacturing workforce. With plans to invest $30 million over five years, JobsOhio will work with industry companies to build a new state of the art training center, while Ohio Life Sciences will oversee operations and collaborate with Ohio higher education institutions to deliver curricula, creating a hub-and-spoke program of community colleges and technical schools spanning the entire state.

"The bioscience industry sits at the unique and exciting intersection of key characteristics for societal and economic progress-generating high levels of innovation that improve lives and consistently offering a growing and varied mix of high-wage employment opportunities that drive the nation's economy."

TEConomy Partners 2024

Source: www.bio.org/jobs

In **Maryland**, the Employment Advancement Right Now (EARN) program is a state-funded, industry-led workforce grant program which issues grants to organizations that provide training and workforce development to individuals looking to develop skills in technical fields, such as bio-manufacturing.

In **Missouri**, 2025 marks the third year of an annual General Assembly appropriation of $2.3 million state from the Missouri Department of Higher Education and Workforce Development. These funds are used to create and implement the Science to Jobs (S2J) program, which builds educational bridges with K-12 students and teachers and connects students with industry career opportunities.

North Carolina has implemented several life science specific workforce development programs. The Biomanufacturing Research Institute and Technology Enterprise (BRITE) has programs for training in Drug Discovery, Biomanufacturing, Pharmaceutical Sciences, and Clinical Research Sciences. BRITE was originally funded by the Golden Leaf Foundation, but now receives funding from the state-sponsored North Carolina Biotechnology Center.

In 2025, **Puerto Rico's** Department of Economic Development and Commerce established the $17,000,000 Reshoring Workforce Development Fund. This fund will be used to establish fast track learning programs for advanced manufacturing and enabling technologies at vocational and higher education institutions. This program will have badges that consists of 10-16 hours of exposure to different fields followed by an apprenticeship program.

The **Wisconsin** Biohealth Tech Hub received designation from the U.S. Economic Development Administration, which included funding for a specific workforce project led by Madison College and Milwaukee Area Technical College. The state has also provided additional matching funds to support the project which will establish apprenticeships and create talent pipelines that align with employer demands.

Rapid Growth Projection: The bioscience market is projected to experience significant expansion, with forecasts predicting it will reach approximately $5.04 to $5.85 trillion by 2034, growing at a Compound Annual Growth Rate (CAGR) of approximately 13-14%.

GLOSSARY OF BIOSCIENCE TERMS

As the bioscience ecosystem has advanced over the decades, there is a need to better define key components of company creation and expansion and description of the foundational building blocks for individuals or groups interested in various phases and tools needed to successfully navigate the growing economic development community of interest in the bioscience industry. Here are some useful examples of terms that reflect the expanding nature of those collaborative efforts.

Angel Investor: An investor who provides financial backing for small startups or entrepreneurs. Angel investors typically invest their own funds, as opposed to venture capitalists who manage pooled money in a professionally managed fund. The capital provided by an angel investor can be a one-time injection of seed money or ongoing support.

Biomanufacturing: A type of manufacturing that utilizes biological systems to produce commercially important biomaterials and biomolecules for use in medicines, food, and beverage processing, and industrial applications.

Bioscience Research: The basic, applied, or translational research that leads to the development of therapeutics, diagnostics, or devices to improve human health or agriculture.

Business Incubation: A business support process that accelerates the successful development of start-up and fledgling companies by providing entrepreneurs with an array of targeted resources and services.

Business Retention: The activity that an economic or workforce development agency undertakes in order to reduce the loss of private sector businesses.

Comprehensive Economic Development Strategy (CEDS): A strategy-driven plan for regional economic development. A CEDS is the result of a "regionally-owned" planning process designed to guide the economic prosperity and resiliency of an area or region. It provides a coordinating mechanism for individuals, organizations, local governments, and private industry to engage in a meaningful conversation and debate about the economic direction of their region.

Cluster / Industry Cluster / Innovation Cluster: Networks of thematically related companies and institutions in close, geographic proximity that — through competition and collaboration — have the potential to produce more efficient economic output as a group than they could individually.

Discretionary Incentives: A discretionary incentive is a tax benefit, grant, or financial incentive awarded at a government agency's discretion, typically requiring prior approval and a review process.

Drug Development Costs: The total cost of developing a new drug, including studies conducted after regulatory approval. According to a 2020 analysis by the Tufts Center for the Study of Drug Development, the average cost is $2.7 billion and up to ten years of research and testing.

Economic Development: A process that influences the growth and restructuring of an economy to enhance the economic well-being of a community. Economic development encompasses job creation, increases in community wealth and the improvement of quality of life.

FDA Review: The regulatory process by which the U.S. Food and Drug Administration reviews a sponsor company's data from clinical studies to determine if the new product is safe and effective for its intended use.

Human Capital: A measure of the economic value of an employee's skill set, including education, experience, abilities, and productivity.

Incentives: Benefits or rewards offered to motivate action. Incentives are often as part of an economic development strategy, including tax abatements and credits, low interest loans, infrastructure improvements, job training and land grants.

Net Operating Losses: Net operating loss is the result when a company's allowable deductions exceed its taxable income within a tax period. The NOL can generally be used to offset a company's tax payments in other tax periods through an IRS tax provision called a loss carryforward.

Initial Public Offering (IPO): The first sale of stock by a company to the public.

Public-Private Partnership: A venture which is funded and operated through a partnership between a government entity and one or more private sector companies, usually to finance, build or manage a project for the public good.

Seed Capital: The funding required to get a new business started. The capital is almost always supplied by an entrepreneur and his/her family, friends and relatives, and it is used to help attract other investments.

Small Business Innovation Research Grants (SBIR): Federal and state grant agreements entered into with companies focused on the performance of experimental, developmental or research work leading to potential creation of goods and services.

Statutory Incentives: A statutory tax incentive is a tax benefit automatically available to eligible organizations or individuals under established laws and regulations without requiring discretionary approval or negotiation.

Tax Credit: The amount of money that can be offset against a tax liability. Tax credits are often used as an incentive to attract new companies and retain existing companies in the state.

Tax Exemption: The amount of money that can be subtracted from the assessed market rate. Tax exemptions are often granted to individuals, institutions and types of property.

Economic Development Guide
CONCLUSION

State and regional partnerships across the nation continue to drive the growth and resilience of America's bioscience industry – advancing innovation across health, agriculture, and environmental research and manufacturing. Whether the need is for capital, workforce training, modern facilities, technology transfer, or supportive business climate legislation, the bioscience industry continues to work shoulder to shoulder across public and private sectors to translate discovery into solutions that improve lives in the United States and around the world.

As research, development, and manufacturing evolve, so too do the challenges. Sustaining this progress will require renewed commitment to funding early-stage innovation, strengthening access to venture capital, and expanding the workforce pipeline. Above all, it will demand more collaboration between industry, academia, and government partners to keep America's bioscience innovation vibrant in the face of rising global competition. The future of this sector – and of the science it brings to market -- will depend on continued public-private partnership and a shared determination to confront emerging global needs with creativity and resolve.

Biotechnology holds immense potential to transform numerous key sectors of our economy and will create good paying jobs at all skill levels in health care agriculture, defense, industrial manufacturing, and more.

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The information presented in this report is intended to help guide that continued effort. The examples here illustrate what becomes possible when states and regions align around a common goal: turning research into results and science into hope. As in the past, enduring progress will require steadfast support for science and a long-term commitment by local and state stakeholders to look focus on a shared vision of robust economies, resilient industries, and healthier citizens for generations to come.

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